HELLENIC OBSERVATORY
European Institute
Research at LSE

THE FLETCHER SCHOOL
TUFTS UNIVERSITY

GREECE AND THE EURO
From Crisis to Recovery

Edited by
George Alogoskoufis and Kevin Featherstone

JULY 2021

supported by
ONASSIS FOUNDATION

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Chapter 1. Introduction

George Alogoskoufis and Kevin Featherstone

The eight-year adjustment program followed by Greece in the aftermath of the 2010 crisis was concluded in the summer of 2018, albeit with ongoing policy constraints. The program was associated with the deepest and longest recession in Greece's post war history. While the Greek economy appeared to be on a path to an admittedly weak recovery after 2017, in 2020 it was hit by another major negative shock, that of Covid-19 which has caused another deep recession.

Many of the issues that confronted Greece before the Covid-19 crisis remain relevant for the sustained recovery of the Greek economy after the end of this latest crisis.

The pre-conditions – economic, political and institutional - for a sustained recovery of the Greek economy were examined recently by a number of prominent academics, many of whom possess extensive political experience in Greece. A selection of their contributions, first presented in a workshop at the London School of Economics, in December 2018, and a conference at the Fletcher School of Tufts University in April, is collected in this book.[1]

With ramifications for both Greece and the Euro-Area as a whole, the contributions consider the constraints that derive from the structural linkages between the domestic and the European levels. While concerned with the core economic agenda, they place it within its political, social, and institutional contexts in order to have a more complete assessment. They ask what scope there is for recovery, the priorities that need to be set, and the prospects for their attainment.

While written from different perspectives – and adhering to no common view - the chapters, nevertheless, cohere around a number of important themes:

- The historical depth and breadth of the domestic factors that led to the 2010 crisis: thus, addressing these will require an unprecedented effort of political will and capacity.

[1] These events were organised by George Alogoskoufis and Kevin Featherstone. The workshop at LSE took place on December 14, 2018 and the conference at Tufts University, on April 12, 2019, with financial support from the Onassis foundation, which is gratefully acknowledged. The editors would also like to thank Philipp Katsinas (Hellenic Observatory) for superb editorial assistance in the production of this e-book. Finally, George Alogoskoufis would like to thank Sheri Callender at the Fletcher School for excellent and cheerful administrative and secretarial assistance with the Tufts conference, while Kevin Featherstone would like to thank the team at the Hellenic Observatory for their support for the workshop and the book project.

- Amongst the priorities of reform, tackling the endemic problems of under-performing institutions will be critical.
    - Indeed, the costs – in terms of lost growth and the delivery of public goods – of such under-performance in the past are estimated here.
    - A major weakness has been the lack of effective fiscal institutions and the monitoring of fiscal management by the state. Despite reforms, there remains the need to further build-up institutional capacity in this regard.
    - Reforms of the state administration have been extensive, but their depth of impact is still found wanting.
    - The crisis adjustment programs spurred the further development of independent regulatory agencies, but their performance – across sectors – also remains uneven.
- The Greek economic model needs to be substantively revised going forward:
    - Addressing long-term problems of productive capacity and competitiveness will be key.
    - Bank-based financing will remain central, but the resilience and effectiveness of the banks will be determinant.
- The domestic growth path will be impacted by decisions made at the EU-level for the reform of euro-zone governance.
    - In the immediate period, this involves most notably the new European Recovery and Resilience Fund: its efficiency of resource allocation and its setting of funding priorities.
    - More generally, the effects of asymmetric shocks – and the problems inherent in managing a heterogeneous currency union – can be best mitigated by further moves towards a European fiscal union, allied to financial and labor market reforms.
- The political fall-out of the crisis has been far-reaching and the igniting of a dormant populism in Greek politics is likely to be only effectively addressed by a return to long-term, inclusive economic growth.
    - The mediating role of the US in the crisis of 2015, in particular, has served to abate the often-populist attacks made on Washington – helping to re-balance Greece's foreign policy strategy.

The book is organized in four parts. Part I contains overviews of the interactions between domestic institutions and policies and economic performance. Part II focuses on aspects of macroeconomic policy, finance and growth. Part III focuses on politics, institutions and

administrative reforms, while part IV examines international aspects such as policy interdependence, the asymmetries of the euro area and the role of geopolitics. Here, we endeavor to summarize the contributions.

1. Institutions and Economic Performance

Chapter 2 by Lucas Papademos considers the position of Greece in the euro-zone, both in the past and the future, in terms of the economic policy challenges. Specifically, it addresses three sets of questions: Firstly, whether the adoption of the euro by Greece was a mistake in light of the country's severe and protracted economic crisis, persisting structural weaknesses and remaining fiscal problems. Secondly, how Greece can achieve strong, sustained and equitable growth within the Eurozone in an environment of global economic transformation, rapid technological change and intense competition. After assessing the constraints imposed on fiscal policy by the country's heavy debt burden and the implications for economic growth of its low international competitiveness, a number of reforms and policies are proposed to raise total factor productivity, improve competitiveness and foster stronger, durable and inclusive growth. Finally, the chapter assesses the reforms and conditions required for the Eurozone to successfully overcome economic and political challenges and establish a genuine Economic and Monetary Union (EMU) against a background of increased populism, nationalism and Euroskepticism. The chapter concludes by outlining the likely effects of a more integrated EMU on Greece and the actions that should be taken by the country to prepare for the completion of the European project.

Chapter 3, by *George Alogoskoufis*, analyses the policy and institutional developments that led the Greek economy to the crisis of 2010 and the 'great depression' of the 2010s.

The main thesis is that the crisis of the post-2010 period was building up during the previous three decades and that its root causes were not merely economic, but social, structural, institutional and political. The fiscal imbalances created in the 1980s were not adequately addressed by the convergence policies of the 1990s, while the long-standing problem of low international competitiveness was further exacerbated by the failure to promote the necessary structural reforms.

Greece's accession to the euro area with major structural and fiscal imbalances and low and deteriorating international competitiveness, led to the gradual destabilisation of its external position and a steep rise in external indebtedness. The lopsided adjustment and the inadequacy of the reforms was due to domestic political and social constraints, both before and after euro area entry.

In view of the institutional weaknesses of the euro area itself, the external imbalances ultimately led to the external debt crisis of 2010, the imposition of the economic adjustment programs and the 'great depression' of the 2010s.

This chapter also explores the prerequisites for a sustained recovery of the Greek economy within the euro area, once the global economic crisis induced by the pandemic is over.

The author's conclusion is that the quest for wide ranging institutional and economic reforms remains the top priority.

Chapter 4, by *Kevin Featherstone*, analyses the economic costs of Greece's institutional weaknesses in relation to Greece's position within the European Union. The focus is both on the recent past and the future.

Empirical data is analysed to compare the performance of the public administration in fulfilling EU policy obligations. Greece is shown to be one of poorest performers, at a level comparable to Bulgaria and Romania. Further data is collated to compare the 'quality of government' (QoG) across EU member states. Again, Greece performs poorly. It is then shown that the two sets of data are statistically related: state institutions lacking 'impartiality' from wider socio-economic pressures are most likely to underperform in the delivery of EU public goods.

The chapter assesses the implications for Greece's convergence within the EU and its prospects for being able to accommodate increasing demands on its institutions resulting from a deepening EU integration process. There are new challenges here for the EU itself as it manages a heterogeneous set of member states. A 'tying hands' strategy of setting rules for national governments to follow is likely to be too indirect and superficial to achieve convergence in (institutional) performance.

The author concludes that the EU's new 'Recovery and Resilience Fund' is likely to be a revealing systemic test for both Athens and Brussels.

A related theme, related to the effects of the post-2010 crisis, is taken up in Chapter 5 by *Nicos Christodoulakis.* The most pronounced divergence in economic development in the euro area over the last decade took place between Greece and its peers, after a series of austerity measures imposed in the aftermath of the global crisis in exchange for a debt bailout. At the same time, Greece had suffered from a dramatic deterioration of institutions, ranging from severe blows in government effectiveness and political stability to market distortions and the weakening of the rule of law. Using the World Bank governance indicators as explanatory variables, an empirical growth model is used to calculate the cost of crumbling institutions in Greece in terms of per capita GDP foregone and, thus, explain the sharp divergence in incomes. The author concludes that Greece - alongside macroeconomic stabilisation - should urgently focus on improving institutions if a convergence process toward the more developed nations of the Euro Area is to set off again.

2. Macroeconomic Policy, Finance and Growth

Chapter 6, by *Vassiliki Dimakopoulou*, *George Economides* and *Apostolis Philippopoulos* has three aims:

First, to shed light on some new facts about the depth and duration of the Greek great depression over 2008-2016.

Second, to report some quantitative evidence of the driving forces of the output loss during these years. They investigate what explains the Greek great depression, whether things could be better and whether things be worse. To this end, they use a dynamic stochastic general equilibrium model that they have constructed in a previous paper.

Third, they draw some macroeconomic policy lessons that could be useful following the new economic crisis triggered by the Covid-19 pandemic.

Chapter 7, by *Helen Louri* and *Petros Migiakis*, focuses on the financial sector. The authors examine the existence of a feedback loop between the resilience of the financial sector and Greek economic activity.

They employ a sequence of structural VARs using data for bank credit, liquidity, capital, asset quality and private demand in 2001-2018. They use two data sets: One set of monthly data, with which they examine the determinants of credit provision by Greek banks, and a second set of quarterly data, with which they examine the finance-growth nexus for the Greek economy.

The authors present three main findings: First, that the deterioration in the quality of Greek banks' balance sheets affected the provision of credit to the economy negatively. Second, that central bank liquidity and recapitalisations of Greek banks provided only a partial remedy and, third, that the decline in credit significantly weakened economic activity.

The authors also find that there is a role for market financing of the economy but this cannot substitute for the predominantly bank-based financing. Therefore, as the Greek economy starts bouncing back Greek banks have an important role to play, first, by solving the problem of non-performing loans (NPLs) and by providing the necessary credit and, second, by improving the efficiency of capital allocation towards a more sustainable model of growth.

Chapter 8, by *Nikolaos Leounakis* and *Plutarchos Sakellaris* investigate the process of Greek economic growth. The authors decompose Greek economic performance over the last sixty years into the contributions of productivity, capital accumulation, and labor growth. They find that recent Greek economic history is a succession of long periods of boom with long periods of stagnation or depression.

The decisive factor in either booms or slumps has been total factor productivity (TFP) growth. In particular, bad performance of TFP is the main culprit for the fourteen-year recession from 1980 to 1993, as well as for the post-2008 depression. This suggests that action on reversing the shortfall in productivity should be the most important focus for policy makers.

The authors argue that the crisis has led to permanent losses of output. In projections, they show that the economy needs to grow at average rates of about 3.5% over the next five years to be able to recover in 2026 the standard of living enjoyed in 2007, its peak historical level.

Given that these projections were made before the recent pandemic, the recovery must be even more pronounced now.

The impact of the crisis in terms of income inequality and re-distribution is taken up by *Eirini Andriopoulou, Eleni Kanavitsa,* and *Panos Tsakloglou* in Chapter 9. It provides a detailed picture of the evolution of the level and the structure of inequality during the period 2007-2016, in which Greece faced one of the most severe debt crises among developed countries. The aim is to examine how changes in overall income distribution affected inequality between and within different socioeconomic groups and thus indirectly how the burden of fiscal consolidation was shared across population groups. The findings are linked with economic developments and policy choices of the period in question. The results show that inequality rose at the beginning and the peak of the crisis, but the magnitude of the change varies across different indices. The recorded increases are larger when the indices used are relatively more sensitive to changes close to the bottom of the income distribution. The increase in unemployment played the most substantial role for the decrease in income of a large share of the population, in combination with the absence of an adequate safety net. Inequality "within population groups" was far more important in shaping aggregate inequality than inequality "between population groups". The contribution of disparities between educational groups to aggregate inequality declined while that of disparities between different occupational groups rose.

The final chapter in this section, by *Ioannis Laliotis* and *Vassilis Monastiriotis,* examines aspects of flexibility in wage determination in Greece after the major labour market reforms of the first two Economic Adjustment Programmes of 2010-2015. We find no evidence of a wage curve; persistent sectoral wage premia and penalties; and only marginal improvements, towards marketisation, in regard to individual wage premia. Although not constituting a formal test of the impact of the labour market reforms on wage determination in the country, our results suggest that the reforms had limited effect in making wage determination in the labour market more flexible and more efficient from an economic point of view. We conjecture that further policy effort is needed to enhance labour market efficiency (and wage flexibility) in the country, possibly via avenues other than the continuing deregulation of employment relations – as past measures and reforms in this regard seem to have been of limited effect.

3. Politics, Institutions and Administrative Reforms

Economic strategies and outcomes cannot, of course, be properly separated from political conflicts and institutional capacities. This section widens the perspective to such matters. Chapter 11, by *Dimitri A. Sotiropoulos*, investigates the relation between populism, party politics and the economic crisis in Greece, comparing it to the case of Portugal.

Among all South European countries, Greece underwent the most severe economic crisis in the 2010s which gave rise to dormant populist reactions, which combined with diffuse political discourse and the political party system. In contrast to the comparable case of Portugal, populism in Greece was reflected in the emergence or strengthening of populist parties on the Left and the Right, the adoption of populism as political discourse by an otherwise radical left-wing party (Syriza), and its rise to power in 2015 on the wave of social reactions to austerity policies.

According to the author, populism was also manifested in the adoption of populist governing policies during Syriza's government rule, in coalition with the nationalist right-wing ANEL party, in 2015-2019.

The spread of populism and its rise to power in Greece are analysed in the light of the opposite experience of Portugal and are attributed to the legacies of democratic practice after the 1974 transition to democracy, traditions of political culture and the polarisation of the party system. In conjunction with the gravity and long duration of the post-2008 economic crisis, these political legacies were the catalyst for the sea change in Greek politics in 2011-2019.

Chapter 12, by *Georgia Kaplanoglou*, focuses on the lack of effective fiscal institutions and the weak monitoring of public finance developments in Greece. According to many, this has been among the major causes of the fiscal crisis of 2009.

This chapter explores aspects of the weak institutional framework that did not prevent the fiscal deterioration even within the context of EU fiscal rules. As a result, the efforts to build up institutional capacity on the fiscal front is one of the main challenges ahead.

The author argues that a deeper understanding of the Greek case, against valuable experience on the quality of fiscal institutions and monitoring, particularly in the European Union, is crucial in order not only to prevent unsustainable fiscal deficits in the future, but also to support a more efficient allocation of resources in the public sector, and to enhance accountability and democratic control.

The concerns of the author become even more relevant following the Covid-19 crisis and the fiscal deterioration that it entails.

In Chapter 13, by *Stella Ladi* and *Manto Lampropoulou,* the authors investigate market regulation via independent agencies in post-crisis Greece. Their analysis suggests that the debt crisis that erupted in 2009 has been a forceful factor for reforming Independent Regulatory Agencies (IRAs), but the performance has been uneven.

With a focus on network industries the authors outline the similarities and differences of IRAs regarding their status, powers and operation. The creation and strengthening of IRAs are linked with the policy context of market reform, discerning the liberalisation-oriented IRAs (pre-crisis) and the privatisation-oriented ones (post-crisis). The performance of the Greek IRAs is evaluated based on the indicators of the OECD Performance Assessment Framework for Economic Regulators (PAFER).

While similar problems were observed in all IRAs under study, the findings suggest significant variation in their role, powers and performance across sectors. The explanatory factors accounting for these problems are analysed with reference to the interplay between the external pressure for reform (EU, debt crisis) and the features of the domestic political-administrative system.

4. International Interdependence, Euro Area Asymmetries and Geopolitics

Chapter 14, by *Yannis Ioannides*, is a qualitative presentation of issues associated with macroeconomic policy interdependence with an emphasis on the institutional setting of the European Union and of the Euro zone area. It identifies the importance of fiscal multipliers and the resulting policy spillovers, and discusses some of the evidence by drawing on recent studies.

It then turns to a qualitative discussion of these key analytical components of Part II, which is available in a technical Appendix. The Appendix, which is available separately, is a quantitative treatment of key magnitudes characterising economies which can exercise their own national fiscal policy while engaging in free trade and maintaining their own currencies or, alternatively, sharing a currency. To appreciate these issues, the chapter benchmarks the different scenaria to the absence of trade, strictly speaking autarky, while allowing progressively fiscal and monetary policy under a monetary union as well as a fiscal union.

The chapter emphasises the importance of differences in population sizes in a general international equilibrium model of a monetary union under alternative scenaria of monetary, fiscal, and debt policy coordination. It also considers conditions for participating in a fiscal union within a monetary union, a hitherto unexplored question. The analysis allows for inefficiencies in tax collection that serve as another difference across countries and examines how union-wide coordination of tax and spending policy, typically a nation-specific competence, may improve welfare. This is intended to explore the contrast between monetary policy decisions that may be determined by deliberations and voting in the central bank, given the fiscal policy stance, and national fiscal policy interdependence, given union-wide monetary policy. It examines the implications of different sizes of the members of the union.

Chapter 15, by *George Alogoskoufis* and *Laurent Jacque*, provides a perspective on the euro area (EA), focusing on macroeconomic and financial asymmetries among its member states and the need for major and fundamental reforms.

After surveying the evolution of EU macroeconomic and monetary cooperation and developments since the creation of the euro, and particularly the euro area crisis, the authors argue that the euro area is in need of fundamental fiscal, financial and labor market reforms.

In addition to reforms currently discussed, a common EA budget of moderate size would help smooth out the asymmetric impact of macroeconomic shocks through the operation of automatic fiscal stabilizers. It would also help countries in recession face smaller national fiscal and financial consequences of such recessions, and would also partly address labor market fragmentation as it could be targeted to euro area wide unemployment insurance. It would also help in the avoidance of future crises if the scope of the ECB to act as a lender of last resort in times of crisis was expanded and officially recognised.

The analysis of this chapter is particularly relevant given the asymmetric impact of the Covid-19 crisis and the adoption of the Recovery and Resilience Fund.

The final chapter, by *Katerina Sokou*, focuses on geopolitics. It examines relations between Greece and the USA following the debt crisis.

According to the author, the Greek debt crisis acted as a catalyst for closer bilateral relations. Geopolitical considerations started becoming relevant again in 2010, when the Greek debt crisis threatened the foundations of the Eurozone, prompting the US to support the IMF bailout, the largest in the history of the Fund. The political unrest in Greece following the imposition of the austerity program awakened the geopolitical reflexes of U.S. foreign policy to help secure Greece's place in the West. The US administration played a mediating role between Greece's SYRIZA government and Greece's creditors with the goal of keeping Greece in the Eurozone. This stance helped improve perceptions of the US amid the Greek public, as American policy on Greece was politically non-controversial for the first time in the postwar era.

The author also stresses the significant uncertainties ahead, as sustained American support on the strategic and operational level is required for Greece to continue to be a stabilising force in the wider region.

Collectively, the chapters that follow here are intended as contributions to the public debate on setting a new reform agenda for Greece. The economic impact of the COVID-19 pandemic seem likely to be severe but mostly limited to the medium-term. By contrast, the underlying structural problems of the economy are deep-rooted and long-term. The fact that they pre-date the current emergency and have continued across governments, of different political complexions, indicates their endemic, systemic character. The political will to address them has fluctuated. We hope that the analyses and recommendations contained in this volume will contribute to the activation of the necessary reform agenda.

Chapter 2. Greece and the Euro: Past Performance and Future Challenges

Lucas Papademos*

Abstract

This chapter examines several issues pertaining to the performance of the Greek economy since the launch of the euro and explores the economic policy challenges that will be faced by Greece and the Eurozone in the future. Specifically, it addresses three sets of questions: Firstly, whether the adoption of the euro by Greece was a mistake in light of the country's severe and protracted economic crisis, persisting structural weaknesses and remaining fiscal problems. Secondly, how Greece can achieve strong, sustained and equitable growth within the Eurozone in an environment of global economic transformation, rapid technological change and intense competition. After assessing the constraints imposed on fiscal policy by the country's heavy debt burden and the implications for economic growth of its low international competitiveness, a number of reforms and policies are proposed to raise total factor productivity, improve competitiveness and foster stronger, durable and inclusive growth. Finally, the chapter assesses the reforms and conditions required for the Eurozone to successfully overcome economic and political challenges and establish a genuine Economic and Monetary Union (EMU) against a background of increased populism, nationalism and Euroskepticism. The chapter concludes by outlining the likely effects of a more integrated EMU on Greece and the actions that should be taken by the country to prepare for the completion of the European project.

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1. Introduction

This is a very special conference taking place at momentous times for Greece, the European Union (EU) and the Eurozone, all of which are facing formidable challenges.

After eight years of extraordinary economic adjustment, which has entailed huge economic and social cost, Greece has entered the so-called post (MoU) memorandum phase. The transition from a long period when three supervised economic adjustment programs were implemented to a policy regime that is less externally constrained justifies a sigh of relief and, in a certain sense, is an economic policy milestone. Nevertheless, this transition is not a sufficient cause for exuberant celebration. A lot still remains to be done to improve the country's economic performance and social welfare: notably, to achieve strong, sustained and equitable growth, reduce exceptionally and unacceptably high unemployment, and secure the sustainability of public finances over the long run.

This year marks the 20th anniversary of the launch of the euro. This is an occasion for assessing how effectively it has achieved its objectives: to maintain price stability, support growth and safeguard financial stability in the Eurozone. Overall, I believe the euro's mission has been accomplished. Nevertheless, the euro's 20th birthday is not an occasion for unconditional, euphoric celebration. Although the objective of protecting macroeconomic and financial stability has been achieved, the European monetary union has experienced intense pressures and faced extraordinary policy challenges. At times, its cohesion and stability – economic, social and political – were severely tested and the euro's viability was questioned. A lot needs to be done to create a genuine Economic and Monetary Union (EMU) that can foster stronger growth in the Eurozone, deal with a potential financial crisis in the future more effectively and ensure the euro's viability over the long run.

So, this conference is very timely and it focuses on many important, pressing and interconnected issues for Greece and the euro. As I will argue, the future of the Greek economy is intertwined with the future of the European project and the single European currency.

I would like to thank the organizers for inviting me to participate in this event and give the opening speech. Both George Alogoskoufis and Kevin Featherstone have been very much involved, in various capacities over many years, in policy matters pertaining to the Greek economy and the European integration process. They have put together a comprehensive and impressive agenda of the key issues for Greece and the euro. I can rationally predict – rationally in the sense of the word as defined by John Muth, Robert Lucas, Thomas Sargent *et al*. – that the presentations and debates that will follow mine will be valuable and thought-provoking.

In my speech on the general topic of the conference, I thought it would useful to address three sets of pertinent questions.

- Firstly, was the adoption of the euro by Greece a mistake in light of the country's severe and protracted economic crisis and in view of persisting structural weaknesses and remaining fiscal problems?

- Secondly, will Greece be able to grow strongly and prosper in a sustained and equitable way within the Eurozone in the years to come? How can this objective be achieved in an environment of global economic transformation, technological revolution and intense competition?
- Finally, will the EU and the Eurozone successfully overcome current and future economic and political challenges and establish a Union that will be more integrated economically, financially and politically? How can such a goal be attained in an environment of increased populism, nationalism and Euroskepticism?

These are many and challenging issues. Given the time constraints, I shall have to provide relatively concise, though reasonably precise answers.

2. The Adoption of the Euro and the Performance of the Greek Economy

Greece's membership in the Eurozone has been questioned by some academics and policymakers considering the country's severe and protracted debt and economic crisis and in view of persisting structural weaknesses and remaining fiscal problems. [2]

It has been argued, by some, that, overall, Greece has not benefited by joining the Eurozone and that the crisis was a consequence of the fact that its economy and institutions were not sufficiently prepared to function efficiently and appropriately given the policy constraints imposed by the adoption of the euro and the competitive pressures resulting from participation in the Single European Market. It has also been argued that the depth and length of the recession mainly reflected the high dose of fiscal austerity required by Greece's international creditors combined with the unavailability to a Eurozone member state of the exchange rate as a policy instrument to support economic activity. Hence, it has been suggested that a temporary exit of Greece from the Eurozone and the readoption of the drachma would help resolve the debt crisis in a less painful manner, support faster economic recovery and promote stronger long-term growth.

These propositions are generally false, although some of the arguments put forward include elements of truth.[3] Overall, Greece has benefited significantly by joining the Eurozone. The adoption in the mid-1990s of the goal of euro membership acted as a motivating force and a catalyst for stabilizing the economy and achieving high rates of uninterrupted growth for 14 years (1994-2007) following a prolonged period of high inflation, excessive deficits, rising debt and mediocre growth. During the eighties (1981-1990), annual inflation averaged 19%, the growth rate fluctuated around a mean of 0.7% and the government deficit hovered between 7.3% and 15.9% of GDP. That was not an admirable economic performance to be nostalgic

[2] See, for example, the interview of Wolfgang Shäuble with the *Financial Times*, March 22, 2019.

[3] This section draws and elaborates on Lucas Papademos "Was it a good idea for Greece to join the eurozone in the first place?" in Mariana Cook and Robert M. Solow, *Economists*, Yale University Press, New Haven and London, 2020.

about. In the first half of the nineties, the economic situation had improved to some extent, with inflation falling to 9% and growth averaging 1.3%, but fiscal imbalances remained excessive and the debt ratio had climbed to 99% in 1995.

As you know, Greece joined the Eurozone on January 1, 2001. During the previous five years (1996-2000), inflation steadily dropped to 3.2% in 2000 and growth averaged 3.7%, while in the seven years after euro adoption (2001-2007) annual inflation and growth averaged 2.9% and 4%, respectively. Thus, over more than a decade, Greece experienced strong and steady growth in an environment of relative price stability, and per capita income rose both in absolute terms and in relation to the EU average, from 74% of the former EU-15 average in 1996 to 83% in 2007. Moreover, important reforms were implemented in several areas, albeit rather slowly and to a lesser extent than planned and required.

The debt crisis which erupted in 2010, was not due to unsustainable public finances and low wage and price competitiveness when Greece joined the Eurozone. It was mainly a consequence of the policies pursued after the country joined the Eurozone, which were incompatible with the fiscal discipline and prudent labor market policies required by Greece's participation in the Eurozone and the stability-oriented monetary policy of the European Central Bank (ECB). Another important factor contributing to the crisis was that necessary reforms to boost productivity, strengthen market completion and improve the effectiveness of institutions were delayed or only partly implemented.

Persistently excessive and partly concealed budget deficits larger than the norms required by the Treaty, and wage increases greater than productivity growth led to the accumulation of high debt and to a significant erosion of competitiveness. The result was an extraordinary widening of the current account deficit and a sharp rise in external public debt that eventually could not be financed at reasonable cost and be sustainable.

The underlying factors accounting for these policy mistakes – some of which were also made in other Eurozone countries – included an inadequate understanding, by both policymakers and market participants, of the domestic policy constraints imposed by monetary union, inherent difficulties in reform implementation, political populism and electoral cycles, as well as market euphoria and underestimation of the risks associated with exorbitant debt. Warning and recommendations by European institutions and the ECB, as well as by the Greek central bank, proved insufficient to influence domestic policy and prevent the crisis.

The severity and persistence of the Greek crisis were not really due to the unavailability of the exchange rate as a policy instrument – as our experience in the 1980s makes clear – or to other constraints imposed by Greece's membership in the Eurozone. The unprecedented decline of output and employment was the result of the cumulative effects of several factors – economic, political and institutional – including some of those that led to the crisis.

Fiscal and external imbalances in Greece were greater than in other crisis-stricken Eurozone countries. Since, in the case of Greece, *both* government debt and deficits, as well as future pension liabilities, were exceptionally high, achieving debt sustainability required substantial fiscal adjustment and entailed larger output loss. Importantly, the policy-mix, especially during certain phases of the adjustment process, was not sufficiently well-balanced to

support growth. It laid more emphasis than warranted on fiscal consolidation than on structural reform. Reforms which would have supported economic activity and employment, and would also have facilitated fiscal adjustment, were only partly implemented or postponed for various reasons, including insufficient understanding of their importance, pressure from vested interests and inadequate administrative capacity.

The extraordinarily large external imbalances before the crisis reflected the combined effects of structural impediments on the supply side, aggregate demand pressures fueled by excessive public and private borrowing, and declining competitiveness. Consequently, they should have been tackled by addressing at the same time the structural, cost and demand-related determinants of current account deficits. Through a process of "internal devaluation" labor cost competitiveness has been fully restored to its 2001 level, while price competitiveness has substantially improved, thereby increasing exports. But structural competitiveness has not been sufficiently enhanced, thus preventing a stronger export and growth performance.

Crucially, intense political antagonism, rising populism and extremism made it impossible to reach a consensus among political parties and social partners on the economic policies being implemented. The toxic political atmosphere that prevailed at times undermined public confidence in the policies pursued and increased uncertainty about the economic outlook, thus impairing policy effectiveness and dampening aggregate demand and economic activity.

In sum, it is the cumulative effect and mutually reinforcing interactions of these and certain other factors that explain the severity and duration of the crisis and its concomitant influence on social welfare and cohesion.

Indeed, the burden of adjustment was unevenly distributed. Income inequality and various measures of poverty and social exclusion increased significantly during the first three years of the crisis and then fell only slightly or stabilized. Although pensioners suffered sizable income losses, younger people and the population in urban areas were affected to a relatively greater extent.

An exit of Greece from the Eurozone would neither have helped to resolve the crisis faster and in a less distressful way nor would it have improved the economy's export performance and growth prospects. On the contrary, in all likelihood it would have had devastating effects on the economy's stability and prosperity for years to come. It would have also entailed serious political and geopolitical risks for Greece and Southeast Europe. A number of reasons support this conclusion.

As almost all debt, both external and domestic, is denominated in euros, the adoption of a national currency, presumably devalued substantially against the euro, would lead to a generalized default against both external and domestic creditors. External public debt is mostly held directly or indirectly by European governments, and the cost of the default would have to be borne by the taxpayers of Greece's European partners. The economic and political repercussions of such an event would be extremely serious and long lasting. Domestically, the banking system would effectively collapse and would have to be recapitalized by the government increasing the budget deficit and public debt, which would have to be financed

by money creation. The implications for economic activity and financial stability would be detrimental.

The competitiveness gains and expected associated beneficial effects on growth, if any at all, would be temporary, as Greece's own experience in the 1980s has shown. A substantially devalued currency would create inflationary pressures and strong demand for wage increases, especially following the sharp decline in real incomes during the crisis, which, under the circumstances, would inevitably have to be accommodated by the monetary authority. Moreover, the country's default and the strain on its banking system would adversely affect exports. Most likely, inflation would rise sharply, while the envisaged positive impact on economic activity would be small. In addition, Grexit would have several other unfavourable effects on the Greek economy and politics and on society's welfare. Exiting European monetary union is a more complex and challenging process – economically, politically and technically – than abandoning a fixed exchange rate regime.

In view of the above, it is not surprising that the Greek people have overwhelmingly been in favor of Greece's membership in the Eurozone, even during the darkest days of the crisis, in 2011-2012 and in 2015, despite the sharp decline in real income and the other sacrifices endured. That support reflects the desire for stability that the euro entails, the memory of the mediocre performance of the Greek economy in the 1980s, and the concern that macroeconomic policy would be less prudent and effective, while the necessary structural reforms would be less likely to be implemented outside the Eurozone. More generally, it reflects the understanding that participation in the Eurozone is an essential component of the large and ambitious project of European integration – a project that the majority of Greek people believe offers economic, social and security advantages in the long run.

3. Can Greece Achieve Strong, Sustained and Equitable Growth within the Eurozone in the Future?

Looking ahead, will Greece be able to achieve strong, sustained and equitable growth within the Eurozone in the future? The answer to this question largely depends on the policies to be implemented and other actions to be taken at the national level. But, it also partly depends on the progress to be made at the European level in creating a genuine EMU. Let me first focus on what needs to be done at the national level – the reforms to be enacted and the broader conditions to be established.

To begin with, it is important to keep in mind certain facts or constraints, whose importance is often overlooked or underestimated. The attainment of the growth objective will have to be aimed at and achieved in light of three constraining factors: first, the obvious one: the unavailability to a Eurozone member state of the exchange rate as a policy instrument; second, the constraints on economic policy imposed by the country's high public debt and the associated commitment to maintain sizeable primary surpluses for many years to come, and third, and importantly, the constraints on the economy stemming from the external

environment, which is characterized by the ongoing global economic transformation, rapid technological change and intense competition.

3.1. Fiscal Policy and Reform

The size of the Greek public debt, despite its restructuring in 2012 and various debt relief measures enacted in recent years, continues to be a burden on fiscal policy. It is positive that the extension of debt maturities and the grace periods for interest payments, which were agreed with creditors, have reduced and smoothened debt-servicing requirements over the next 10 years, which are no longer excessive. Nevertheless, although the public debt is relatively manageable over the coming decade, it is not considered sustainable over the long run, given the current growth projections.[4] Moreover, it is susceptible to adverse real and financial shocks, including those that may affect future interest rates. [5]

What are the implications of the country's debt burden for policy? It will be possible to improve the debt dynamics and renegotiate the commitments on the necessary primary surpluses, but only if there is convincing evidence and a credible policy strategy that growth will be significantly higher than previously predicted. At present, however, fiscal policy cannot be employed to stimulate aggregate demand significantly and sustainably. Achieving *strong* and *viable* growth inevitably has to rely mainly on nonfiscal measures, notably on policies and actions that will raise total factor productivity growth and foster greater dynamism in the Greek economy.[6] Fiscal policy and fiscal reforms can be designed and implemented so as to promote potential growth – the supply side of the economy – through an efficient and competitive tax system and by raising public investment relative to public consumption, while they can also contribute to addressing increased income inequality.

3.2. International Competitiveness: Concept, Determinants and Performance

I will now argue, and I hope that we can all agree on this, that since the Greek economy is relatively small and open, the main – indeed the only – way to achieve strong and durable growth is to enhance its international competitiveness in the broad sense of the word. A

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[4] A main reason that *long-term* debt sustainability remains a concern is that recent debt relief measures agreed in 2017 and 2018 contributed to *medium-term* debt sustainability by (lowering) (reducing) significantly debt-servicing requirements over the period 2018-2031 and shifting the burden of debt-servicing to the future. The nominal amount of debt has not been reduced as was done by the restructuring of Greek public debt with private sector involvement (PSI) in 2012, while the agreed extensions of debt maturities have been relatively modest.

[5] For recent debt sustainability analyses, see International Monetary Fund, "Greece: First Post-Program Monitoring Dszaiscussions", IMF Country Report No. 19/73, February 2019; European Commission, "Enhanced Surveillance Report – Greece", *European Economy*, February 2019 and Communication from the Commission, Update of the Enhanced Surveillance Report, April 2019.

[6] An original and insightful analysis of the concept and determinants of grassroots economic dynamism and a fascinating, thought-provoking assessment of its significance in fostering indigenous innovation and widespread prosperity are provided by Edmund S. Phelps, *Mass Flourishing: How Grassroots Innovation Created Jobs, Challenge, and Change,* Princeton University Press, Princeton and Oxford, 2013.

country's competitiveness is a complex and multidimensional concept, defined by many elements. It is determined by the macroeconomic environment, the country's institutions, human capital and infrastructure, and, more generally, by all those factors that determine the total productivity of the economy. The efficient functioning of markets and institutions, the effectiveness of factors of production, which *inter alia* incorporates the contribution of technology and innovation, the development and soundness of the financial system determine the cost, the price, the quality and the range of goods and services produced by the national economy and, hence, its international competitiveness and long-term economic growth.

At the beginning of the Greek crisis, in 2010, the low degree of competitiveness of Greece reflected, among other things, adverse macroeconomic conditions, inefficient market structures, and ineffective institution functioning, which combined to result in comparatively high production costs and high prices, and a relatively limited range and low quality of goods and services. At present, following long and arduous fiscal and structural adjustment over the past nine years, the fiscal position of the country has improved significantly, competitiveness as measured by relative unit labour costs has been fully restored to its 2001 level, while price competitiveness and the quality of produced goods and services have also improved. These developments have contributed to the increase in net exports and the recovery of the economy.

Nevertheless, other determinants of competitiveness, such as the availability and cost of financing, the cost of energy, the functioning of many institutions, the effectiveness of public administration, have not essentially improved. For this reason, Greece's competitiveness in the broad sense of the concept has increased only marginally compared to its very low level in 2010, as well as relative to the recorded rise in the competitiveness of other Eurozone countries, which had implemented programs of economic adjustment, such as Ireland, Portugal and Cyprus.

According to available indices of international competitiveness, Greece's position is very unfavorable. The 2018 Global Competitiveness Index developed by the World Economic Forum ranks Greece 57th overall globally, with a score of 62.1 out of 100, among the 140 countries assessed.[7] Particularly worrisome is the finding that Greece has the lowest score among all the 27 EU member-states and the 19 Eurozone countries, since the growth prospects of the Greek economy very much depend on its ability to compete successfully within the Eurozone.

Equally disappointing is the ranking of Greece globally with regard to its innovation capability (44th out of 140) and its business dynamism, which is ranked even lower (72nd out of 140). Moreover, both these innovation-related rankings are at the lower end in the EU and the Eurozone. While the country's innovation *capability* is relatively good, favourably influenced by such determinants as the quality of its research institutions (31st), scientific publications (30th) and patent applications (36th), its innovation *ecosystem* is adversely affected by other factors such as workforce diversity (123rd), venture capital availability (129th), financing of

[7] See World Economic Forum, *The Global Competitiveness Report 2018*, p. xi., Geneva, 2018.

SMEs (137th) and, significantly, by the above-mentioned poor ranking regarding the country's business dynamism, which reflects various barriers to entrepreneurship that also hinder the growth of innovative companies. These findings are troublesome because innovation has been found to be a major driver of total productivity and long-term output growth.

The results I have presented are based on the indices of competitiveness and innovation of the World Economic Forum, which are well known and influence investment decisions. However, other indices of competitiveness and innovation lead to similar conclusions about the degree of competitiveness of the Greek economy and the country's capability to innovate.[8]

There are two other observations relevant to assessing the country's past performance and prospects for improvement. They concern the evolution of Greece's competitiveness over time and relative to developments in other Eurozone countries. Over the past ten years or so, both the index of competitiveness and the index of innovation capability of Greece remained at very low levels, although the innovation index recorded a modest increase.

Importantly, over the same ten-year period, Greece's competitiveness has remained significantly lower than that of other countries (e.g. Ireland and Portugal) that had implemented economic adjustment programs, as well as of Spain and Italy. Moreover, the cumulative rise in the innovation index recorded in Greece since 2011 was appreciably smaller than the corresponding increases in these countries, especially in Ireland.

The conclusion emerging from these developments is not encouraging. Despite the improvement in the macroeconomic environment, as well as in cost and price competitiveness, and the enactment of various reforms aimed at enhancing the functioning of markets and institutions, overall the competitiveness of Greece has been characterized by considerable inertia: the gains have been small during the past ten years and from a very low starting level.

3.3 Competitiveness and Growth: Some Empirical Evidence

I have presented at some length the broader notion of competitiveness, the ranking of Greece globally and relative to its European partners, as well as its evolution over time, because I have become progressively more convinced that this broader concept of competitiveness is of greater relevance and of crucial importance in defining the true competitiveness and attractiveness of an economy that will encourage more productive investment, enhance export performance substantially and, hence, foster higher long-term growth.

This conviction is supported by available empirical evidence showing that more competitive economies in the broad sense of the word have achieved higher income levels over time, have been more resilient to adverse shocks, and have been associated with superior rates of

[8] Other pertinent indices of innovation and competitiveness include the Global Innovation Index of the French institute INSEAD, the Innovation Union Scoreboard of the European Commission, and the economy rankings in the *Doing Business* Report of the World Bank.

growth of *human development* and *inclusive development*, that is more equitable growth. Let me highlight three results with reference to Greece.

An interesting empirical observation emerges by comparing the degree of competitiveness of countries – both advanced and emerging market economies – in 2007, the year before the global financial crisis, with their average rates of economic growth over the following ten years.[9] The three most competitive economies in 2007 experienced significantly higher average growth rates over the decade that followed, while the three least competitive countries recorded the lowest average rate of growth. In the case of advanced economies, the three countries with the lowest degree of competitiveness, which included Greece and Italy, had negative average growth rates.

Society's welfare is, of course, not determined exclusively by GDP growth. Various indices have been developed that provide a broader measure of economic and social progress than GDP growth alone, such as an Index for Inclusive Development[10] and an Index for Human Development used by the United Nations Development Programme.[11] These indices comprise a host of indicators of social and human development, such as income inequality and poverty measures, life-expectance rates, and indicators of education and health, which determine the quality of life, the development of human capital and the degree to which an economy and society are inclusive.

An important empirical finding is that there is a close positive relationship between indices of inclusive growth and human development for a country, on one hand, and its degree of global competitiveness, on the other.[12] The unsatisfactory finding for Greece is that in 2017 it had the worst inclusive growth as well as competitiveness performance among advanced economies. However, over the period 2007-2016 it was characterized on average by an appreciably higher level of human development, given the competitiveness of its economy. This latter finding is more satisfactory and encouraging. The general conclusion from this empirical evidence is that enhancing the competitiveness of a country fosters income growth as well as the rates of inclusive growth and human development over the long term.

The last empirical result I would like to highlight relates to the contribution of innovation to output growth, because this is becoming increasingly important in general and for Greece in particular in the globalized economy that is being transformed by rapid technological change. Modern growth theory and a body of empirical evidence have convincingly demonstrated that *knowledge* and *ideas*, which lead to the creation of innovative products and the adoption

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[9] See "The Quest for More and Better Growth" in *The Global Competitiveness Report 2017-2018,* World Economic Forum, Geneva, 2017.

[10] Organization for Economic Co-operation and Development (OECD), *Bridging the Gap: Inclusive Growth 2017 Update Report,* Paris, OECD, 2017; and World Economic Forum, *The Inclusive Growth and Development Report,* Geneva, 2017.

[11] United Nations Development Programme, *The Human Development Report,* United Nations, New York, 2019. The Human Development Index (HDI) is available at http://hdr.undp.org/en/content/human-development-index-hdi

[12] See "The Quest for More and Better Growth" and The Human Development Index, *op. cit.*

of innovative processes in production and management, are key drivers of productivity and long-term sustainable growth.

A noteworthy conclusion of recent empirical studies is that productivity and output growth do not depend only on the creation of new ideas and new technologies, which broaden and revolutionize the production process in certain sectors or even whole countries. Productivity and output growth also depend on the *application* and *diffusion* of new technologies by firms in other sectors and in other countries by helping to raise their own productivity.[13] In other words, the application and diffusion of new technologies in sectors or regions beyond those that originally adopted them is also important to the development of the economy.

Unfortunately, Greece continues to be behind other advanced economies with regard to the establishment of an effective innovation ecosystem, as well as the application and diffusion of innovation and new technologies, despite the progress made in recent years. Although there have been several notable actions and initiatives, both by the public and private sectors, aimed at fostering innovation activities and technology transfer, they have not proved sufficient so far to improve the overall situation.

There is plenty of scope and urgent need to carry out more research, using various indicators and methodologies, to further explore the empirical significance regarding the contribution of the various determinants of competitiveness to productivity and employment growth, as well as to broader measures of social welfare. The findings of such research would help policymakers to design and implement appropriate strategies for growth and prosperity. This brings me to the next part of my speech on the reforms, policies and other actions required for Greece to achieve strong and durable growth. I will be concise in emphasizing the key policies and reforms where priority should be given.

3.4 Policies and Reforms to Improve Competitiveness and Foster Sustained Growth

As I stressed earlier, the policies and reforms implemented during the previous eight years of economic adjustment have definitely contributed to improving significantly certain components of competitiveness, notably cost and price competitiveness, but structural competitiveness increased only marginally. There is therefore a clear and urgent need to introduce deeper and broader reforms to improve the functioning of institutions and markets, enhance human capital, and develop an effective innovation ecosystem. Such reforms will jointly contribute to the establishment of fundamental conditions for raising productivity, encouraging investment, boosting exports and achieving stronger and sustained growth.

Priority should be given to reforms in areas where major weaknesses and needs for improvement have been identified and their positive impact is likely to be greater. Hence, priority should be given to the following reforms and policies aimed to:

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[13] See Benoît Cœuré, "Productivity and Growth: Innovation and Diffusion", Introductory statement at the session "Revitalizing the Global Economy", Davos, January 20, 2017; Mario Draghi, "Moving to the Frontier: Promoting the Diffusion of Innovation", Speech at the Conference "Fostering Innovation and Entrepreneurship in the euro area", March 13, 2017; Veugelers, R., "The European Union's Growing Innovation Divide", *Bruegel Policy Contribution,* Issue 2016, No. 8, April 2016; and OECD, *The Future of Productivity,* Paris, 2015.

- improve the effectiveness of public administration and, more generally, of the public sector, so as to enhance the quality of the services provided and reduce bureaucracy;
- strengthen the functioning and foster the development of the financial system, so as to increase the availability and reduce the cost of bank credit to the private sector, especially to the SMEs, and promote alternative forms of financing investment and the activities of innovative firms;
- revamp the tax system, so as to make it simpler, internationally competitive, more equitable and growth-friendly;
- increase the efficiency of the judicial system, so as to speed up the administration of justice, which *inter alia* will encourage investment;
- improve the quality of the educational system and of vocational training, so as to strengthen the knowledge and skills essential for the new technology-driven economy;
- develop an appropriate institutional, research and entrepreneurial environment – an ecosystem – that will support innovation and foster new dynamism in the economy.

There are, of course, other areas where policy action is necessary in order to remove obstacles and bottlenecks to investment and exports, to strengthen total productivity and promote economic dynamism. But the reforms I have just highlighted are especially important and urgently needed. Some of these reforms can be implemented relatively quickly and can be expected to yield positive results over a medium-term horizon. Other reforms will be more difficult to implement, for a variety of reasons, which I am sure most of us can appreciate though not accept, while their beneficial effects will be realized with fairly long time lags. But such reforms, for example those pertaining to the public administration, the judicial system and education, are also of fundamental importance. Hence, it is essential to overcome the inherent inertia, the pressures of vested interests and the political myopic behavior that have prevented their implementation in the past.

Moreover, as I have emphasized on other occasions, if a number of key reforms and associated policies are implemented simultaneously, it is likely that they will have mutually reinforcing positive effects on activity and employment through various channels, including confidence and expectations, thereby bringing the Greek economy faster to a path of durable growth.

Needless to say, the performance and prospects of the Greek economy, as well as the design and effectiveness of its policy strategy and reform agenda will also very much depend on future developments in the Eurozone economy and, importantly, on the further steps that will be taken – or will not be taken – towards establishing a genuine Economic and Monetary Union. This observation brings me to the last part of my speech.

4. Reforms and Prerequisites for a Genuine EMU and its Impact on Greece

Twenty years after the creation of the euro and the establishment of the Economic and Monetary Union, it is fair to say that EMU has broadly accomplished its mission, as defined by the objectives specified in the Treaty: to maintain price stability, support economic growth, and safeguard financial stability. You may think that this assessment is biased because of my professional background. This is not the case. The fact is that price stability was definitely preserved, economic activity in the Eurozone as a whole was supported effectively, and financial stability was safeguarded, during periods of extraordinary turbulence in financial markets and stress in banking systems.

Nevertheless, the euro's 20th birthday is not an occasion for unconditional, joyous celebration. Macroeconomic and financial stability was overall protected, but some of the implemented policies entailed substantial economic and social cost, particularly in some countries, including Greece. Moreover, during the darkest years of the Eurozone crisis, in 2011-2012, the European monetary union experienced intense pressures and faced unprecedented challenges. Its cohesion and stability – economic, social and political – were severely tested. And, at times, even the euro's viability was questioned. Ultimately, the crisis was overcome and the euro was saved because of (i) the resolute, far-reaching, though socially painful, policy actions in some member states, (ii) the extraordinary and often unconventional monetary policy measures taken by the ECB, and (iii) the significant reforms enacted that improved the institutional architecture and economic governance of EMU.

Looking ahead, several key issues need to be addressed:

- Can EMU achieve stronger, sustained and balanced growth? And how?
- Can the Eurozone deal with another crisis more effectively in the future?
- Is the euro's viability secure in the long run, especially in a challenging global economic environment with a threatening and evolving political landscape of growing populism and nationalism?

I believe that the answers to these three questions are conditional. They will be positive, 3 "yes", if and only if further meaningful steps are taken towards completing and reinforcing the institutional architecture of EMU, by developing its economic pillar (the E in EMU) and by strengthening its political foundations. How can this be done? And will it be done?

Over the past few years, a number of proposals have been advanced regarding the completion and reinforcement of EMU. Among these proposals, especially important are: The Report of the Five Presidents of the European Institutions on the Completion of EMU, the White Paper of the European Commission on the Future of Europe and the speech of President Emmanuel Macron, "Initiative for Europe", at the Sorbonne University.[14] There are

[14] The Five Presidents' Report, "Completing Europe's Economic and Monetary Union", Report by Jean-Claude Juncker in close collaboration with Donald Tusk, Jeroen Dijsselbloem, Mario Draghi and Martin Schulz, European Commission, 22 June 2015; European Commission, *On the Future of Europe: Reflections and Scenarios for the EU27 by 2025*, White Paper, Brussels, March 1, 2017; and M. Emmanuel Macron, "Initiative for Europe", speech by the President of the French Republic at the Sorbonne University, Paris, September 26, 2017.

also pertinent proposals by the European Commission, academics and special committees. Nevertheless, very little progress has been made in implementing most of the recommendations, although a lot of preparatory work has been done and some of the proposed reforms have been discussed by the Council of Ministers and European leaders. The fundamental reason for the delay and procrastination is political, mainly because progress towards the establishment of a genuine EMU requires a further transfer of national sovereignty to European bodies or institutions and may involve more "burden sharing" between member states.

In my view, it is imperative to enact reforms that are urgently needed to address current and potential – indeed likely – future challenges.

Specifically, reforms to

(1) improve the growth performance of the Eurozone,

(2) reduce income inequality within individual countries,

(3) facilitate economic convergence between member states, and

(4) protect financial and macroeconomic stability effectively and efficiently, especially in the event of major asymmetric shocks.

To this end, I believe that three steps are essential and should be taken over the medium term.

- The completion of the Banking Union, with the creation of a Single European Deposit Insurance Scheme, the strengthening of the Single Resolution Mechanism and the improvement of the rules and procedures for the recapitalization of banks by the European Stability Mechanism (ESM);
- The deeper and faster integration of capital markets in the Eurozone, so that firms in all member states can have better access to sources of funding other than bank credit;
- The reform of the institutional policy framework in the Eurozone that will make it possible to implement certain economic and fiscal policy measures with a European orientation, so as to achieve European-wide policy goals.

It can be reasonably expected that the first two steps will be taken over the medium term, during the coming three years. Relevant preparatory work has been carried out and there is increasing understanding of the need and political will to move forward. The creation of the Banking Union is a major institutional reform of vital importance for the protection of financial and macroeconomic stability in the Eurozone. Yet, it remains incomplete because its third component, a single European Deposit Insurance Scheme, is still missing, while a common fiscal backstop to the Single Resolution Fund has not yet been fully implemented although pertinent proposals for completing the Banking Union have been discussed at official and

academic fora.[15] The underlying reason for those omissions and delays is that a fully-fledged banking union requires more cross-border risk sharing and a higher degree of fiscal integration in the Eurozone. The completion of the banking union should be a top priority in view of potential economic and financial crises in the future.

The reform of the institutional policy framework is especially important but also politically difficult. It will allow to make progress towards a better coordination of national fiscal policies and the establishment of some form of fiscal union in the Eurozone. Although this is in my view absolutely necessary for attaining the broader goals of EMU and for securing the long-term viability of the euro, taking that step is a great challenge because fiscal policy measures, which involve public spending and its financing, ultimately by the taxation of citizens, require decisions that are profoundly political. The creation of some form of fiscal union implies the transfer of national sovereignty regarding certain categories of public spending and their financing to a European body or institution, which will be responsible for taking the pertinent decisions.

Tackling the political challenges associated with the creation of a fiscal union and, more generally, the completion of EMU will require (i) coordinated policy actions on several fronts and (ii) the establishment of the appropriate conditions that will support such a fundamental change. Let me highlight three such conditions, indeed prerequisites for making progress towards a genuine and stronger EMU:

- It is essential for citizens and governments to have a better understanding of the reasons and the need for establishing a form of fiscal union and of the benefits it will entail, so that there will be public support and democratic legitimacy for its creation. To that end, an effective – a clear and convincing – communications policy is absolutely necessary to explain the advantages of completing EMU and the costs of its potential break-up.
- It is also important that any European-wide policies and reforms are meaningful for its citizens and indispensable for tackling problems that cannot be resolved by policy measures taken at the national level.
- It is imperative to give priority to European-wide policy actions that will strengthen growth, reduce unemployment and mitigate income inequality.

If such prerequisites are fulfilled and appropriate economic policies are implemented effectively, Euroskepticism and nationalism will decline and European integration will move forward.

What kind of policies and reforms would contribute to that end? Specific policies and reforms, which are both necessary and meet the above criteria include:

[15] Evaluations of the present state of the European Banking Union and proposals for its completion are provided in Lucas Papademos (ed), *Monetary Policy, Banking Union and Economic Growth: Challenges for Europe in the Wake of the Crisis,* Bank of Greece and Academy of Athens, 2017.
Available at https://www.bankofgreece.gr/Publications/Challenges_for_Europe.pdf

- the setting up of a macroeconomic stabilization mechanism in the Eurozone and, in particular, of a European system of unemployment insurance, which would help reduce the distributional effects of major asymmetric shocks;
- the further strengthening of the Juncker program for investments in physical and human capital, by increasing the available resources, and by broadening the sources of financing investment and the range of eligible activities, so as to meet European-wide objectives;
- the establishment of a European Monetary Fund;
- the issuance of Eurobonds for financing pan-European investment projects, common public goods or a designated part of public debt of Eurozone member states.
- the creation of a Eurozone budget

More generally, a more integrated economic and fiscal policy in the Eurozone and the EU is becoming progressively vital for the attainment of broader shared objectives in other areas, notably in defence and security, in managing migration-related issues and in establishing appropriate conditions to make the EU a world leader in the new knowledge economy and the ongoing fourth industrial revolution, which is driven by technology and innovation and is currently dominated by products developed and produced in the U.S. and China.

The geopolitical risks threatening Europe, the evolving position of the U.S. with regard to the responsibilities of European countries in NATO, the terrorist attacks and other security threats have underscored the importance and the need to strengthen defence and security arrangements in the EU on the basis of a closer and structured cooperation of member states, with specific activities and the ultimate goal being the establishment of a European Defence Union over the coming decade. A common defence policy, which will include a common intervention force, will presumably have to be supported to some extent by a common budget for financing part of the defence expenditure of member states participating in the European Defence Union.

The prospects for establishing a common defence policy are increasingly favourable and some important concrete steps have been taken since 2017 in this respect. It is remarkable that, according to recent surveys, the citizens in almost all EU countries include defence and security in their top 3 priorities and 3/4 of European citizens approve the principle of a common defence and security policy among EU member states.[16]

Moreover, migration-related challenges and the likelihood of massive flows of migrants and asylum seekers in the future underscore the need for a more effective and coordinated control of the external borders of the Union and a strengthening of programs of receiving and integrating the migrants, which would have to be addressed in a common framework and be

[16] See European Commission, *Standard Eurobarometer 91: Public Opinion in the European Union,* June 2019, Brussels. Available at https://ec.europa.eu/commfrontoffice/publicopinion/index.cfm/survey/getsurveydetail/instruments/standard/surveyky/2253

financed from common resources, since the countries of first entry and final reception cannot deal with the associated financial burden without help.

A conclusion that emerges from the above is that the creation of a genuine EMU and, more generally, the completion of the European project, will serve the national interest and can be expected to entail significant benefits for Greece by promoting growth, by contributing to social welfare and cohesion and by strengthening national security. Hence, Greece should support the establishment of a genuine EMU and should endeavour to play a leading role in the European integration process.

However, in order to contribute to the attainment of these goals and thus reap the benefits from a more complete and balanced EMU, Greece will have to continue on the path of economic recovery and reform, secure fiscal sustainability, strengthen its financial system, and improve its international competitiveness. In this way, it will also respond in practice to the view emphasized by many in the debate about the future of the euro, that it is essential for the success of the European project that the unity and solidarity it entails should be combined with the conduct of a responsible and effective economic policy at the national level.

5. Concluding Remarks

In conclusion, let me make a few final points of a more general nature regarding the outlook for Greece and the euro. There is no doubt that both Greece and the Eurozone are at crossroads and that the prospects are surrounded by considerable uncertainty and are subject to several risks, mainly – but not exclusively – associated with future political developments.

In Greece the implementation of an appropriate growth strategy and a reform agenda will succeed in achieving strong and sustainable growth if, in addition to the economic policy actions previously mentioned, we reach a broad political and social consensus on the primary objectives and the appropriate policy framework for making the Greek economy globally competitive. This in turn requires that we develop social values and public institutions that will support the introduction of fundamental reforms to improve the country's competitiveness and growth performance. Hence, it is essential for achieving strong, sustained and equitable growth that we focus not only on the features of the necessary reforms and economic policies, but also on creating the social, political and institutional environment required for their effective implementation. It has not been possible to create such an environment over the last ten years. Looking ahead, I am hopeful that we will learn from experience, overcome obstacles and master the will to achieve what has proved impossible in the past.

With regard to the future of the euro, it can be expected that the road leading to the creation of a genuine EMU is likely to be long and may be bumpy primarily because the conduct of a common economic policy and the establishment of some form of a fiscal union in the Eurozone will involve decisions that are essentially political. Consequently, the completion of

EMU requires strengthening the political foundations of the single European currency. At the same time, historical evidence since the introduction of the euro twenty years ago shows that, on the whole, remarkable progress has been made in completing and reinforcing EMU, although slowly, step by step, and often under the pressure of extraordinary circumstances, e.g. emerging serious threats to the stability and viability of the euro. I will, therefore, conclude with an optimistic note. I am reasonably confident that despite the challenges being faced, the political difficulties will eventually be overcome and progress will be made towards a genuine and better EMU, because the majority of European citizens understand the importance and the advantages of a stronger and more integrated Europe. So, 20 years after its creation, the euro can look forward to an infinite number of birthdays ahead. The euro is forever. And this will be good for stability and prosperity in the Eurozone and the EU.

Postscript

Since this conference was held, the expectation that further progress would eventually be made towards the completion of EMU and a more integrated economic policy framework in the European Union has come true to some extent. In response to the public health and economic crises brought about by the coronavirus pandemic, in July 2020 the European leaders agreed unanimously on an ambitious economic and financial policy package, combining a recovery fund and the multi-annual EU budget for 2021-2027. This package, totalling an impressive €1,824 billion ($2,087 billion), is aimed at addressing the consequences of the pandemic, strengthening the long-term growth and resilience of the EU economies, and furthering the process of European integration. The agreement reached is a historic milestone because of the size, targets, content and modalities of the policy package. Of particular importance are the novel means of financing the recovery fund by the issuance of common debt and the way the raised funds will be spent.

Three features of the recovery fund, which amounts to €750 billion ($858 billion), are especially relevant in assessing its significance as a step towards a more integrated economic policy in the EU: first, the European Commission is authorized to borrow funds on behalf of the Union on the capital market; second, new EU-wide taxes will be introduced for the repayment of the common debt issued; and, third, a substantial amount, €390 billion ($446 billion), of the funds raised will be transferred to member states in the form of grants for expenditure and not as loans to be repaid.

Although the policy measures adopted, including notably the financing of the recovery fund, cannot be regarded as Europe's Hamiltonian moment or a quantum leap in fiscal integration, they will have significant practical implications for financial markets and the EU budget and may turn out to have momentous political consequences for European integration. In particular, they may serve as a catalyst for taking further steps towards the mutualization of member states' debt and the creation of a fiscal capacity in the Eurozone.[17] At present,

[17] A fuller assessment of the EU economic policy package and the recovery fund agreed in July 2020 and their implications for the completion of EMU and the process of European integration is provided in Lucas

however, it seems premature to reach a definite conclusion about the prospect of making progress in these areas. Nevertheless, the agreement on the recovery fund is an important milestone on the road to the completion of EMU. It is a pivotal moment in the process of European policy integration.

Papademos, "The Ambitious Economic Policy Package of the EU: Definitely a Historic Milestone, but Certainly Not a Hamiltonian Moment", *mimeo,* September 30, 2020.

Chapter 3. Greece Before and After the Euro: Macroeconomics, Politics and the Quest for Reforms

George Alogoskoufis

Abstract

This paper analyses developments in the Greek economy before and after the euro. The main thesis is that the imbalances that led to the crisis of the post-2010 period were building up during the previous three decades and that their root causes were not merely economic, but social, structural, institutional and political. The fiscal imbalances created in the 1980s were not adequately addressed by the convergence policies of the 1990s, while the long-standing problem of low international competitiveness was further exacerbated by the failure to promote the necessary structural reforms. Greece's accession to the euro area with major structural and fiscal imbalances and low and deteriorating international competitiveness, led to a steep rise in its external indebtedness. The lopsided adjustment and the inadequacy of the reforms was due to domestic political and social constraints, both before and after euro area entry. In view of the institutional weaknesses of the euro area itself, the external imbalances ultimately led to the external debt crisis of 2010, the imposition of the economic adjustment programs and the 'great depression' of the 2010s. The paper also explores the prerequisites for a sustained recovery of the Greek economy within the euro area, once the global economic crisis induced by the coronavirus pandemic is over. The quest for wide ranging reforms remains Greece's top priority.

JEL Classification: E6, F45, F6

Keywords: Greece, euro area, fiscal policy, monetary policy, competitiveness, debt crisis

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1. Introduction

The year 2021 marks the 40th anniversary of Greece's accession to the European Union (then the European Economic Community) and the 20th anniversary of its accession to the euro area.

In 2010, just a decade after joining the euro area, the Greek economy faced its most serious peacetime economic crisis, which in turn led to the 'Great Depression' of the 2010-2016 period.

This paper analyses the underlying macroeconomic imbalances and structural weaknesses that led the Greek economy to this severe crisis both before and after euro area participation. It also aims to explore the potential of the Greek economy to recover while remaining in the euro area, once the new global economic crisis due to the coronavirus pandemic is over.

The main thesis of this paper is that the crisis of 2010 period was building up for at least three decades and that its root causes were not merely economic, but social, structural, institutional and political.

Greece's accession to the European Union in 1981 was followed by twenty years of stagflation, destabilisation and ineffective economic adjustment. The fiscal imbalances created in the 1980s and the perennial structural weaknesses of the economy were not adequately addressed by the convergence policy of the 1990s, which was mainly based on a restrictive monetary policy. In addition, the problem of low international competitiveness of the Greek economy was exacerbated by the weaknesses of the adjustment efforts.

Greece's accession to the euro area in 2001, with significant structural and fiscal imbalances and low and deteriorating international competitiveness, led to the gradual destabilisation of its external position. This took the form of large and persistent current account deficits and a steep rise in external indebtedness.

The imbalances became worse during the international financial crisis and the 'great recession' of 2007-2009. Combined with the institutional weaknesses of the euro area, they ultimately led to the 2010 external debt crisis and the imposition of the painful economic adjustment programs.

Unfortunately, the adjustment programs of the decade after the crisis of 2010 were limited to the surface of the problems faced by Greece. They did not succeed in addressing the underlying structural, social, institutional and political causes of many of the imbalances and weaknesses of the Greek economy and the euro area itself. Moreover, due to their exclusive reliance on austerity, they contributed decisively to the deepest and longest recession of the Greek economy, the 'great depression' of 2010-2016.

The recovery of the Greek economy after 2017 had been weak and in no way sufficient to compensate for the large output losses of the long depression period. Even worse, while the Greek economy seemed to have entered a mild economic recovery, in 2020 a new major international crisis broke out, due to the coronavirus pandemic (Covid-19). This crisis, which is still developing at the time of writing, poses major new challenges for the Greek economy and the euro area, which are addressed at the end of the paper.

2. The Crisis of 2010 and the 'Great Depression' of the Greek Economy

The 'sudden stop' in international lending and the crisis of 2010 were anything but 'sudden' for Greece. They took place in the aftermath of the international financial crisis of 2007-09, but they were mainly due to the persistent and large macroeconomic and structural imbalances of the Greek economy. These imbalances had accumulated during the three decades preceding the crisis, due to the inability of Greek policy makers to adopt effective policies and reforms for their timely and effective correction.

Macroeconomic imbalances became even more pronounced after Greece's accession to the euro area, due to the constraints and weaknesses of the euro area itself. Before the crisis, they manifested themselves mainly as a problem of large persistent current account deficits, and, after the international financial crisis of 2007-2009, as a 'sudden stop' of external lending to Greece.

The crisis could have happened earlier, postponed, or even avoided in this form and to this extent. However, the structural and macroeconomic adjustment of the Greek economy was an undeniable necessity, which should have been addressed before Greece joined the euro area and lose access to the very important and useful tools of monetary and exchange rate policy.

After entry to the euro area, Greece faced a stark policy dilemma. Because of its low international competitiveness, attempts to address the external imbalances through a restrictive fiscal policy, would lead to recession. Attempts to avoid a fiscally induced recession, led to the persistence of external imbalances. Greece, like other economies in the periphery of the euro area, was caught up in a *Mundellian trap*.[18]

The Apparent Causes of the Crisis

The structural weaknesses of the Greek economy, the contradictions of the economic policy adopted by successive Greek governments after the country's accession to the European Union in 1981, and the institutional deterioration that occurred after 1981, under the pressure of the social and political dynamics that emerged after the restoration of democracy in 1974, were among the key factors that helped destabilise the Greek economy and create the conditions that ultimately led to the 2010 crisis.

Undoubtedly, however, and despite the fact that the imbalances and structural weaknesses of the Greek economy and Greek political and administrative institutions played the leading role, the Greek crisis was exacerbated by the significant structural and institutional weaknesses of the euro area itself. The euro area is far from being an 'optimal currency area'

[18] I call this situation a *Mundellian trap* as it essentially the conflict between internal and external balance, first analysed by Mundell (1963). In a small open economy with low international competitiveness, a fixed exchange rate under full capital mobility implies the ineffectiveness of monetary policy. Aggregate demand can be affected only by fiscal policy, but its use results in a conflict between output and employment and the current account. The trap is starker for a small open economy which participates in a monetary union, because in a monetary union an economy does not have access to the safety valve of a one-off devaluation, that could be employed in a fixed exchange rate regime with adjustable central parities.

and it is no wonder that it proved particularly vulnerable after the international financial crisis peaked in September 2008.

The 'Great Depression' of the Greek Economy

With the outbreak of the Greek crisis in early 2010, the euro area authorities hastily put together an inter-governmental lending program to 'rescue' the Greek economy, through official borrowing from the other economies of the European Union. Greece was forced to adopt the first of a series of front-loaded macroeconomic adjustment programs designed by the so-called 'troika' of the International Monetary Fund (IMF), the European Commission (EU) and the European Central Bank (ECB).

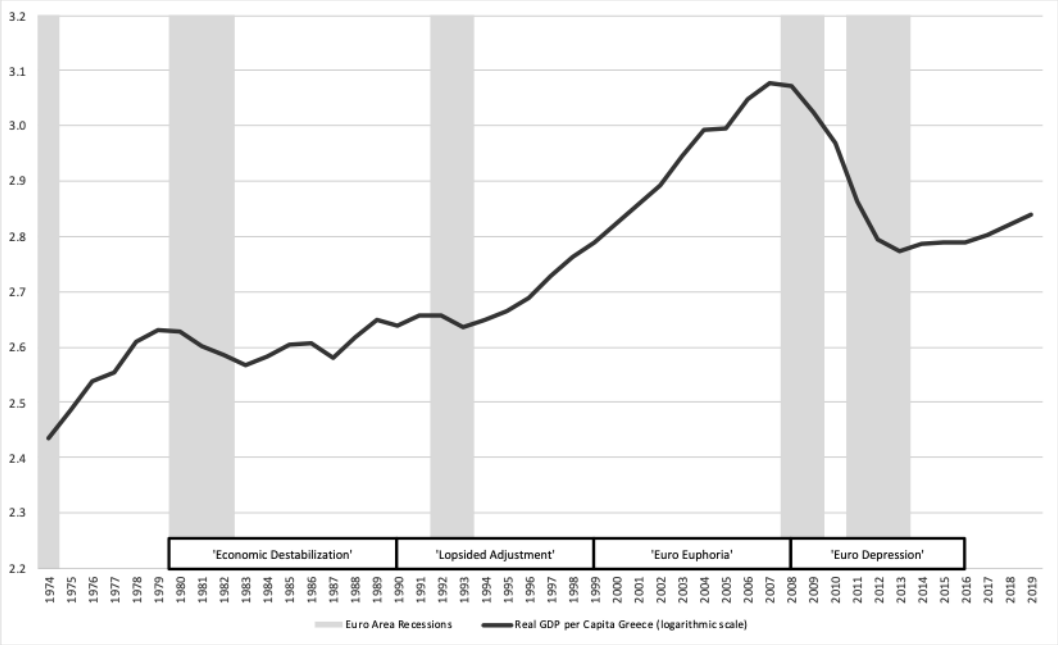
These programs, which were enshrined in three successive 'memoranda' between Greece and its euro area partners, gradually and partially addressed some of the more apparent external and fiscal imbalances of the Greek economy. However, due to the bad initial conditions and the weaknesses and contradictions of the programs themselves, they also led to an extremely deep and long economic depression. A 'great depression' of the Greek economy that had no precedent in peacetime.

As demonstrated in Figure 1, after a period of relatively high growth between 1994 and 2007, during the Great Depression of 2008-2016 Greece's real GDP per capita fell by almost a quarter. This was a much longer and deeper recession than in the rest of the euro area.

The unemployment rate, the evolution of which is depicted in Figure 2 quadrupled. It peaked at 27.9% of the workforce in July 2013, up from 7.3% in May 2008, and has since declined at an extremely slow pace.

Millions of Greeks faced the spectrum of poverty, as real wages and pensions in Greece were cut sharply, horizontally and at a significant percentage. Hundreds of thousands of educated and skilled Greeks, mainly the younger generation, immigrated to other EU countries or the rest of the world, as finding a suitable and well-paid job in Greece became very difficult, if not impossible. Greek society and the political system were shaken to their roots.

Figure 1. The Evolution of Real GDP per Capita in Greece, 1974-2019
(Thousand 2015 euros, logarithmic scale)



Source: EU Commission, AMECO Database (November 2020)

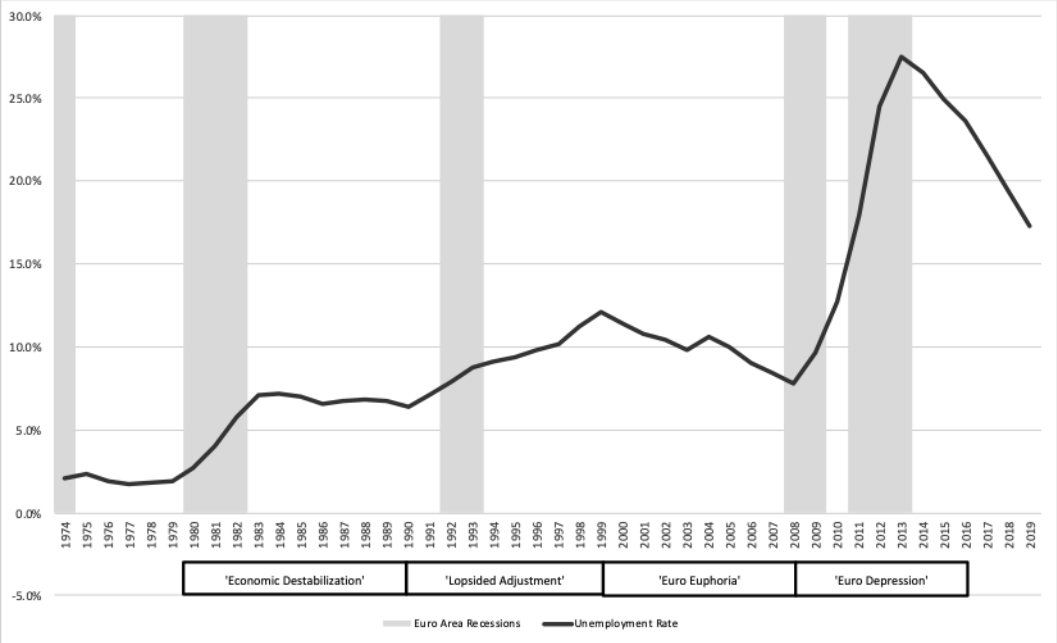
Yet, as we shall demonstrate in this paper, this was the low point of an economic tragedy that had been gradually evolving since at least the early 1980s.

Four Cycles of Destabilisation and Lopsided adjustment

In the sections that follow, we document that, on the basis of macroeconomic analysis and the available data, the crisis of 2010 was building up for at least three decades before its outbreak in 2010. We also argue that its root causes were not only economic, but also social, institutional and political.

The paper first traces the cycles of destabilisation and lopsided adjustment of the Greek economy since the restoration of democracy in 1974 and the country's accession to the European Union in 1981 and, subsequently, its entry into the euro area in 2001.

Figure 2. The Evolution of the Unemployment Rate in Greece, 1974-2019
(% of labor force)



Source: EU Commission, AMECO Database (November 2020).

It also documents that the adjustment programs of the decade after the outbreak of the 2010 crisis, focused on a one-sided 'austerity' policy that only addressed the surface of the country's external and fiscal imbalances, without tackling the structural, social, institutional and political roots of many from the weaknesses and imbalances of the Greek economy.

The Deeper Causes of the Crisis

Documenting and describing developments and problems is only an intermediate goal of the analysis of this paper. The ultimate goal is to highlight and analyse both the weaknesses and contradictions of the economic policies pursued in Greece after 1981, as well as the deeper structural, social, institutional and political causes of these weaknesses and contradictions.

For this reason the paper addresses both the macroeconomic imbalances and the structural, social, institutional and political characteristics of the cycles of the past 45 years. Based on the conclusions that emerge, we refer to the economic, institutional and political preconditions for a sustainable recovery of the Greek economy, without the weaknesses and regressions of the past.

The paper is based on the modern macroeconomic approach to the analysis economic growth, economic fluctuations and economic crises. The description and interpretation of

developments in Greece and the rest of the euro area is based on the officially available statistics published by the European Statistical Service (Eurostat).[19]

As the analysis is not limited to the economic dimension of the problems at hand, it adopts a new political economy approach into the less visible structural, social, institutional and political causes behind the developments and choices that led to the 2010 crisis and the 'great depression' in Greece.

For this reason, the structural weaknesses of the Greek economy, as well as the institutional weaknesses of the state and the political system, which, to a large extent, determined and limited the choices of economic policy, play a central role in the analysis that follows.

3. The Greek Economy after EU Accession

In the 30 years before Greece entered the EU, the real per capita output (GDP) of Greece rose almost fivefold, from €2.8 thousand constant euros of 2015 in 1950, to €13.8 thousand in 1980. The annual growth rate of real per capita output was 5.6%. In the subsequent 30 years, after Greece had become a member of the European Union, the real per capita income of Greece rose by only 1.4 times. From €13.8 thousand (constant euros of 2015) in 1980, to €19.5 thousand in 2010. The annual growth rate of real per capita output fell to 1.2%. This slowdown was much larger and abrupt than would have been expected on the basis of convergence to lower steady state growth. In the ten years since the international crisis of 2008, the real per capita income of Greece has displayed even worse trends because of the 'great depression'. In 2016, the last year of the 'great depression', it had fallen to €16.2 thousand, almost 25% lower than its peak level of 2007.

One can distinguish between four consecutive ten-year policy cycles after Greece's accession to the EU in 1981. These four cycles are marked clearly in Figure 1 and most of the figures that follow.

While the Greek economy recovered strongly following the first oil shock and the recession of 1974, following the second oil shock and accession to the EU, it entered a long period of stagflation and fiscal destabilisation. This was the first cycle of four cycles that have characterised the 40 years since EU accession. It was followed by a ten year cycle of lopsided adjustment, a cycle of 'euro euphoria' following euro area entry and, finally, the cycle of the 'euro depression'.[20]

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[19] Given the problems that have arisen with respect to the credibility of 'Greek statistics' in the past, it is imperative that any analysis of the Greek economy is based on data officially endorsed by Eurostat, the statistical arm of the European Commission.

[20] These cycles are briefly analysed below. For a more extensive analysis and discussion see Alogoskoufis (2019). The international literature on the Greek economy has grown exponentially since the sovereign debt crisis of 2010. See, among others, Krugman (2010), Featherstone (2011), Arghyrou and Tsoukalas (2011), Alogoskoufis (2012), Ardagna and Caselli (2014), Monastiriotis (2014), Galenianos (2015), Orphanides (2015), Ioannides and Pissarides (2015), Roukanas and Sklias (2016), Gourinchas et al. (2017), Meghir et al (2017), Alogoskoufis (2019), Christodoulakis (2019), Leounakis and Sakellaris (2019), Louri and Migiakis (2019), Economides et al (2020),

The first three cycles, despite their differences, made a critical contribution to the emergence of the conditions that led to the 'great depression' of the Greek economy, and to the economic, social, institutional and political problems and dilemmas that still characterise the Greek economy today.

Economic Destabilisation

The first cycle, a cycle of *economic destabilisation*, prevailed in the 1980s. It was characterised by an excessively expansionary mix of macroeconomic policy. The excessively expansionary fiscal, incomes, and monetary policies and the rise in the economic role of the state proved destabilising in the medium term but also ineffective in the short-term. This proved to be a period of stagflation, fiscal destabilisation and external imbalances.

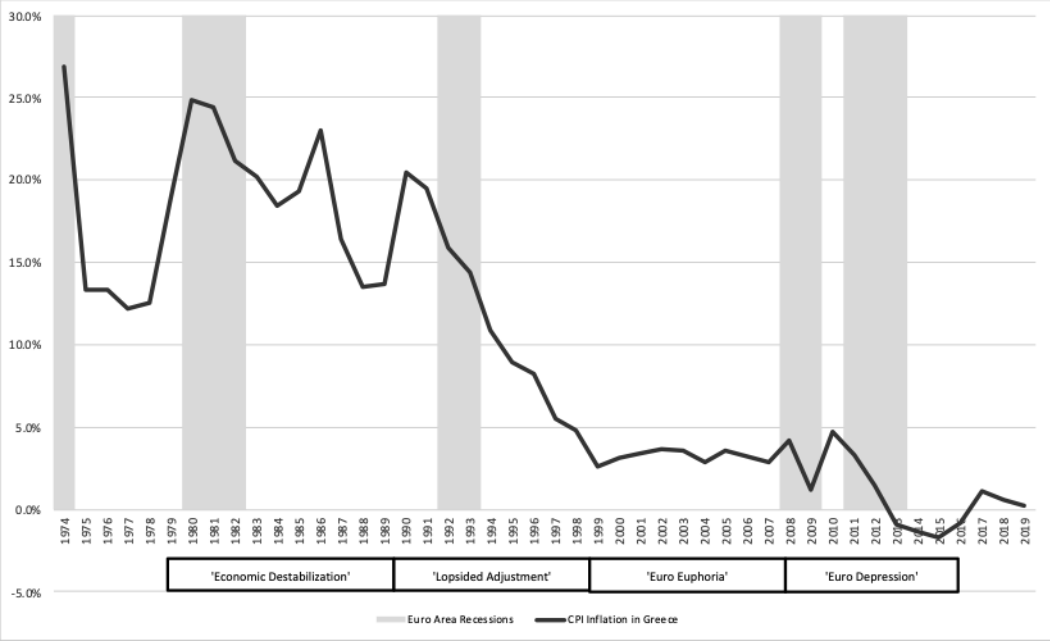
The end result was the further weakening of the already distorted and weak productive potential of the Greek economy, despite the excessive expansion of aggregate demand.

The evolution of inflation is depicted in Figure 3. Inflation rose significantly in the aftermath of the second oil shock of the 1970s and remained high throughout the1980s, due to the expansionary monetary and fiscal policy.

Immediately after accession to the EU in 1981, there was a major change of government, with the election of a PA.SO.K government under Andreas Papandreou. The negative effects of the second international oil crisis were still fresh. Yet, the new government adopted a policy mix of expansionary income, fiscal and monetary policies and an expansion of the economic role of the state. These choices initially led to a decade of fiscal and monetary instability, economic stagnation and high inflation, a mixture characteristic of stagflation. In addition, they led to a major deterioration in the international competitiveness of the Greek economy and periodic balance of payments crises. This cycle of economic destabilisation also resulted in a significant rise in the government debt to GDP ratio, unprecedented in peacetime until that period.

Andriopoulou et al (2020). Zettelmeyer et al. (2013) concentrated on the debt restructuring of 2012. Reinhart and Trebesch (2015) focused on a historical comparison of the 2010 crisis with previous Greek defaults since the 19th century.

Figure 3. The Evolution of Consumer Price Inflation in Greece, 1974-2019 (% per annum)



Source: EU Commission, AMECO Database (November 2020).

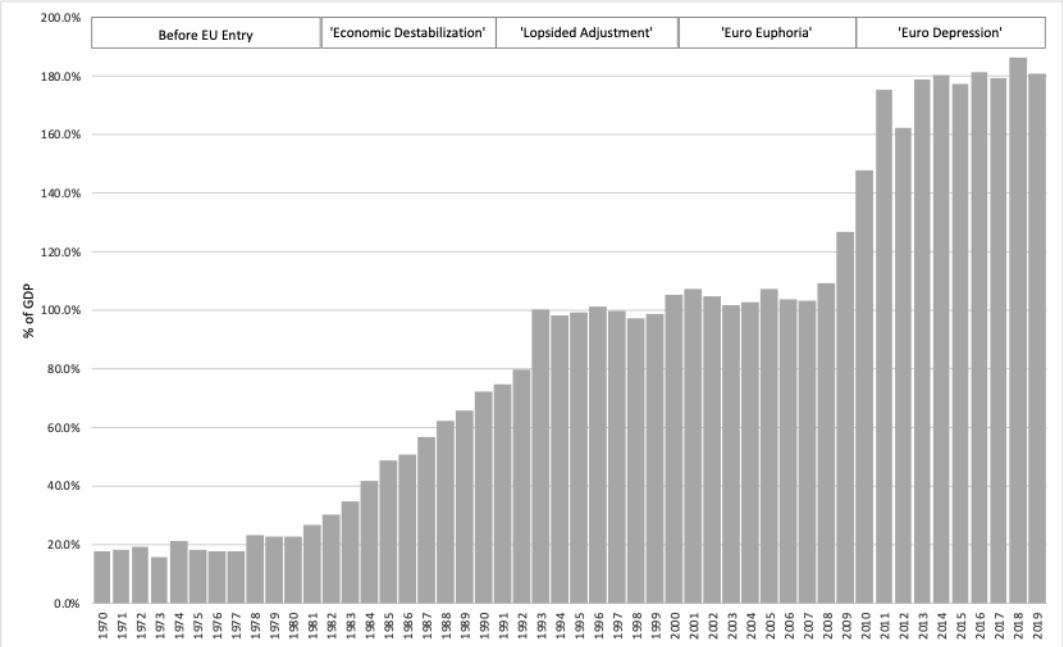
The rise in the government debt to GDP ratio in the 1980s, as well as its subsequent evolution, is depicted in Figure 4. The general government debt to GDP ratio grew rapidly throughout the 1980s, from 22.7% in 1980 to 72.5% in 1990.

The average annual GDP growth rate in the 1980s fell to a miserly 0.7%, the average unemployment rate more than tripled to 6.4%, whereas the average annual inflation rate jumped to 19.5%, from 12.3% in the 1970s, and only 4.3% in the 1950s and the 1960s (Figures 1,2 and 3). The current account moved from a surplus of 2% of GDP in 1980 to a deficit of 3.1% of GDP in 1985, prompting the adoption of a short-lived stabilisation program.

The stabilisation program of the mid-1980s was too little too late, as it was both one-sided and temporary. It was one-sided, in that it only concentrated on a devaluation and the containment of unit labor costs, but not fiscal adjustment. It was also short lived, as it was abandoned after two years in view of the forthcoming general election. A prolonged electoral cycle again destabilised the Greek economy in the late 1980s.

The OECD, in its periodic report on the Greek economy at the end of the 1980s, highlighted both the fiscal destabilisation and the reduction in international competitiveness that occurred.

Figure 4. The Evolution of Government Debt (% of GDP)



Source: EU Commission, AMECO Database (November 2020).

"Since the beginning of the 1980s there has been an unprecedented trend deterioration in the financial position of the public sector, witnessed by a rapid increase in borrowing requirements and debt." (OECD (1990), p. 39).

"Excessively-rising real wages in relation to low productivity growth, and the lack of motivation of workers, notably in the public sector, signal problems in the functioning of the Greek labour market. There are important aspects of the wage formation process that explain why real wage gains do not adequately reflect exogenous productivity developments either at the aggregate level or between different skills. Institutional features and labour legislation have combined to weaken the responsiveness of employment to labour demand changes." (OECD (1990), p. 62)

The main social and political feature of this cycle was the accommodating response of the government to the pervasive social demand for a redistribution of income and wealth in favor of social groups, such as wage and salary earners, pensioners, farmers, the self-employed and owners of small and medium-sized enterprises. These social groups felt that they had not participated fairly in the benefits of the country's post-war economic development in the twenty-five years before the restoration of democracy.

These social groups were won over by the idiosyncratic 'third way' to socialism promised by PA.SOK, a party which, after its election in 1981, dominated politically for the next thirty years.

In the 1980s, the 'third way' proved to be the way of higher state intervention and 'macroeconomic populism', similar to the policies that had been adopted in the 1970s in a number of Latin American countries.[21]

This cycle eventually led to a first serious economic and political crisis in the late 1980s, which threatened not only the Greek economy but even Greece's membership of the European Union.[22]

Lopsided Adjustment

The second cycle, a cycle *lopsided adjustment*, marked the nominal convergence policies of the 1990s. The cycle began after the election of a New Democracy government in 1990, but continued after the re-election of PA.SO.K at the end of 1993.

During the 1990s, successive governments, led by Constantine Mitsotakis, Andreas Papandreou and Costas Simitis, adopted nominal convergence and adjustment programs in order to address the accumulated imbalances of the previous decade and ensure Greece's participation in the process of economic and monetary union (EMU) which was adopted by the EU in the early 1990s.[23]

The nominal convergence policy of the 1990s, and the accession to the euro area in 2001, proved successful in addressing the problem of high inflation (see Figure 3), but not the other macroeconomic imbalances and structural deficiencies that plagued the Greek economy.

The adjustment of the Greek economy had been unbalanced and, for this reason, ineffective. It relied mainly on a restrictive monetary and exchange rate policy, with the result that the Greek economy joined the euro area without having faced at its core either the major fiscal problems that had arisen in the 1980s or the problem of low international competitiveness. In fact, the international competitiveness of the Greek economy worsened significantly during the convergence period.

Figure 5 depicts the real effective exchange rate (REER) of Greece, as measured by relative unit labor costs vis-a-vis the EU 15, expressed in a common currency. This is one of the most reliable measures of Greece's international competitiveness vis-a-vis its EU partners. A rise in the real effective exchange rate signifies a deterioration in international competitiveness. As shown in Figure 5, Greece's international competitiveness deteriorated by almost 25% between 1992 and 1999, the year on the basis of which Greece was admitted to the euro area. The deterioration relative to 1987, the final year of the short-lived stabilisation program of the 1980s, was even higher, at almost 33%.

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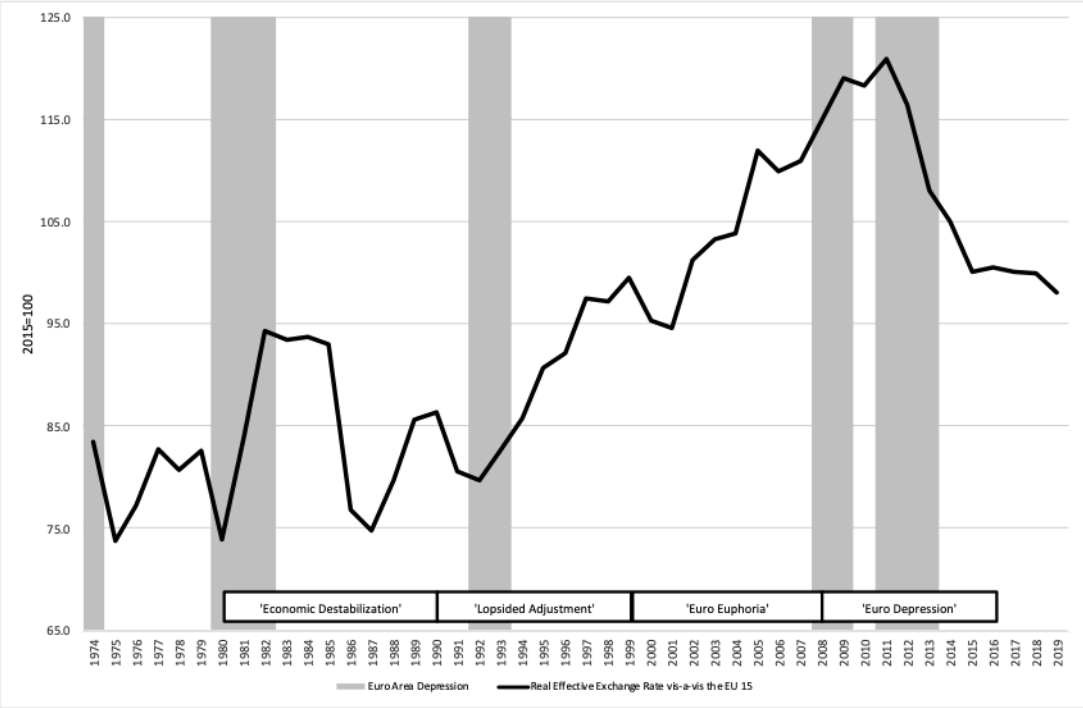
[21] The term macroeconomic populism was coined by Dornbusch and Edwards (1990). It is defined as an approach to economic policy that emphasizes the excessive expansion of aggregate demand and income redistribution, at the expense of high inflation, deficit financing, external imbalances and adverse reactions by investors. See also Dornbusch and Edwards (1991).

[22] For studies of the stagflation of the 1980s in Greece see Alogoskoufis and Christodoulakis (1991), Alogoskoufis and Philippopoulos (1992) and Alogoskoufis (1995).

[23] Alogoskoufis (1993) and Papademos (1993) focused on the ways that Greece could adjust effectively in order to participate in EMU, from the perspective of the early 1990s.

Figure 5. Real Effective Exchange Rate vis-a-vis the EU-15
(Relative Unit Labor Costs in a Common Currency)



Source: EU Commission, AMECO Database (November 2020).

Because of the policy mix of a relatively lax fiscal policy and a relatively tight monetary policy, the annual GDP growth rate picked up to an average of 3.3% in the second part of the 1990s. The annual inflation rate fell to an average of 6% because of the tightening of monetary and exchange rate policy, while the unemployment continued rising modestly as a result of relatively high real wage increases. The weak recovery was accompanied by an increase in the current account deficit to 5.1% of GDP in the second part of the decade from only 0.9% in the first part of the 1990s.

The government debt to GDP ratio rose in the early 1990s, as unrecorded debts from the 1980s were incorporated into the official debt figures, but was then stabilised. However, fiscal adjustment and the adoption of growth oriented structural reforms was quite slow and uneven.

At the level of political declarations, the main social and political feature of this cycle was supposed to be the promotion of macroeconomic adjustment and structural reforms. In practice, however, the structural and fiscal reforms that provoked strong social or political reactions were usually postponed or abandoned. Even organised minorities, such as powerful business groups or trade unions in the wider public sector, could stop useful economic reforms they were opposed to, such as privatisations, sometimes through direct interference in the political process.

Due to the reluctance of governments, especially after 1994, to bear the social and political costs of the required reforms, fiscal adjustment proved to be incomplete and unbalanced, structural reforms innocuous and ineffective, and thus the burden of adjustment fell mainly on monetary policy. This mix of policies was one of the main reasons for the deterioration of the international competitiveness of the Greek economy during this period.

The tendency for governments to postpone reforms that entail significant social and political costs or provoke strong reactions from politically strong organised minorities, as happened in Greece during this period, is one of the central conclusions of the new political economy approach. This is an approach that seeks to analyse the motives and behaviour of governments and their interaction with the motives and behaviour of the private sector and the electorate, as determined through political institutions.[24]

If the adoption of specific reforms provokes the reaction of a large part of the electorate or even organised minorities with a significant political weight, and if there are no appropriate institutional incentives and counterweights, then the political process results in the postponement, suspension or only partial adoption of such reforms. This can happen despite the fact that the reforms are potentially beneficial for society as a whole. This seems to have happened in Greece in the second part of the 1990s, whenever fiscal and structural reforms attempted by the government met with strong social and political reactions. Despite the fact that apparently almost everyone seemed to want Greece to join the euro area, few social groups appeared willing to support the necessary structural and fiscal reforms.

As a result, the weight of the adjustment fell mainly on monetary policy and falling inflationary expectations, because of the reduction of inflation. Structural reforms and adjustment in the primary fiscal balance took place mainly until 1994, due to the sense of urgency created by the economic and fiscal crisis of 1989-1990. However, the rapid deterioration and of the political fortunes of the Mitsotakis government, and its comprehensive defeat in the general election of 1993, became a 'lesson' for its successors. In the years after 1994, further primary fiscal adjustment and structural reforms that entailed significant political costs or provoked strong reactions from business interests or the trade unions, were suspended.

After 1994, the continuation of the reduction of the budget deficit was based almost exclusively on the gradual reduction of interest payments on government debt, as a result of the reduction of the nominal interest rates that took place due to the decline in inflation and inflationary expectations. The fall in inflation was the result of the restrictive monetary policy.

Monetary adjustment was not abandoned mainly due to the political independence of the Bank of Greece, which was strengthened after Greece adopted the Maastricht Treaty of 1992. The gradual reduction of inflation and inflationary expectations resulted in declining nominal interest rates, declining interest payments on government debt and hence declining budget deficits. Thus, the operation of the 'Fisher equation', which predicts that nominal interest

[24] The new political economy approach to monetary and fiscal policy dates from the mid-1980s. See Alesina (1988, 1989), Persson and Svenson (1989), Rogoff (1990), Tabellini and Alesina (1990), Fernadez and Rodrik (1991), Alesina and Drazen (1991). For a collection of the most fundamental initial studies see Persson and Tabellini (1994 a, b). For more recent reviews see Drazen (2000), Persson and Tabellini (2000) and Alesina and Passalacqua (2016).

rates fall in accordance with inflationary expectations, was a significant reason behind Greece's accession to the euro area.[25]

Part of the reduction in recorded fiscal deficits was also based on the use of 'creative accounting', which was considered at the time to result in minimal short term political or social costs. There was almost no primary fiscal adjustment between 1994 and 1999. In fact, the primary surplus that had been created between 1990 and 1994 actually declined.

The evolution of the general and primary balance of the government is depicted in Figure 6.

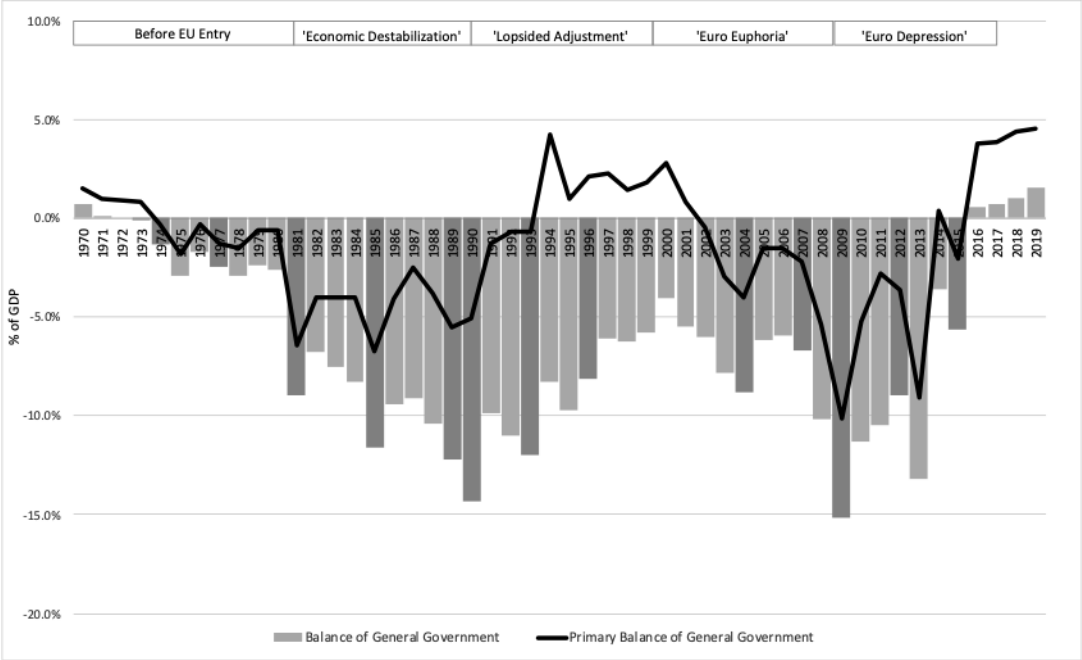
Until Greece's accession to the EU, deficits of the general government seemed to have been under control. However, in the 1980s they reached unprecedented levels for peacetime. As can be seen from Figure 6, the fiscal imbalances rose significant throughout the 1980s, but mainly during the election years of 1981, 1985 and 1989-90 (marked in a darker shade). These electoral spikes in the fiscal deficit, which started in 1981, have since characterised Greek fiscal policy.[26]

Fiscal adjustment in the 1990s resulted in a fall of the deficit of the general government from 14.3% of GDP in electoral 1990 to 5.8% of GDP in 1999. This decrease was due to both a significant reduction in the primary deficit of the general government, which occurred chiefly in the first part of the 1990s, and a fall of interest payments on general government debt, as nominal interest rates fell towards the end of the 1990s, following the reduction in inflation.

[25] For the Fisher equation see Fisher (1911, 1930). Fisher was the first economist who highlighted the one-to-one relation between inflation, inflationary expectations and nominal interest rates.

[26] See Alogoskoufis (1995, 2013) and Lockwood et al (2001) for economic and econometric investigations of this electoral cycle in budget deficits in Greece.

Figure 6. Total and Primary Balance of the General Government in Greece (% of GDP)



Source: EU Commission, AMECO Database (November 2020).

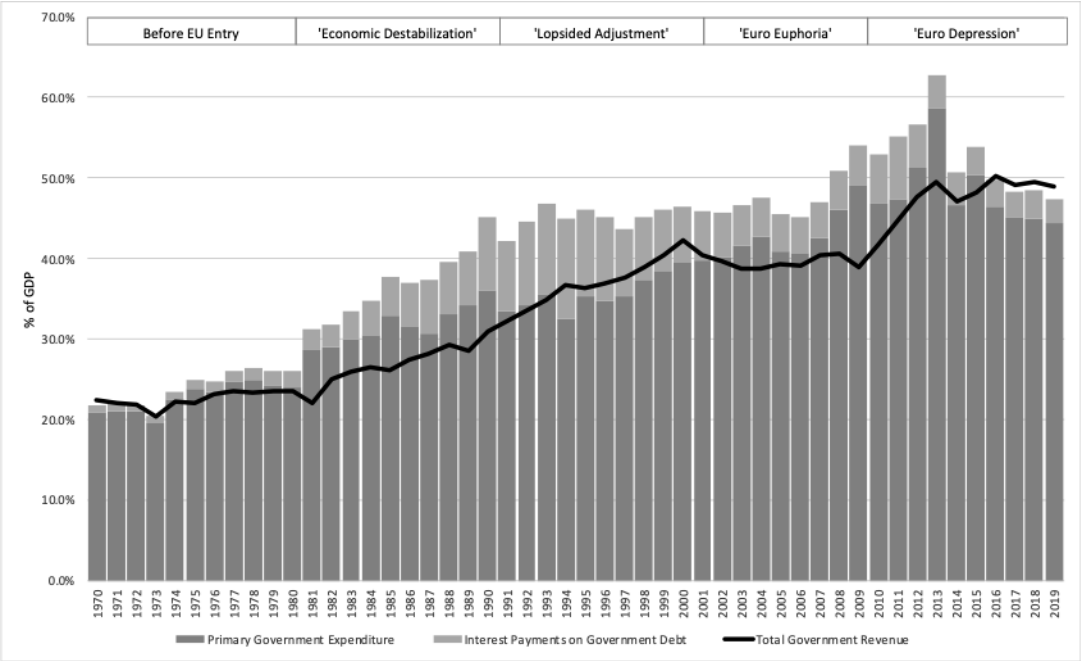
In 1990, the primary deficit, i.e., the deficit excluding interest payments, stood at 5.1% of GDP. This deficit declined rapidly in the 1990-94 period, the first part of the decade. By 1994 it had already been transformed into a primary surplus of 4.2% of GDP, marking an improvement of more than 9 percentage points of GDP. More than three fifths of this improvement in the first part of the decade was due to the increase in general government revenues, from 30.9% of GDP in 1990 to 36.7% in 1994. The remainder, slightly less than two fifths, was due to a reduction in primary expenditure of the general government, from 36.0% of GDP in 1990 to 32.5% in 1994. Figure 7 depicts the evolution of government expenditure and revenue relative to GDP.

Further adjustment of the primary balance stopped after 1994. As a result, the primary balance gradually deteriorated again. In 1999, the primary surplus had declined to only 1.8% of GDP, as primary expenditure had crept back up to 38.6% percent of GDP, higher than at the start of the decade. Thus, for the decade as a whole, the adjustment of the primary deficit was only equal to 6.8 percentage points of GDP, all of it due to increases in government revenue, which rose by almost ten percentage points of GDP.

How did Greece then manage to satisfy the fiscal criteria that were set out in the Maastricht Treaty? To the extent that it did satisfy these criteria, this was due to the additional contribution made by the reduction of nominal interest rates in the second part of the decade. This, as we have already mentioned, was a result of the fall of inflation and

inflationary expectations and the fall of the inflation and devaluation premium on interest rates, as euro area entry was approaching.[27]

Figure 7. Expenditure and Revenue of the General Government in Greece (% of GDP)



Source: EU Commission, AMECO Database (November 2020).

High inflationary expectations and expectations of a devaluation had kept nominal interest rates on Greek government debt high since the beginnings of the financial liberalisation of the economy in the late 1980s. These expectations were reversed towards the end of the 1990s. As a result, interest payments on Greek government debt fell from 9.2% of GDP in 1990, to 7.6% in 1999, after having risen to a high of 12.5% of GDP in 1994, in the aftermath of the crisis in the European Monetary System. This reduction of nominal interest rates contributed significantly to the reduction of the deficit of the general government in the second half of the 1990s, and allowed for the deficit of the general government to decline, despite the lack of adjustment of the primary deficit.

This policy mix, of a relatively expansionary fiscal and incomes policy and a relatively restrictive monetary policy was one of the main reasons for the significant deterioration in international competitiveness depicted in Figure 5.

As the reduction of price inflation preceded the reduction of wage inflation, the international competitiveness of the Greek economy was deteriorating constantly. In addition, there were very few structural reforms to help improve labor productivity.

[27] Revised data by Eurostat show that the deficit of the general government in 1999 stood at 5.8% of GDP well above the 3.0% envisaged in the Maastricht Treaty.

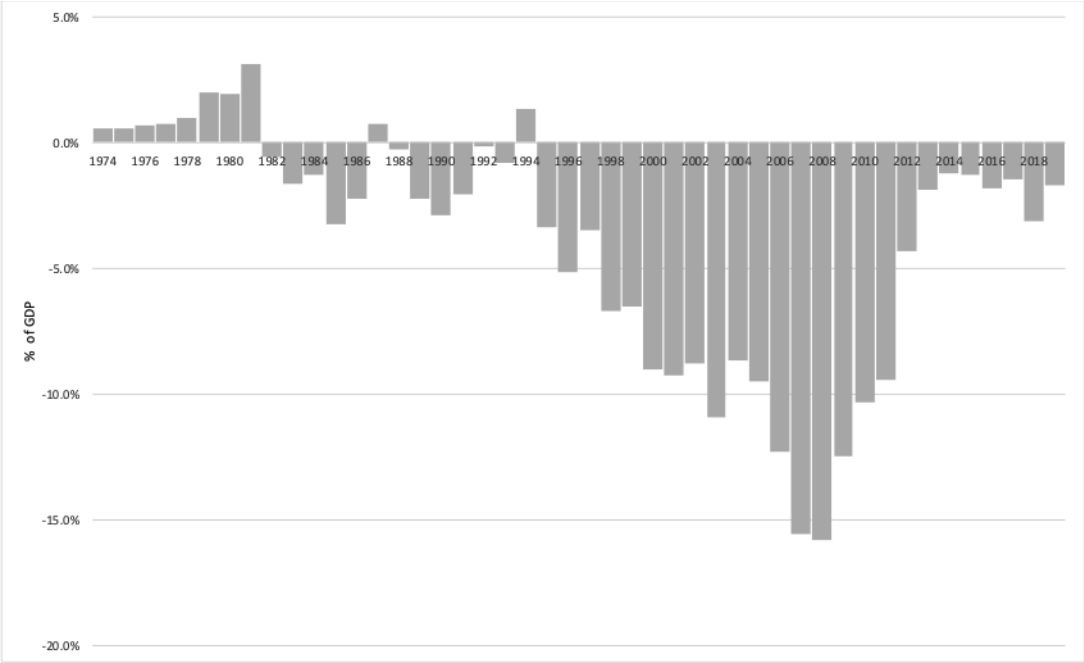
Greece managed to join the euro area at the end of this cycle, on the basis of the fiscal and inflation data presented at the time, but the fiscal problems remained significant, while the problems of international competitiveness had worsened.

Euro euphoria

The third cycle, the cycle of euro euphoria, began at the beginning of the new millennium, immediately after the confirmation of Greece's accession to the euro area. Economically, this cycle was characterised by an environment of low inflation and low nominal and real interest rates, but also a further easing of fiscal and incomes policy. This relaxation started as early as the year 2000, immediately after the EU Council decision approving Greece's accession to the euro area.

The basis for the euro euphoria was the large and rapid decline in real interest rates, once expectations of a sudden devaluation of the currency were eliminated. This period of low real interest rates caused an increase in both aggregate investment and consumption.

Figure 8. The Evolution of the Current Account of the Balance of Payments (% of GDP)



Source: EU Commission, AMECO Database (November 2020).

The widening gap between aggregate investment and savings triggered an increase in aggregate demand and economic growth, but, on the other hand, led to a large and continuous widening of the current account deficit. Note that the current account is by definition the difference between aggregate national savings and aggregate domestic

investment. The rise in investment and the decline in savings caused by the lower real interest rates led by definition to a worsening of the current account.[28]

The evolution of the current account of the balance of payments in Greece is depicted in Figure 8. While Greece experienced current account surpluses in the latter part of the 1970s, in the 1980s the current account moved into deficit. The short-lived stabilisation program of 1986-1987 helped reverse this trend, but the current account started worsening again from the second half of the 1990s. As Greece's accession to the euro area was becoming more of a certainty, and nominal and real interest rates declined the current account kept worsening. This process was obviously affected by the deteriorating international competitiveness and the strong recovery of GDP growth. During the period of euphoria following euro area entry, the current account deficit increased even further. The international recession of 2007-2009 caused an additional increase of the current account deficit, due to the decline in Greece's revenue from exports and tourism. It was only after the crisis of 2010 and the adoption of the first adjustment program that these trends were reversed.

The deterioration of the current account was facilitated by the explosive rise of bank lending to the private sector. Because of the fall in nominal and real interest rates and the liberalisation of financial markets, demand for loans by the private sector boomed. Greek banks were happy to extend new loans, borrowing themselves cheaply from the rest of the world. When collateral was needed, they provided government bonds, of which they had significant holdings in their portfolios.

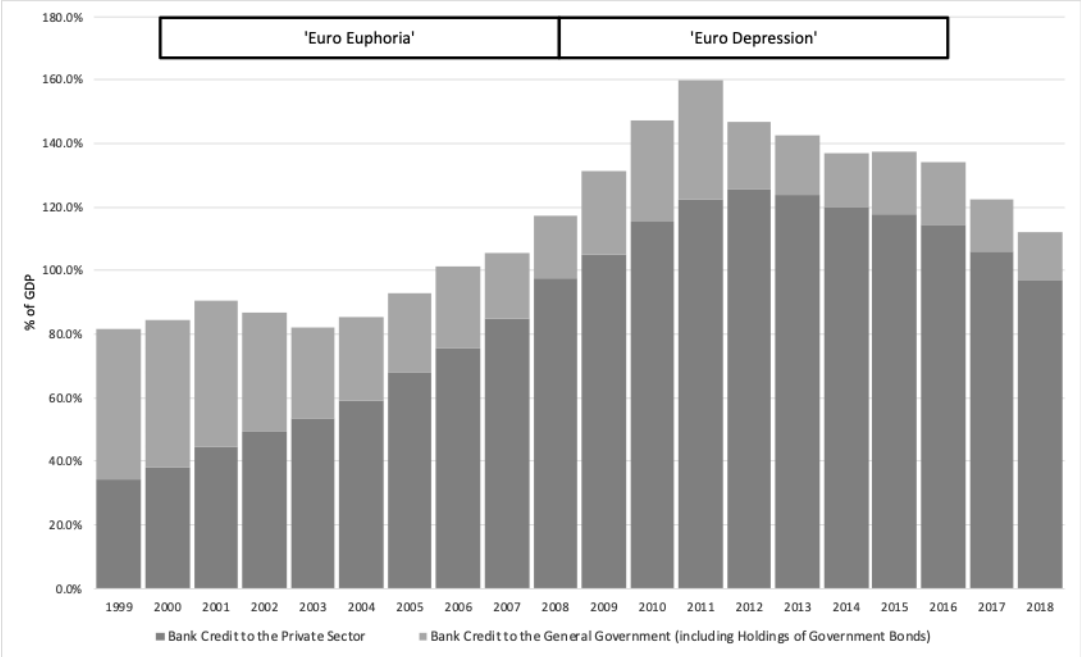
Bank lending as a percentage of GDP is depicted in Figure 9. Total bank credit grew from 81.5% of GDP in 1999 to 131.3% of GDP in 2009. For about ten years it was growing 1.6 times faster than GDP. Total bank credit to the private sector increased at a rate 3 times higher than nominal GDP. It exploded from 34.2% of GDP in 1999 to 105.1% of GDP in 2009. At the same time, bank credit to the general government, i.e, government bonds held by banks and other loans to the general government, fell from 47.2% of GDP in 1999 to 26.2% of GDP in 2009.

The fall in real interest rates, coupled with the liberalization of the domestic financial system, led to a real boom in private sector borrowing. Household loans for house purchases rose fivefold as a percentage of GDP, from 6% in 1999 to 33.1% in 2009. Consumer loans to households also rose fivefold relative to GDP, from 2.8% in 1999 to 15.3% in 2009. Total loans to households rose from 8.8% of GDP in 1999 to 49.7% of GDP in 2009. Total loans to enterprises more than doubled in relation to GDP, from 25.4% in 1999 to 55.4% in 2009.

[28] This cycle of euro euphoria is analysed in more detail in Alogoskoufis (2019).

It is obvious from the evolution of bank credit that Greek financial institutions were using the Greek government bonds in their portfolios as collateral, in order to obtain liquidity from foreign financial institutions, and thus extend additional credit to the domestic private sector. This helped to sustain the rise in the current account deficit, as it facilitated and financed the

Figure 9. Bank Credit to the Private Sector and the General Government (% of GDP)



Source: Bank of Greece (November 2020).

excess of private sector investment over savings. It also resulted in the internationalisation of Greek government debt, making Greece particularly vulnerable when the international financial crisis deteriorated in 2008.

In these circumstances, the Mundellian dilemma between internal and external balanced played a central role in macroeconomic developments. The only remaining instrument for short-term macroeconomic stabilisation was fiscal policy. In conditions of relatively high unemployment and an external deficit, an expansionary fiscal policy could reduce unemployment only at the expense of a further widening current account deficit. On the other hand, a more restrictive fiscal policy could reduce the current account deficit, but at the probable expense of a recession and higher unemployment. The option of devaluation, which could help address such a dilemma without creating a recession, had been forfeited by the decision to adopt the single currency. Greece had lost, through its participation in the euro area, the tool of correcting international competitiveness through a devaluation of its currency, and could no longer face the major problem of the current account deficit without engineering a recession.

This Mundellian dilemma was crucial for the political choices in the first decade after euro area entry, especially as the initial adoption of the euro at an uncompetitive exchange rate meant that Greece had locked in a very low level of international competitiveness which was feeding the external imbalances.

In fact, the Mundellian dilemma operated even before Greece entered the euro area. In the latter part of the 1990s, the Simitis government chose to not use a more restrictive fiscal and incomes policy to address the growing external imbalances, as this would probably lead to a recession, with the corresponding social and political costs. It did not proceed to the necessary devaluation of the exchange rate of the drachma either, as this would result in a rise in inflation, which, although temporary, would possibly lead to a postponement of Greece's accession to the euro area. Thus, the government continued to rely solely on the restrictive monetary and exchange rate policy that was proving effective in reducing inflation. A small devaluation that took place in early 1998, in advance of the introduction of the drachma to the Exchange Rate Mechanism of the European Monetary System, was clearly insufficient in correcting Greece's international competitiveness, and was in any case quickly reversed, as the further reduction of inflation had become the overriding short-term priority.

The endemic political tendency to postpone or suspend necessary but painful reforms was reinforced by the economic euphoria created by entry to the euro area. The second Simitis government, elected by a narrow majority in March 2000, chose to suspend any further reform and adjustment efforts immediately after Greece joined the euro area. Instead, it set out to further boost economic euphoria through the expansion of aggregate demand. It adopted an expansionary fiscal and incomes policy, which, while increasing aggregate demand and economic growth, exacerbated the existing fiscal problems and further aggravated the already low international competitiveness. Instead of intensifying structural reforms and fiscal adjustment to make up for the lost ground, the second Simitis government re-introduced some of the practices of the 1980s, such as an expansionary fiscal policy and real wage increases in excess of improvements in labor productivity.

The New Democracy government of Costas Karamanlis, elected in 2004, proceeded to a fiscal audit, in cooperation with Eurostat, which revealed much larger deficits than previously recorded. On the basis of these findings, it subsequently adopted a fiscal adjustment program at the end of 2004, as part of the euro area's excessive deficit procedure. This program of gradual fiscal and structural adjustment applied until the middle of 2007, when Greece exited the excessive deficit procedure.

Following the elections of September 2007, which were called early in order to continue with the process of fiscal adjustment, both the international economy and domestic politics took a turn for the worse. The developing international financial crisis and the weak parliamentary majority of the second Karamanlis government led to an abandonment of further fiscal adjustment during 2018. In the meantime, the fiscal and external deficits were widening, due to the onset of the international recession of 2007-2009.

The culmination of the international financial crisis and recession of 2007-09 and the stalemate over the re-election of the President of the Republic, led to new early elections in

October 2009, in the middle of the second term of the Karamanlis government. This became necessary due to the a priori refusal of the PA.SO.K opposition, led by George Papandreou, to contribute to the re-election of the President of the Republic, without new parliamentary elections.[29]

In the elections of October 2009 Karamanlis campaigned on the need for a new austerity program, but Papandreou won in a landslide, having campaigned on the basis of a populist agenda.

After the elections, the reluctance of the new Papandreou government to address the growing fiscal and external imbalances, which he in fact was quick to blame on the policies of his predecessor, led to a crisis of confidence and the 'sudden stop' of international borrowing to Greece in the first quarter of 2010.

The crisis of confidence was initially reflected in the sharp rise of the spread of Greek Government bonds. Figure 10 depicts the yield of the 10 year Greek bond and that of the German Bund of the same duration. Their difference is the so-called *spread*, reflecting differences in their default risk.

The spread, which had remained extremely small since Greece entered the euro area, had started widening since the first stages of the US subprime crisis in mid-2007. It widened further in late 2008, following the default of Lehman Brothers.

After the elections of October 2009, and especially after the budget of the new Papandreou government the spread exploded, signifying a rapidly developing crisis of confidence and the unwillingness of investors to keep holding Greek bonds. This led to the 'sudden stop' of international lending to Greece by March 2010.

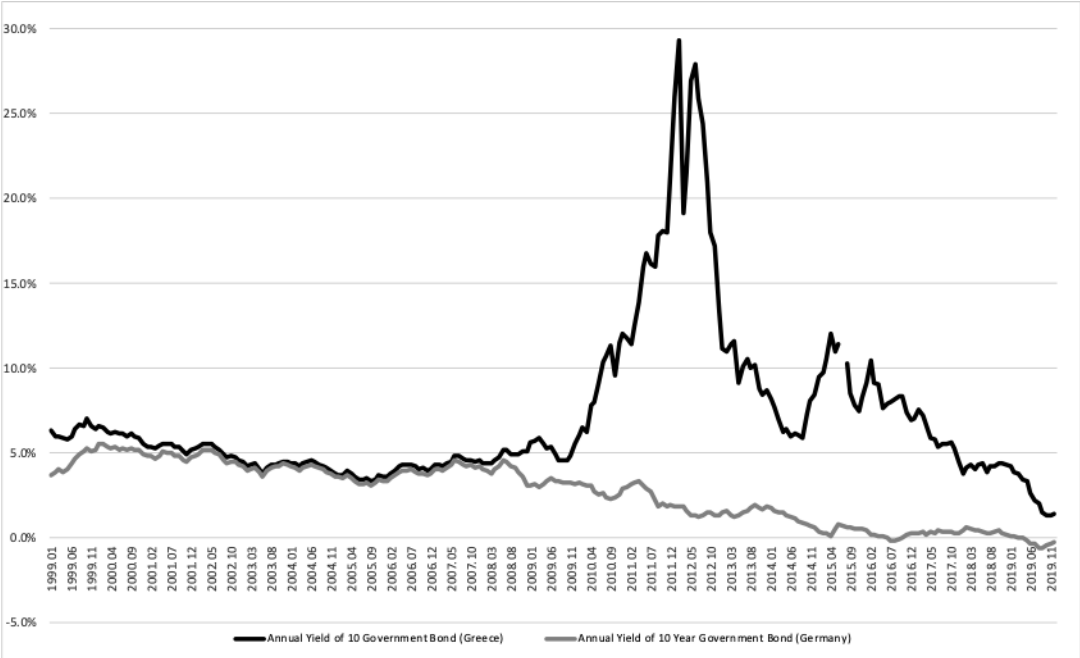
Euro depression

The policy reversal imposed on Greece since 2010, after the 'sudden stop' in international lending, was the trigger of the fourth policy cycle, which can be considered as the cycle of the euro depression.

This last cycle essentially bypassed and short-circuited the domestic political process, as the main decisions were made by the authorities of the euro area, whose member-countries had undertaken to refinance a large part of Greece's foreign debt. After 2010, the role of Greek

[29] It is ironic that the then President of the Republic was a prominent former minister of the PA.SO.K governments of Andreas Papandreou, Karolos Papoulias. Yet, George Papandreou declared that his party would not vote for him, unless parliamentary elections were called first. In the event, Papoulias was re-elected to the Presidency after George Papandreou won the parliamentary elections of October 2009.

Figure 10. Yield of 10 Year Government Bond in Greece and Germany (% per annum)



Source: OECD Data Bank (November 2020).

governments was limited to the implementation of the adjustment programs designed by a 'troika', consisting of representatives of the the International Monetary Fund (IMF), the European Commission (EU) and the European Central Bank (ECB).

In order to address the external imbalances, successive rounds of steep fiscal adjustment and nominal and real wage cuts were put in place. Due to the nature of these adjustment programs, based on indiscriminate tax hikes and horizontal wage, pension and other public expenditure cuts, this cycle caused the longest and deepest recession in the post-war history of Greece. An unprecedented 'great depression'.

The answer to Mundell's dilemma was the exact opposite of that of the previous decade. Priority was given to the sharp correction of fiscal and external imbalances, through fiscal 'austerity' and recession. After three consecutive adjustment programs which lasted for more than eight years, external imbalances were partly addressed at a huge cost in terms of lost production and jobs. These developments are depicted in Figures 1 to 10.

The adjustment programs were officially completed in 2018, but Greece continued to remain in a 'enhanced surveillance' regime within the euro area.

There is little doubt that the primary cause of the Greek crisis of 2010 was the macroeconomic imbalances and structural weaknesses of the Greek economy. These had developed over the previous three decades due to the ineffective economic policy choices by successive Greek governments, due to the social and political costs implied by the necessary adjustments and reforms.

Yet, the fourth act of the tragedy, the 'euro depression', also bears the hallmark of the ineffectiveness of the adjustment programs designed by the 'troika', which was responsible for planning and monitoring the implementation of the post-2010 adjustment programs.

4. Weaknesses and Asymmetries of the Euro Area

The institutional weaknesses and asymmetries of the euro area itself as well as the inefficiency of the European crisis management mechanisms also played an important role in the Greek crisis.

It is well known that the euro area had particular weaknesses as a monetary union, right from the start. It was characterised by pronounced economic asymmetries between its Member States, especially the 'core' economies of Western and Central Europe, and the economies of the 'periphery', such as Greece, Ireland, Portugal and Spain. In addition, cross-border mobility of workers was low, because of cultural, language and institutional reasons. One of the main obstacles is the absence of a euro area wide system of income tax and unemployment insurance. Furthermore, it was not endowed with a sufficient federal budget that could help absorb some of the asymmetric economic and financial shocks affecting its members. Finally, the euro area was a monetary but not a banking union, while its central bank, the European Central Bank (ECB), does not have the authority to operate as a 'lender of last resort' to either its member states or its banks in times of crisis. All these considerations made it a particularly vulnerable 'currency area' that did not satisfy any of the criteria required from an 'optimum currency area'.[30]

These weaknesses played an important role in the development, transmission and effects of the euro area crisis. The crisis of 2010 did was not confined to Greece. It affected the whole euro are, especially the economies of the 'periphery', such as Spain, Portugal and Ireland. It even affected some of the major economies such as Italy and France.[31]

The other economies of the periphery had faced dilemmas and problems similar to the one faced by Greece, as they were also characterised by external and financial imbalances, were also confronted by Mundell's dilemma between internal and external balance, due to their inability to devalue after having adopted the euro.

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[30] The question of what constitutes an 'optimum currency area' was first posed and partially answered by Mundell (1961), who is rightly considered as the originator of the literature on the subject. McKinnon (1963) and Kenen (1969) were early major contributors to this literature. The literature was revived in the 1980s, as additional considerations were added. A survey of the so called 'new' theory of optimum currency areas can be found in Tavlas (1993). O' Rourke and Taylor (2013), among others, have recently argued, that the United States is much closer to the optimum currency area criteria than the euro area.

[31] For studies that focus on the wider dimensions of the euro area crisis see, among others, Lane (2012), O'Rourke and Taylor (2013), Chen et al (2013), Baldwin and Giavazzi (2015, 2016), Alesina et al (2015), Orphanides (2015, 2017 a,b), Brunnenmeier et al (2016), Kang and Shambaugh (2016), Papademos (2016), Stiglitz (2016), Wyplosz (2016), Mody (2018), Alesina et al (2019), Alogoskoufis and Jacque (2019) and Ioannides (2019). For analyses of the euro area before the crisis see Blanchard and Giavazzi (2002) and Wyplosz (2006).

However, the fact is that for a long period of time Greece has had deeper and more serious macroeconomic imbalances and structural weaknesses than the other economies of the 'periphery' of the euro area. For example, Spain and Ireland, despite their huge financial imbalances did not have the fiscal problems of Greece, while Portugal had much smaller fiscal and external imbalances in 2009.

5. Macroeconomic Imbalances and Structural Deficiencies in Greece

We are now in a position to summarise our analysis of the macroeconomic imbalances and the structural, institutional and political weaknesses of the Greek economy.

According to our analysis, the crisis of 2010 was the consequence of the persistent and major macroeconomic, structural and fiscal imbalances created mainly in the 1980s, the fact that Greece entered the euro area with major competitiveness problems and large fiscal imbalances and the significant weaknesses and delays of the structural and macroeconomic adjustment efforts undertaken since the 1990s. The proximate cause of the crisis was the rapid buildup of external imbalances after euro area entry and the trigger was the international financial crisis and the international recession of 2007-2009.

Macroeconomic Imbalances

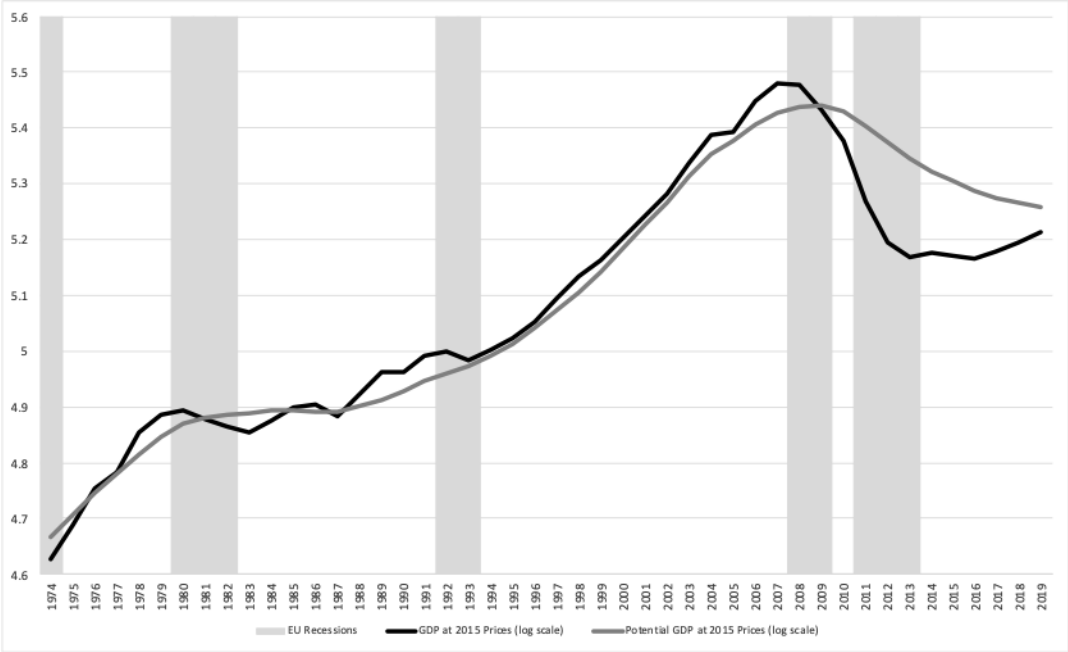
The fact that Greece was not adequately prepared to join the euro area was perhaps the most decisive from an economic point of view. Giving up the freedom to choose its own monetary and exchange rate policy, in conditions of deteriorating international competitiveness and fiscal imbalance, proved to be perhaps the most crucial element in the creation of the conditions that eventually led to the 2010 crisis.

According to the latest revised data of Eurostat, in 1999, the year on the basis of which the question of Greece's accession to the euro area was assessed, the gross debt of the general government was at 98.9% of GDP, without a declining trend towards the 60% envisaged in the Treaty on European Union. The deficit of the general government was at 5.8% of GDP, almost double the 3% envisaged in the treaty.

Furthemore, the international competitiveness of the Greek economy, based on real relative unit labor costs vis-a-vis the EU-15, had declined by 33% compared to 1987 and by 25% compared to 1992.

The significant reduction in real interest rates and the feeling of euphoria created after euro area entry, led to a large increase in investment and a reduction in national savings. This resulted in an increase in domestic aggregate demand and GDP growth, lower unemployment, but also a large expansion of private sector borrowing and the current account deficit. This development was reinforced by the almost immediate increase in the already high budget deficits after Greece had secured entry to the euro area, the continuous deterioration of international competitiveness, through the excessive wage increases agreed

Figure 11. Real and Potential GDP in Greece, 1974-2019 (Billion 2015 euros, logarithmic scale)



Source: EU Commission, AMECO Database (November 2020).

upon by the social partners in the midst of euro euphoria, and the excessive increase in domestic bank lending to the private sector.

These are the factors that led to a sustained widening of the gap between aggregate demand and the country's productive capacity.

Figure 11 depicts the evolution of Greece's GDP and its potential GDP for the past 45 years. For most of the period, especially since the late 1980s, actual GDP was above its potential, due to the relatively expansionary aggregate demand policies. Potential GDP was rising since the late 1980s, but not by enough to keep up with aggregate demand. For almost twenty years before the 2010 crisis the country financed a large part of its consumption, investment and economic growth through excessive private and public borrowing from international financial markets. International lending was the tool that on the one hand sustained high domestic demand and on the other hand facilitated the postponement of the necessary reforms.

Neither the adjustment policy of the 1990s, nor the stabilisation program of 2005-2007 did manage to reverse these trends.

When the international financial crisis and recession of 2007-2009 broke out, leading to a deterioration of the existing fiscal and external imbalances and finally the 'sudden stop' in international borrowing in 2010, the political process that determined economic policy choices in the previous thirty years was disrupted, and Greece was forced to adopt a policy mix based on a front-loaded increase in national savings and decline in domestic investment.

The adjustment programs implemented since then have relied heavily on fiscal 'austerity', and caused a catastrophic deep and lasting economic downturn.

After 2010, the 'euro depression' resulted in GDP declining below its potential. Yet, because of the catastrophic decline in aggregate investment and the fact that the adjustment programs did not focus on structural reforms that could, over time, lead to a recovery in investment and total factor productivity, there was also a significant decline in Greece's potential GDP. Hence the recovery after 2016 was weak and in no way sufficient to compensate for the great losses of the long period of the great crisis.[32]

Institutional Weaknesses and Structural Deficiencies

The low and declining potential GDP suggests that in addition to the macroeconomic imbalances, there still exist major institutional weaknesses and structural distortions in the Greek economy. These seem to be concentrated in six main areas:

1. the functioning of the markets for goods and services,
2. the labor market and collective bargaining,
3. the financial system,
4. the operation of the public sector,
5. the tax and welfare system, and
6. the education system.

These are the areas where the main reforms will have to focus from now on. We shall briefly refer to all six.

1. Markets for Goods and Services

The markets for goods and services in Greece are characterised by a lack of competition and an extremely limited range of goods and services produced. Most industries have a strong oligopolistic or even quasi-monopolistic structure, which is reinforced by the large size of the public sector and the inability of the regulatory agencies to implement an effective competition policy.

According to the *Global Competitiveness Report* (GCR) of the World Economic Forum (WEF), the weaknesses of the markets for goods and services in Greece are attributed to the existence of distorting taxes and subsidies, to their oligopolistic structure, to the low international orientation of production, the low dynamism of companies and to the limited possibilities for introducing innovations.[33]

[32] For a recent analysis of trends in Greek economic growth see Leounakis and Sakellaris (2019).

[33] It is significant that with respect to the efficiency of its product markets, Greece is ranked in the 81 place, among 141 advanced and less advanced economies. See WEF (2019). This is the worst performance among all countries in the euro area.

In addition, due to the almost continuous deterioration of the international competitiveness of the Greek economy, the export sectors or the import substitution sectors have been shrinking for many years in favor of sectors producing non-tradable goods and services.[34]

2. The Labor Market and Collective Bargaining

The shrinking of the sectors producing internationally tradable goods and services sectors has accelerated due to the functioning of the labor market. The institution of free collective bargaining in the private sector have failed spectacularly to prevent the continued deterioration of the international competitiveness of the Greek economy.

The relatively small size of the internationally tradable goods industries and their consequent low impact in the collective bargaining process, led to wage increases well above the limits set by increased labor productivity. In the 1980s, due to the accommodating nature of monetary and exchange rate policy, this led to a vicious cycle of wage increases, devaluations and inflation. After the adoption of the policy of the 'hard drachma' in the 1990s, this led to a vicious cycle of continuous deterioration of the international competitiveness of these sectors and the Greek economy as a whole, further reducing the size and bargaining power of the internationally traded goods sectors.

This process was exacerbated at critical times, especially during elections, by high wage increases in the public sector. Wage increases of government employees have been the result of mandatory government incomes policies, and were subject to the same political incentives and constraints that affected fiscal policy in general. Moreover, after 1990, salary increases in public enterprises and organisations were not directly determined by government incomes policies, but were the result of collective bargaining between weak government-appointed managers and strong public sector unions. After a 1990 'reform', disputes were referred to compulsory arbitration, which usually ended up awarding increases quite near to the excessive wage demands of public sector unions. These weaknesses in public sector wage setting have often resulted in excessive wage increases, which sooner or later spilled over to the private sector. There were also one of the main reasons for the deterioration of the general government balance.[35]

The system was short-circuited during 2010-2016, through mandatory wage cuts by the 'troika', but it has not been reformed. Thus, there is an increasing risk of a relapse to the policies of the past.

A number of other distortions exist in the Greek labor market. The main other problems are the distortions caused by the nature of employee protection legislation, the limited flexibility of working hours and the high non-wage costs.[36]

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[34] In a recent study, Arkolakis, Doxiadis and Galenianos (2017) attribute primary importance to the distortions of the markets of goods and services for the poor export performance of Greece.

[35] One of the persistent characteristics of the Greek labor market is the persistently high wage premium in the public sector (Giordano et al 2011). The high wage premia in the public sector were preserved even under the wage adjustments brought about by the crisis. As suggested by Christopoulou and Monastiriotis (2016) 'Compared with private sector wages, public wages were less affected during the Greek crisis. In result, public wage premia increased, especially for the low-paid workers.' (p. 176).

[36] See Lyberaki et al (2017).

According to the *Global Competitiveness Report* of the World Economic Forum (WEF) for 2019, Greece is ranked 111th among 141 developed and less developed countries in terms of labor market efficiency. Again, in the worst position with respect to all other EA countries.

3. The Financial System

The financial system has also been characterised by major institutional weaknesses. In the 1980s, and before its liberalisation in the early 1990s, the financial system operated as part of the government and the public sector, due to the dominance of large state-owned banks. The financial system had contributed significantly to the inflationary financing of large budget deficits and to the use of private sector savings to finance ever-increasing public expenditure and the deficits of public enterprises and organisations. After the liberalisation of the late 1980s, and despite the continued presence of large state-owned banks, government control eased.

However, with the liberalisation of the financial system issues of inadequate supervision became significant. Weak supervision of both commercial banks and the Athens Stock Exchange led, on the one hand, to the 1999 'bubble' of the Athens Stock Exchange, and, on the other, to the financial explosion of the period 1998-2008, following the sharp reduction in nominal and real interest rates.

Inadequate supervision and political tolerance, if not encouragement, of the financial boom and the stock market 'bubble', contributed to the strengthening and widening of the macroeconomic imbalances of the Greek economy and in particular the widening of the external imbalances and the accumulation of external debt.

Following the 2010 crisis, and during the implementation of successive adjustment programs, commercial banks faced capital adequacy problems for three main reasons. Firstly, because of the 'deleveraging' caused by the crisis. Secondly, due to the 'haircut' of the value of government bonds in 2012, with the so-called 'Private Sector Initiative' (PSI), which further weakened the banks' balance sheets, Thirdly, due to the large and prolonged recession which resulted in the dramatic increase in non-performing loans .

The weaknesses of the financial system exacerbated the macroeconomic and financial imbalances during the period of 'euro euphoria' and the intensity, duration and high cost of the 'euro recession'.

The financial sector has exited the crisis in a much weaker position and is in need of substantial recapitalisation and reform.[37]

4. Public Administration and the Public Sector

Perhaps the biggest structural weakness for the Greek economy is the inefficiency of the public administration in conjunction with the extensive economic role of the state.

According to the Global Competitiveness Report of the World Economic Forum for 2019 Greece is ranked 92nd among 141 countries in terms of public sector efficiency. The two main

[37] See Haliassos et al (2017) and Louri and Migiakis (2019) for recent studies of the evolution and the current state of the financial sector in Greece.

problems identified are the burden of bureaucracy (127th place) and the inefficiency of the justice system (131st place).

This inefficiency has significant negative consequences for the functioning of basic state functions, as well as for the tax system, the regulatory role of the state and the efficiency of public enterprises and organisations. This inefficiency also creates particular problems for the welfare state, social security and the country's education system.

The problems are low efficiency and productivity and corruption seem to have worsened in the thirty years before the 2010 crisis due to the predominance of partisanship over meritocracy, among others. The result has been a gigantic but inefficient bureaucracy and widespread corruption and tax evasion.

These problems, even after the implementation of the adjustment programs, continue to be major obstacles to the recovery of the Greek economy.[38]

5. The Tax and Welfare System

The tax system is also a major obtacle. Greece is ranked very low internationally in a series of relevant indicators of the *Global Competitiveness Report* of the World Economic Forum for 2019. In the index regarding the distortions caused by the tax system for competition, Greece is ranked 109th among 141 countries. In the index regarding the tax burden of labor, it is ranked in 117th place. In the index regarding social capital, it is ranked 118th.

An effective tax system must generate sufficient revenue with the fewest possible distortions in allocative efficiency, while contributing to a fairer distribution of income and wealth.

On the other hand, the social welfare system should contribute to a fairer distribution of income and wealth, with the least possible costs and the least possible distortions to the efficiency of resource allocation.

The first major distortion concerns income taxes. Instead of a uniform treatment of taxable income, different sources of income are treated differently. Indirect taxes, such as Value Added Tax (VAT), which is levied on almost all goods and services produced, as well as excise duties, also cause major distortions because of the high rates at which they are levied. Distortions and injustices are also caused by real estate taxes as well as real estate transfer taxes and the taxation of corporate income.

The tax and welfare system in Greece is so complex and opaque that in addition to the distortions it causes for incentives to work, save and invest, it is also characterised by a very large extent of tax evasion and avoidance. Both of these forms of non-compliance result in costs that are shifted to people with apparent sources of income, such as salaried employees in the 'formal' economy. Apart from the inequities that it generates, this shift undermines the

[38] See Jacobides (2017), Kaplanoglou (2019), Karkatsoulis and Stefopoulou (2017), Lambropoulou and Ladi (2020), and Spanou (2019) for recent studies of public administration in Greece, before and after and crisis. Sotiropoulos (1993) studies the problem of party-political capture of the administration following elections, while Sotiropoulos (2019) studies the evolution of state-society relations after the crisis. Featherstone (2019) examines how Greece's institutional weaknesses affect its ability to benefit from EU participation and to adapt to EU institutions and policies.

social acceptance of the system, with the result that tax evasion and tax avoidance become widespread and socially acceptable activities.[39]

6. The Educational System

Despite the high percentage of Greeks completing secondary education, educational outcomes in Greece, as measured by the results of the PISA exams in mathematics, science and reading, are significantly lower than the EU and OECD average. This difference reflects the low efficiency of the Greek education system, and is reflected, among other things, in the lower productivity of the average Greek worker compared to the rest of the euro area.

In addition, participation in vocational education and training (VET) programs remains relatively low, while Greek universities also face significant problems due to their attachment to the state and insufficient funding.[40]

There is significant potential for improving the quality and results of the education system. After all, according to the OECD, after adjusting the skill level of young adults for time spent in education, Greece is ranked only above Turkey in the countries of the Organisation. Additional training in Greece does not increase wages or the likelihood of finding a job as much as in most other OECD countries.

6. Social Interactions, Institutions and Politics

From the analysis in the previous sections it is clear that a large number of significant structural distortions still exist in Greece. These distortions have a negative impact on total factor productivity, the allocation of limited economic resources, the accumulation of physical and human capital and technological progress.

The key question is what stops the reforms that would address these distortions and thus allow for a better allocation of resources, higher investment and growth and the elimination of macroeconomic imbalances.

The analysis of the economic role of institutions, social interactions and politics is pertinent for the answer to this key questions.

Institutions and Long-Run Growth

The role of institutions for long-run economic growth was first pointed out by economic historians, as they viewed the accumulation of physical and human capital and technological progress as expressions of the process of economic growth and not as its fundamental determinants. In the view of North and Thomas (1973), North (1990), and in the view of many other economic historians, the fundamental explanation for comparative development lies in differences in institutions. According to this view, economic and political institutions such as

[39] See Flevotomou et al (2017) for an extensive analysis of the tax and welfare system and the need for reforms.
[40] See Vettas (2017) for a comprehensive analysis of the problems of the educational sector in Greece.

human, political and property rights, the existence and imperfections of the markets, the nature of the political system, etc. are of primary importance for economic performance.

Economic and political institutions are considered important because they influence the structure of incentives. For example, without the protection of property rights, households and firms have limited incentives to invest in physical or human capital or to adopt the most efficient technologies.

Economic institutions are also important because they help allocate resources to their most efficient uses and determine who benefits from economic activity. When markets are mis-functioning, the potential benefits of trade are not exploited and resources are not allocated efficiently. Societies with economic institutions that facilitate and encourage the accumulation of physical and human capital, innovation and the efficient allocation of resources prosper, while societies with institutions that hinder them remain stagnant.

A number of recent studies have examined the effects of the institutional characteristics of the Greek economy on its economic performance. This work is mainly based on the World Bank Global Governance Indicators. These indicators measure the impact of institutions in areas such as 1. the rule of law, 2. the quality of the regulatory framework, 3. the effectiveness of governance, 4. the control of corruption, 5. political stability, and 6. representation and citizen participation.

According to the analysis of the impact of these indicators, among the euro area countries, Germany is the country with the best quality of institutions and Greece the one with the worst. In addition, countries with institutions of better quality appear to have coped better with the effects of the global financial crisis and the 2007-2009 economic downturn. In addition, based on these indicators, the quality of institutions in Greece seems to have deteriorated significantly during the crisis and to have contributed significantly to the 'great depression' of the Greek economy.[41]

Consequently, the quality of the institutions seems to be of great importance for the economic performance of Greece in relation to the other countries of the euro area and to interact positively with its economic performance.

Institutions, Social Interactions and Politics

Economists turned their attention to the role of institutions for growth, following the pioneering empirical study by Acemoglou, Johnson and Robinson (2001), and the literature that was sparked.[42]

The key features of this branch of 'new political economy' are:

First, economic institutions are important for economic growth because they shape the incentives to invest in physical and human capital and technology, and improve the

[41] See Christodoulakis (2019), Featherstone (2019), Christou et al (2020) and Economides et al (2020) for three of the most recent studies based on the investigation of the effects of these indicators and their interactions with the economic performance of Greece.

[42] See also Acemoglou, Johnson and Robinson (2005) and Acemoglou and Robinson (2006, 2012).

organization of production. Although cultural and geographical factors may also be important for economic performance, differences in economic institutions are the main source of cross-country differences in economic growth and prosperity. Economic institutions not only determine the overall economic growth potential of an economy, but also all economic outcomes, including the allocation of resources now and in the future.

Second, in this approach, economic institutions are treated as endogenous. They are determined collectively, largely on the basis of their economic consequences. The preferences of individuals and social groups for economic institutions differ because different economic institutions lead to a different distribution of income and wealth. As a result, there will usually be conflicts of interest between different individuals and social groups over the choice of economic institutions. These conflicts of interest are resolved through the political process.

Third, the distribution of political power in society is also treated as endogenous in this literature. Political institutions, like economic institutions, determine the constraints and motivations of key actors in the political system. The functioning of the political system is determined both by the legislation in place, but also by the distribution of economic power in society. Access to power for certain groups depends on the economic resources at their disposal, which determine both their ability to use (or abuse) existing political institutions and their ability to prevail politically over other groups.

There are two sources of slow adjustment in the behaviour of such a system: first, political institutions are resilient. A major change in the distribution of political power is usually required to bring about change in political institutions. The most typical example of such a change is a transition from dictatorship to democracy, as happened in Greece in 1974. Second, when one social group is economically stronger than the other, it will increase its de facto political power, which will allow it to push for economic and political institutions favorable to its interests. This will tend to reproduce the initial relative wealth inequality in the future. Despite these trends of inactivity, the framework also highlights the possibilities for change. In particular, major disruptions, including changes in technology and the international environment,

One of the reasons that reforms of political and economic institutions are blocked is related to the interaction of social and economic groups with politics.

The various social and economic groups in Greece have secured significant privileges that allow them to earn sizeable economic rents at the expense of other groups. While the rents are important for each social group, the cost of the privileges that secure these rents is more widely disseminated to society as a whole.

Although no particular social or economic group is politically dominant, as the political system is broadly representative and participatory, each social group, from business groups in non-competitive industries, associations of professionals of various types, trade unions in the wider public sector, and others, have the ability to politically block reforms that are harmful

to their narrow interests and protect the privileges and arrangements that guarantee them these rents.[43]

Each social and economic group has little to gain from reforms that affect other groups, hence it does not support them. Worse, each social and economic group reckons that if it consents to reforms harmful to other groups, it may later find itself in the position of defending its own privileges. On the other hand, each social and economic group has sufficient motivation and political power to be able to prevent reforms that undermine the special privileges it has secured.[44]

The relentless electoral competition between the main political parties, partisanship and corruption in the public administration, the control of a large part of the media by business interests, the party-political influence of the trade unions in the wider public sector and the indifference, or even the fear, of the wider social majority regarding the promotion of beneficial reforms are the key factors behind this situation. Thus, interaction of social groups through Greece's political and economic institutions ultimately leads to inaction on the necessary reforms. In this way, Greece is trapped in an inefficient economic and political balance, which is far from conducive to reforms that would contribute to economic efficiency and economic growth.

Any attempt at reform, even if it directly affects a small minority, meets with a strong political reaction from those directly affected and with the indifference, if not hostility, of the large social majority. This is perhaps the main reason why socially beneficial reforms are not moving forward.

Ultimately, however, it is the responsibility of the country's political system to design and implement a way out of this ineffective and nationally damaging trap. There is little doubt that initiatives to promote the economic, social and institutional reforms required in Greece can only be promoted through the country's political system.

This is something that the Greek political system has failed to do so far. In fact, the political system has the main responsibility for the policy cycles that preceded the 2010 crisis as well as joint responsibility for the management of the crisis to this day.

Behind the initial destabilisation of the economy in the 1980s was the inability of the political system to effectively manage the social and political pressures to redistribute income and wealth in favour of the large and electorally powerful middle classes, consisting of private and public sector employees, retirees, farmers, the self-employed and owners of small and medium-sized enterprises.

Since the 1990s, adjustment efforts have been weak, lopsided and ineffective, mainly due to the very weaknesses of the political system to effectively manage social and political pressures to protect the living standards of the various social and economic groups from the redistributive effects of the necessary reforms. These social pressures, as well as the ability

[43] See Olson (1965) for an influential analysis of such a process in democratic societies.

[44] For an attempt to model a pattern of such interactions between social groups and politics in order to explain Greece's disappointing economic performance, see Kollintzas, Papageorgiou and Vassilatos (2018) and Kollintzas et al (2018).

of organised minority interests to thwart reforms that were detrimental to their own narrow interests, often led to ineffective choices, postponements and changes of course.

Greece's political, social and economic institutions were not able to prevent the continuous accumulation of public debt and the continuous deterioration of the international competitiveness of the Greek economy. The same happened unfortunately with the fiscal restrictions from the Maastricht Treaty and the Stability and Growth Pact, which successive Greek governments have largely managed to evade.

Only with the enforcement of the adjustment programs after 2010 did the fiscal adjustment and the correction of international competitiveness take place. However, due to the large imbalances that had built up by that time, and the design and implementation weaknesses of these programs, the cost of the adjustment has been enormous. Moreover, those political and institutional reforms that would have made it impossible, or even very difficult, to return to the practices of the past were not promoted.

7. The Pandemic and its Economic Impact

In any case, and while the Greek economy seemed to have entered a mild recovery after 2017, in 2020 a new major international economic crisis broke out, due to the coronavirus pandemic (Covid-19). This crisis, which is still developing, is potentially as serious, if not more serious, than the 2007-2009 international financial crisis.

The pandemic and the restrictive measures it has demanded have deeply disturbed the world economy and of course the economy of Greece. As a result of restrictive measures to address the pandemic, global demand, global supply chains, labor supply, industrial production, commodity prices, foreign trade and capital flows have shrunk significantly. The pandemic hit both the European and Greek economies hard at a time when they were still vulnerable to new disruptions.

On the positive side, Greece is not politically isolated, as happened in early 2010. Yet, the impact of the crisis and the way it will affect the various Member States will be anything but symmetrical.

The consequences will depend not only on the severity of the pandemic and the duration and severity of the measures to contain it, but also on the specific economic side effects and the initial conditions of the various Member States, as well as the flexibility of their fiscal policy.

Once again, as in 2010, the EU and the Euro area are proving relatively unprepared to deal effectively with a major international economic crisis. The necessary reforms in the functioning of the euro area after the international financial crisis of 2010 had proceeded too slowly. However, unlike in 2010, when the cost of adjustment was passed on to the economies of the periphery, in 2020 the EU countries finally agreed to set up a significant new temporary crisis management mechanism. The agreement on the Recovery and Resilience Facility (RRF) and other initiatives totalling 750 billion euros creates a temporary mechanism

to jointly deal with this latest crisis. This is a positive, albeit limited, initiative in the right direction.

Greece's economy has already been severely affected by the pandemic, the countermeasures taken to limit its spread during 2020 as well as the new global recession. The economic and fiscal impact is expected to be large due to the importance of the tourism sector and the small size of Greek firms, most of which are concentrated in the service sector, which has proven particularly vulnerable. Despite the immediate measures to support the economy, the strong contraction in production is expected to eventually affect employment. In addition, both the recession and the fiscal cost of crisis response measures will lead to a significant rise in the budget deficit and a resurgence of public debt relative to GDP.

The pandemic crisis is still developing, and forecasts are extremely uncertain. However, the immediate and short-term economic outlook appears to be particularly negative. In February 2021, the EU Commission estimated that GDP has fallen by 10% during 2020 and would remain below the 2019 level during both 2021 and 2022. Greece's government debt to GDP ratio was estimated to have risen to 207% of GDP in 2020, from 180.5% in 2019, and that it would remain above the 2019 ratio during both 2021 and 2022.

Increasing public borrowing in order to support the economy in the short term is certainly the right solution, both globally and for Greece. However, the increase in borrowing is nothing but a partial shift of the problem to the future. As in the aftermath of wars, so in the aftermath of major economic downturns, economies have to tackle the problem of debt repayment, or at least attempt the reduction of the public debt to GDP ratio.

So how does one pay for the pandemic? By analogy, the question is similar to the question in Keynes' famous 1939 *Times* articles on 'How to Pay for the War'.[45]

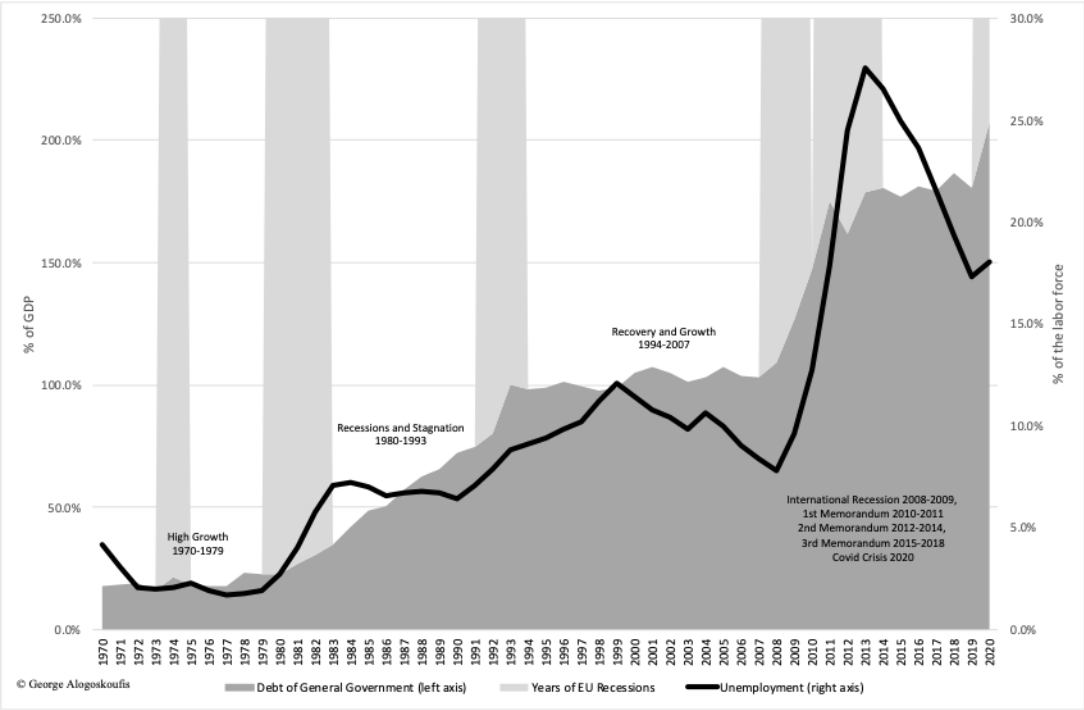
There are three alternative methods of dealing with the large increase in public debt that is taking place after the current crisis. First, is the significant increase in taxation and reduction of primary government spending immediately after the crisis, through a policy of 'austerity'. The second is the restructuring or even the partial write-off of the debt. The third is 'gradual adjustment'. In other words, the continuous postponement of debt reduction, with the hope that the debt will gradually shrink in relation to GDP through economic growth and inflation.

Greece experienced austerity mainly in the period between 2010 and 2018. The international recession of the period 2007-2009 led to an increase in its public debt, and the austerity of the period 2010-2018 led to a dramatic decline in GDP, rising unemployment and rising social inequalities. A prolonged 'great depression'. Due to the deep and long recession, the debt to GDP ratio shot up instead of falling. From 103% of GDP in 2007, before the beginning of the international recession, and 127% of GDP in 2009, after the international recession, in 2018, with the end of the adjustment and austerity programs, public debt had skyrocketed to 186% of GDP. Despite the huge costs paid by workers, retirees and the unemployed, the effects of austerity on public debt have been disappointing. Figure 12, on how Greece's debt usually

[45] 'How to Pay for the War' was the topic, although not the title, of two long articles that Keynes wrote for *The Times*, which appeared 14 and 15 November 1939. They were subsequently amended and published under this title as a short book, in Keynes (1940).

rises in periods of recession and stagnation and is only stabilised in periods of recovery and growth, does not require much additional comment.

Figure 12. Public Debt and Unemployment during Periods of Growth, Stagnation and Recession



Source: Primary Data, EC Commission, AMECO Data Base (November 2020). Data for 2020 are estimates.

Greece experienced the second method, the restructuring and partial write-off of its debt, in 2012. Despite the problems, the results were somewhat better. The cost was paid by holders of Greek government bonds and the shareholders of Greek banks, presumably richer than the low-paid, the pensioners and the unemployed. In addition, there was even a temporary halt to the rising debt and the cost of its servicing was reduced.

However, it is doubtful whether this can be repeated in the current context. The debt problem created by the current crisis is global and does not only affect Greece or the peripheral economies of the euro area, as during 2010-2011. It is unlikely that the rich economies will risk losing their credibility to current and future investors through debt restructuring or write-offs, or that the core euro area economies, now experiencing a rising debt themselves, will accept again to pay part of the cost of debt restructuring of economies of the periphery such as Greece.

I finally come to the third method, that of 'gradual adjustment'. This is how the public debt of the US, Britain and other European economies fell relative to GDP after World War II. This is also the way in which Greece stabilised its debt-to-GDP ratio during 1994-2007. However, this solution has an important prerequisite: For a long time the nominal yield of government bonds should be lower than the sum of GDP growth and inflation.

In the first thirty years of the post-war period this was achieved internationally through rapid economic growth and 'financial repression'. The latter required state intervention in financial markets and capital controls in order to keep interest rates low. In the case of Greece in the period 1994-2007 this was achieved through the reduction of interest rates and the recovery caused by the prospect of joining the euro area and then by euro area participation itself.

The 'gradual adjustment' method has proven to be very effective in tackling large increases in public debt, usually after wars or major recessions. Britain's experience after the Napoleonic Wars and World War II is a prime example. On the contrary, the austerity after World War I or after the Great Recession of 2007-2009 led to further increases in the debt-to-GDP ratio.

Can a policy of 'gradual adjustment' be repeated in an age of liberalised financial markets and capital movements after the current crisis? If it could, a significant part of the cost of the adjustment would be passed on to the presumably richest savers, as well as to future generations, who would have had the benefit of higher economic growth. The problem is whether interest rates can remain low for the long period of time required. This may require a policy of controls in financial markets, in addition to the accommodating monetary policy of central banks. In addition, this solution carries the risk that economies will remain vulnerable for a long time to the risk of a new financial crisis.[46]

In conclusion, these are the three options before policymakers in order to deal with the increase in debt after the current crisis. In practice, they may have to partly use all three. None of the three is painless and each of them has different redistributive effects and involves different risks. What is certain is that when the pandemic subsides, all economies will have to tackle the debt problem with a combination of the above three methods.

The collective effort at European level, with the Recovery and Resilience Facility, which entails a significant transfer of resources to the Greek economy will certainly help. However, this should not give a false sense of security. Other important initiatives and reforms are needed at the national level, for a sustained recovery of the Greek economy following the current crisis.

The main question is the same as before, and will arise more starkly because of the economic and fiscal consequences of the pandemic. It is the question of whether Greece can change course and adopt policies and reforms that will lead to a strong and sustained recovery in economic activity, without the macroeconomic imbalances that developed in the decades following EU accession.

8. Prerequisites for a Sustained Recovery

Greece has no choice but to accept that, remaining a member of the euro area, it will have to adopt structural and fiscal reforms that would allow its economy to recover without the reappearance of fiscal and external imbalances.

[46] For a discussion of public debt and low interest rates from the perspective of the large industrial economies see Blanchard (2019).

Unfortunately, this was not achieved before the 2010 crisis, nor during the post-crisis adjustment period.

In order for the Greek economy to be able to complete the transition from the current crisis to a sustained recovery, it will have to immediately start promoting reforms that will combine the goal of economic recovery with that of maintaining fiscal and external balance. This requires a different mix of fiscal and structural economic policy than the ones pursued during the previous crisis or the decades before the crisis.

The challenge for the Greek economy today, even while dealing with the immediate economic effects of the Covid-19 pandemic, is the adoption of reforms that will facilitate a sustained recovery program that will not be based on excessive borrowing from abroad. It is important that the recovery is export-led, so as not to be accompanied by a further widening of the external deficit, as happened in the decade after joining the euro area.

The recovery should be pursued within the euro area, despite the constraints of Greece's participation in it. Exiting the euro is not a solution, as it poses great risks of economic collapse in the process of transition to a de facto weaker national currency, and, in the medium term, the risk of a return to the economic instability in the 1980s.

The challenge for policymakers, even while dealing with the immediate economic effects of the Covid-19 pandemic, remains the adoption of a program of reforms that will facilitate a sustained recovery within the euro area, that will not be accompanied by the fiscal and external destabilisation of the past. The task is made worse by the economic disruption due to the pandemic, but it must remain the top priority for policy makers in Greece.

The program must be formulated consensually and be endorsed by the widest possible range of political forces in the country. Consensus is a necessary condition for continuity, credibility and effectiveness of any medium term reform strategy. The same consensus is required for putting forward Greek national positions for necessary reforms at the level of the euro area.

If Greece learns from the political bickering and controversies of the past, which have caused so much economic damage, and if a minimal political consensus is formed around some of the key issues regarding the necessary reforms, the dynamic recovery of the Greek economy after the current crisis is possible. Otherwise, any results will be small and short-lived, and the Greek economy will not be able to escape the vicious cycles of recent decades.

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Chapter 4. Greece's institutional performance in the EU: the structural constraints on its convergence

Kevin Featherstone

Abstract

Increasing attention has been given to the economic costs of Greece's institutional weaknesses. Here, the latter are considered in relation to Greece's position within the European Union, both in the recent past and in the future. Empirical data is analysed to compare the performance of the public administration in fulfilling EU policy obligations. Greece is shown to be one of poorest performers, at a level comparable to Bulgaria and Romania. Further data is collated to compare the 'quality of government' (QoG) across EU member states. Again, Greece performs poorly. It is then shown that the two sets of data are statistically related: state institutions lacking 'impartiality' from wider socio-economic pressures are most likely to underperform in the delivery of EU public goods. The paper assesses the implications for Greece's convergence within the EU and its prospects for being able to accommodate increasing demands on its institutions resulting from a deepening EU integration process. There are new challenges here for the EU itself as it manages a heterogeneous set of member states. A 'tying hands' strategy of setting rules for national governments to follow is likely to be too indirect and superficial to achieve convergence in (institutional) performance. The EU's new 'Recovery and Resilience Fund' is likely to be a revealing systemic test for both Athens and Brussels.

1. Introduction

The recent Greek debt crisis focussed international attention on the institutional capacity of Greece to deliver the prescribed reforms. In addition, the last years have seen an emerging European-wide debate on the future of the European Union (EU) and proposals for the intensification of its integration process. The latter frequently prompts consideration of how many member states should or can participate in the new initiatives, with metaphors of a 'multi-speed' or inner and outer core Europe as reference points. There are inherent risks for Greece in this regard: of whether it can remain a full and equal member at the centre of the EU, given the performance of its domestic institutions.

This paper recognises that the structural constraints on Greece's convergence with EU norms extend beyond matters of economic policy or of market development to the endemic weaknesses of its public institutions, notably the public administration. These remain despite changes of leader and of governments or of a decades-long public debate on the need for reform. The problems have merited attention from across academic disciplines and prompted debate on the determinants of Greece's divergence from wider European norms. Here, firstly, we examine distinctive empirical evidence of the performance of Greece's public administration and its comparison to other EU member states. We analyse official data on the delivery of EU-mandated policies across different functional areas, as the basis for cross-national comparison. Secondly, we follow Rothstein's (2011) approach to assess the 'quality of government' (QoG) in Greece in comparison to other EU states. The data here suggest the pressures of socio-political interference: the lack of state autonomy or of the 'impartiality' of its institutions. Thirdly, by placing both performance and QoG data together, we find a close relationship between them: the delivery of public goods faces a systemic constraint emanating from wider socio-political encroachment. Fourthly, we consider the strategic implications that arise from the findings: both for the EU, in managing a heterogeneous set of states, and for Greece, in strengthening its convergence. The Conclusion draws the themes and issues discussed together.

Before examining the empirical data, it is useful to consider the historical context of Greece's external vulnerability and how this may relate to its present situation in Europe.

2. The context

In a stimulating synopsis, Kalyvas (2015) identifies seven political and "boom, bust, and bailout" cycles of modern Greek history. These were prompted, he argues, by its unrelenting focus on the combined goals of modernization and westernization. The booms were followed by catastrophe and, subsequently, international rescue, sustaining the modernization project. Indeed, Greece was a lucky state as it was treated benignly as a special case by foreign powers. It was seen as a test case for the export of a Western 'modernity' as, economically and politically, it was the first 'late-moderniser', with Kalyvas borrowing Rustow's terminology. The foreign powers had a strong affinity for Greece's cultural heritage as they appreciated its legacy for the 'West'. And, domestically, Greece's political leaders chose their foreign

protectors wisely – ending up on the 'right' side of history. Thus, the financial 'busts' were never as bad as they might have been. Indeed, Kalyvas contemplates that this pattern may recur in the present if Greece's growth picks up after its recent debt crisis.

Such a narrative of history contrasts with the received version prevalent during the *metapolitefsi*. Political leaders and writers have rather seen Greece as a victim of Great Power/ Super-Power conflicts and their separate interests. Such interpretations have held sway beyond those on the Left. Couloumbis (1976) wrote of foreign intervention in Greece and of its penetration giving rise to a particular type of state in the international system. The alleged complicity of the US in the 1967 coup of the Greek Colonels and in the 1974 Turkish invasion of Cyprus are oft-repeated cases of the outside world being less than benign. But Kalyvas revises this 'dependency' theory logic, of writers like Mouzelis (1986), to emphasise that the will to intervene was well-motivated and had a positive impact.

Certainly, at critical points, Greece needed external help. Kalyvas cites Llewellyn Smith's (1998: xiv) assessment that, 'The contrast between the greatness of Greece's ambitions and the poverty of her resources put a special premium on outside support'. The question then becomes the nature of that external support and Greece's adaptation therein. In the present period, it is Greece's membership of the EU that is most relevant in this regard: the impact of, and response to, processes of Europeanization (Featherstone and Radaelli, 2003).

Using Kalyvas' terms, the 2010-18 years of the debt crisis shifted the foreign perspective on Greece. The cultural affinity with Greece was overturned: in Germany, Bild argued that Greece should sell the Parthenon, for example. Leadership guile from Athens counted for little: George Papandreou faced humiliation at the Cannes G20 in 2011, as did Alexis Tsipras in Brussels in July 2015, not to mention the anger that was created by Varoufakis' confrontational negotiating style in the same year. From start to finish, there was no Greek leader that won special favour from Europe.

Thus, the recent past constitutes an historical break and it serves to focus our attention much more on the structural dimension of Greece's integration within the EU, rather than on Kalyvas' underlying cultural affinities or on leaders as agents, with or without the appropriate guile. The three bailout programmes and the package agreed in August 2018 were seemingly a matter of Europe imposing penitence on Greece for the long-term. The blame was shifted to the mistakes of Greek politicians, as fiscal profligates, more than accepting flaws in pursuing monetary union without economic union amongst a heterogeneous group of states. Under the terms of the August 2018 agreement, Greece was to sustain a government budget surplus of 3.5% GDP per annum to 2023, then 2.2% to 2060. Such terms stemmed directly from the euro-zone's adoption of ordo-liberal precepts: of fiscal responsibility at home. Few economists would see these terms as growth-enhancing (or benign) for Greece.

The euro-crisis was different in form from earlier 'rescues' and the lessons posed for Greece were rather more stark. It is not only a matter of voluntarism at home – the will to reform and converge – but of recognising the extent and depth of the structural divergences that exist, between Greece and the EU's median. It is the latter that, more fundamentally, gauges Greece's Europeanization, defining the gap for 'external help' and the shortfall in its

developmental aspirations. It is a focus on these structural divergences – in particular, Greece's institutional weaknesses - that this paper will adopt, assessing the implications that arise both for Greece and the EU. For there are strategic implications here that extend beyond the 'advantages of tying one's hand' (Giavazzi and Pagono, 1988), in which member states are constrained by tight (fiscal) rules. The latter are surface-level, rather than directly addressing the imperatives and needs of structural reform.

This will remain the case in all probable scenarios stemming from the EU's response to the COVID-19 pandemic. [The likely benign effects of this response are not evidence of Kalyvas' patterns of Greek rescues, as this stems not from the debt crisis but from a separate pandemic.] The EU's debt crisis regime had been relatively unaccommodating, inflexible and punitive, wedded to a singular policy tradition of its anchor economy, Germany. By contrast, the 2020 agreement to establish an EU 'Recovery and Resilience Facility' seemed likely to be transformative: the EU Commission was to leverage funds on the international markets; member states were to receive substantial funding (some €672.5 billion in a mix of loans and grants) with only 'light' conditionality; and solidarity replaced blame as the main narrative. To critics of its earlier debt crisis response, this seemed a decisive Keynesian-turn and placed the EU where they felt it should have been earlier. A Rubicon appeared to have been crossed. A future retreat from the new solidarity might be difficult, politically.

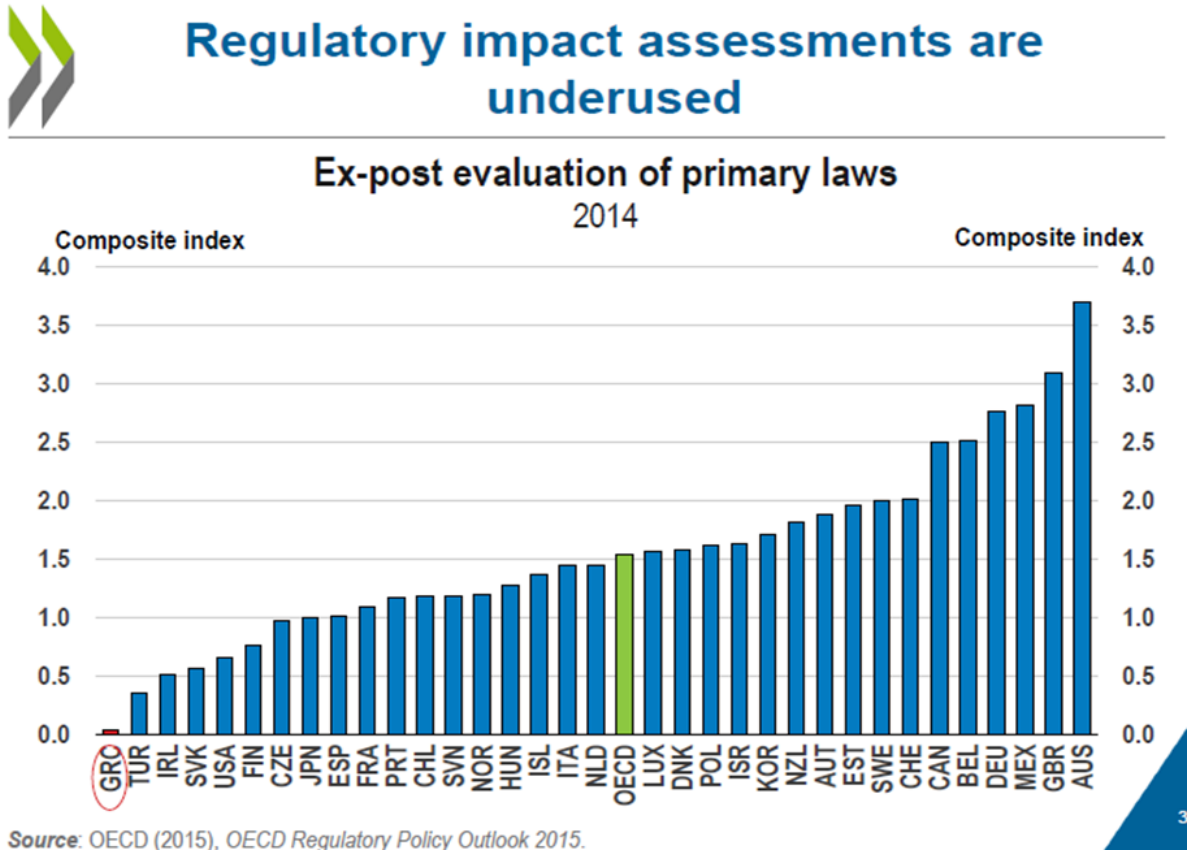
Yet, while very welcome for the Greek economy and with its future impact uncertain, the funding flow does not itself address the fundamentals of Greece's divergence from much of the EU, in terms of its institutional weaknesses and poor policy delivery. These belong to another agenda. The relevance of institutions to state performance was underscored by Acemoglu and Robinson (2012) in their book, 'Why Nations Fail'. As a contribution to the debates prompted by this series of papers, I proceed below to identify and assess the nature of Greece's institutional under-performance within the EU context. I follow this with a discussion of the wider systemic context and QoG in Greece. Thereafter, I consider the implications.

3. Greece's institutional performance compared

Some of the key features of Greece's structural divergences from the EU's core are well-established. In sum, it is a small, peripheral economy that is mostly inward-looking, uncompetitive, and attracting limited inward FDI. In the Global Competitiveness Index of 2018, Greece ranked 87th out of the 137 countries surveyed. In parallel, since 1989 a recurring focus of its national parliamentary elections has been the modernization or reform of the State and its institutions, as citizens and investors bemoan their poor service delivery. Criticisms of the dysfunctionalities of public administration are frequent: it is overly formalistic and rigid in its operational procedures, rule-following rather than pragmatic; hierarchical, ill-coordinated and cumbersome; low-skilled in staff and IT; too non-meritocratic and politicised; and suffused with petty corruption (see, for example: Spanou, 2008; Dimitrakopoulos, 2001; Featherstone, 2015). Market regulation and, ostensibly independent

regulatory agencies, suffer from political interference. The process of governing has not often adapted to modern techniques. Well into the debt crisis and the surveillance of the 'Troika', Greece ranked lowest in a survey of OECD countries in terms of regulatory impact assessment, as Fig. 1 reports. Seemingly minor public acts – the appointment of a university lecturer, for example – require the prior signature of a minister.

Figure 1.



The consequences of these institutional weaknesses can be gauged. There is now a substantial economics literature on this matter. In this same series, Alogoskoufis (2021) identifies the roots as 'the institutional deterioration that occurred after 1981' and sees Greece's institutional weaknesses as central to its long-term economic problems. He lists six priority areas for institutional reform: the functioning of the markets for goods and services; the labor market and collective bargaining; the financial system; the operation of the public sector; the tax and welfare system; and, the education system. The extent of Greece's institutional problems is such that few observers would disagree with this list. In a related paper here, Christodoulakis (2021) estimates the economic costs for Greece in terms of lost growth. Similarly, Economides, Papageorgiou and Philippopoulos (2020), using a counterfactual simulation, have highlighted the primacy of low 'institutional quality' in Greece not being able to limit its debt-crisis GDP loss to just 10%. Their argument is that the greater

GDP loss is a result of Greece's institutional quality not remaining at its pre-crisis levels. Again, Christou, Philippopoulos, and Vassilatos (2020) incorporate institutions into a standard neoclassical growth model to account for divergences in macro-economic performance across 12 euro-zone countries since 2001. They find 'institutional quality' shows considerable cross-country variation and is a 'fundamental cause' of the asymmetries in performance.

Here, I follow a different direction. My focus is of Greece's public institutions as a structural constraint on the country's convergence to EU norms and its prospects for being able to accommodate increasing expectations of performance in the context of a deepening of the integration process in the future. I begin by examining how the Greek public administration performs in implementing its EU policies and obligations. The analysis covers the state's functions with respect to public procurement; VAT collection; and the absorption of EU structural funds. There is some variation in the availability of data for each indicator. Leaving aside absorption, all data runs to 2017, though VAT gap begins in 2004 and public procurement efficiency in 2011.

The selected indicators follow Lowi's (1972: 300) classic typology of policy types that all modern governments perform. In these areas, member states act, in effect, on behalf of the EU Commission. Quantitative data in these areas can be difficult to obtain. Following Lowi, the data here covers member states' distributive action (the national absorption rates of EU structural funds); their regulative efficiency (applying EU rules on public procurement contracting); and their collection of value-added tax (VAT; limitedly re-distributive, from the national to the EU level). While VAT collection is far more significant to national revenues than it is to the EU budget, its inclusion here is indicative of an important government function, and one that may be of increasing general EU relevance in the future. Overall, the data cover a diversity of tasks sufficient to assess national government delivery of EU obligated tasks[47].

Public Procurement

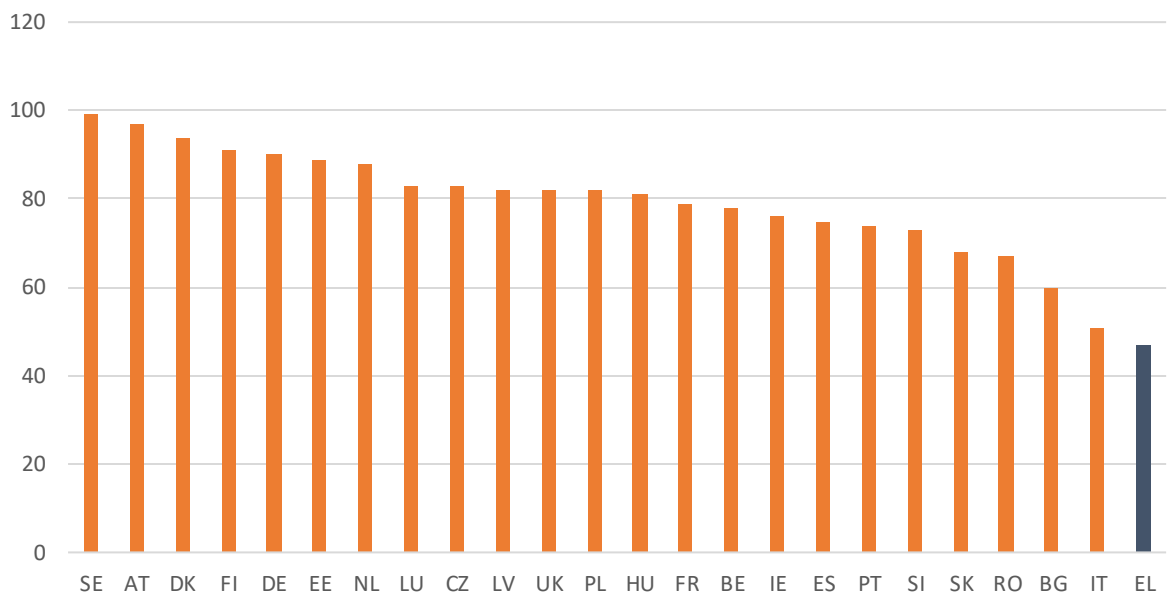
How domestic state institutions manage the processes of contracting goods and services from the private sector is regulated by the legislation of the single European market with a view to providing open competition between providers across member states. It attests to the uniformity and accessibility of the single market: the 'lived' experience of intra-EU trade. The measure used for *public procurement efficiency* is a composite measure created from data recording the efficiency of the procedure in awarding public contracts between 2011–17, with a mean score out of 100 (European Commission, 2017c). The higher the score, the more efficient a state is. Efficiency of procedure measures the mean decision period, i.e. the time between the deadline for receipt of offers (or requests to participate) and the awarding of the contract. To ensure comparability, only notices under the open procedure are considered.

[47] The analysis of the policy performance indicators (procurement; VAT; absorption) follows that in Featherstone and Cottakis (2019).

[The missing years have not been covered by an imputation of data, as the missing period is relatively extensive].

Fig. 2 reports the mean scores across EU member states for the period 2011-17. Of the 24 states covered, Greece has the lowest mean score. Below Italy, it ranks lower than Bulgaria and Romania. The variation amongst member states shows little consistency between 'new' or 'old' member states. These are points to which we will return.

Figure 2. Delivering on EU obligations: Public Procurement Efficiency, 2011-2017



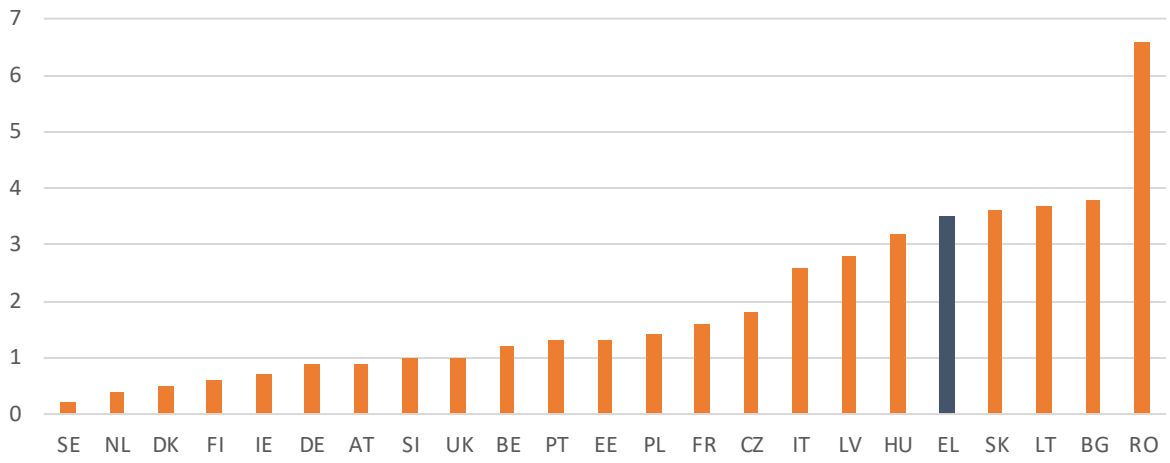
VAT gap

The funding of the EU budget relies, in part, on the collection by member governments of a proportion of revenues generated by the mandatory national application of value added tax (VAT). In reality, how well governments collect this tax revenue varies. The *VAT gap* is the "difference between expected VAT revenues and VAT actually collected, (and) provides an estimate of revenue loss due to tax fraud, tax evasion, and tax avoidance, but also due to bankruptcies, financial insolvencies or miscalculations". It is calculated as a percentage of GDP for the years 2004–17 (European Commission, 2017d): the lower the score, the smaller the VAT gap. It does not refer to the VAT funds transferred to Brussels as part of member state budget contributions, but to the efficiency of the tax collection in the first place. A 'deepening' process of EU integration is likely to utilise this function even more.

Fig. 3 reports the mean scores for the years 2004-17. Of the 24 member states covered by the data, Greece ranks 20th, indicating an endemic problem in its tax revenue service. Moreover, there was little variation in its ranking over these years. The only member states to fare worse than Greece are former Communist states. While Romania's performance is twice as bad as

that of Greece, Greece's score is more than three times worse than that of the Nordic states and The Netherlands.

Figure 3. VAT Gap as % of GDP: mean scores 2004-17



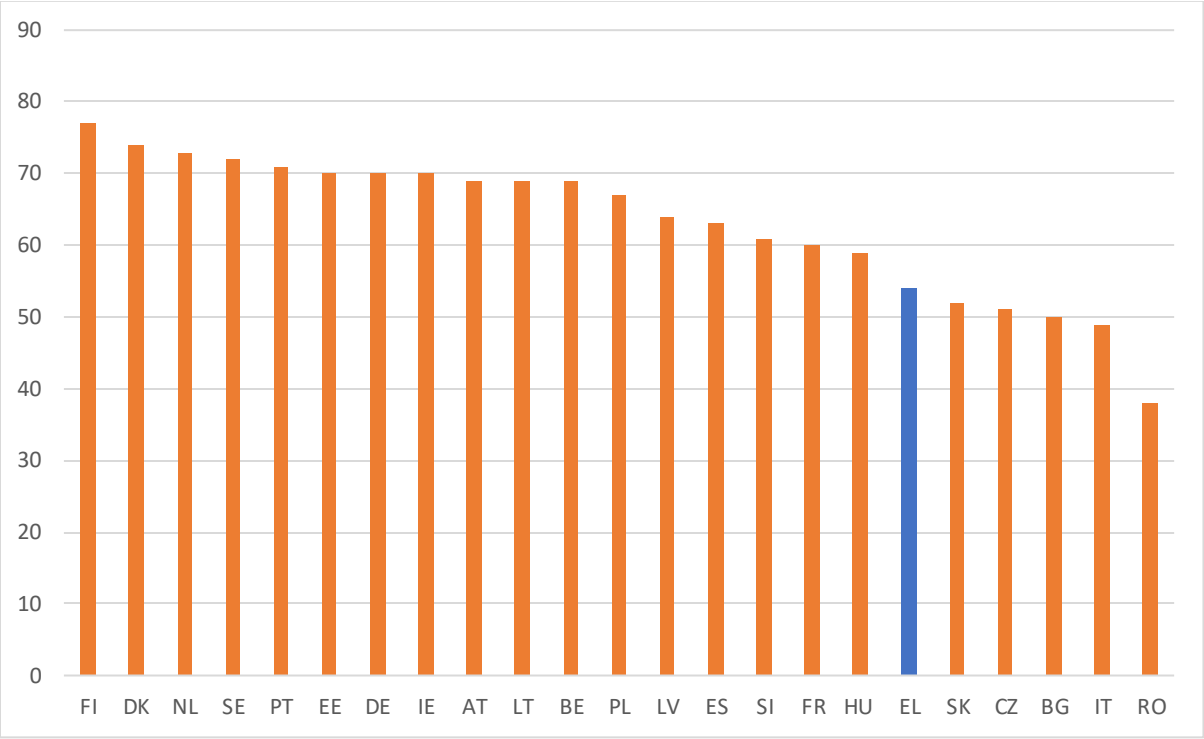
Absorption of EU structural funds

The final functional area is how well government institutions claim and process EU financial aid, which involves planning, coordination and distributional functions. The EU relies on member states to achieve its objectives of addressing regional and social disparities. The official absorption rate is the difference between EU budget (earmarked) commitments per member state and actual payments made. The absorption rate is defined by the EU Commission as the percentage paid to each member state, compared to the available budget (European Commission 2017b). The higher the figure, the higher the rate of absorption.

For this variable, determining the relevant period for analysis requires some caution, however. We avoid using data on the first two years of the budget period, when the standard deviation across member states is low. We also exclude the two years beyond the official budget period (when states can still receive funding). By the end of these 'extra' years, the standard deviation is minimal (1.8). Instead, we focus on 2009–13, the period with the highest degree of heterogeneity across EU states (std 11.25). The states that completed the highest percentage of their projects beyond 2013 were Italy, Greece, Bulgaria, Romania, Croatia, Latvia, Slovakia, and Slovenia. Greece managed a 34 percentage-point increase in its absorption rate in this period, a case that would skew the overall statistical results here if it were included. Moreover, payments in this period to member states were not simply for managing large-scale infrastructure projects, creating further complexity: delayed funding under the European Social Fund (not involving such projects) correlated with that under the European Regional Development Fund (comprising such infrastructure projects) (0.65). Thus, the years 2009–13 are the most appropriate for assessment here.

Fig. 4 reports the percentage absorption rate across EU member states for the years 2007-13. With the UK not included here, Greece ranks 18th out of 23 countries. Romania, Italy and Bulgaria are ranked lower than Greece.

Figure 4. EU structural funds Absorption Rate: % scores 2007-13



4. Explaining the variation in performance

The determinants of institutional performance can be, of course, many and varied. In his conceptualisation of the 'quality of government' (QoG), Rothstein (2013) suggests an approach that resonates with the Greek context. He argues that *the* key feature of QoG is the impartiality of state institutions in their dealings with wider society (see also Teorell, 2009; Rothstein and Teorell, 2012). Rothstein derives the importance of impartiality in the exercise of public power from John Rawls's theory of justice, Brian Barry's notion of justice as impartiality, and the liberal concept of justice in the writings of John Stuart Mill (Rothstein, 2013). The content of policies—welfare or market regulation, for example—"should not be included in the definition of QoG" to distinguish policy content from procedural politics (Rothstein, 2011: 15). "What should count as quality of government", Rothstein argues, is that policies have "to be implemented in accordance with the principle of impartiality" (Rothstein, 2011: 17) and QoG means "having impartial government institutions" (Rothstein & Teorell,

2012). Impartiality is bound up in the idea of the autonomy of public institutions, from wider social pressures of, for example, rent-seeking behaviour, clientelism, and corruption.

We follow Rothstein's (2011: 31–32) conceptualisation on indicators of (im)partiality. Corruption is a negation of impartiality. But, because of its non-transparent nature, corruption is very difficult to measure. By default, analyses typically survey perceptions of corruption on the part of those engaged in interactions with the relevant institutions. Here, we create a composite scale covering perceptions of corruption and favouritism.

Using data from the World Bank and the World Economic Forum, we create an 'impartiality index'. The World Bank's Control of Corruption index draws on multiple sources and covers elites' (business and country experts) "perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as 'capture' of the state by elites and private interests" (World Bank, 2017). A member state's percentile rank indicates its relative position among all countries covered by the aggregate indicator, with 0 corresponding to lowest rank, and 100 to highest rank. Percentile ranks have been adjusted to correct for changes over time in the composition of the countries covered (measured -1 to 3). As the World Bank acknowledges, this data is "useful as a tool for broad cross-country comparisons and for evaluating broad trends over time" (World Bank, 2019).

The World Bank data was complemented by data specifically on favouritism, provided by the World Economic Forum (World Economic Forum, 2017). Again, this is an elite survey with the question: "In your country, to what extent do government officials show favouritism to well-connected firms and individuals when deciding upon policies and contracts?" The scale runs from "1 = always show favouritism" to "7 = never show favouritism". The data on favouritism does not cover the years 2004–06, so multiple imputation is used to distribute observed data in order to estimate a set of plausible values for missing data.

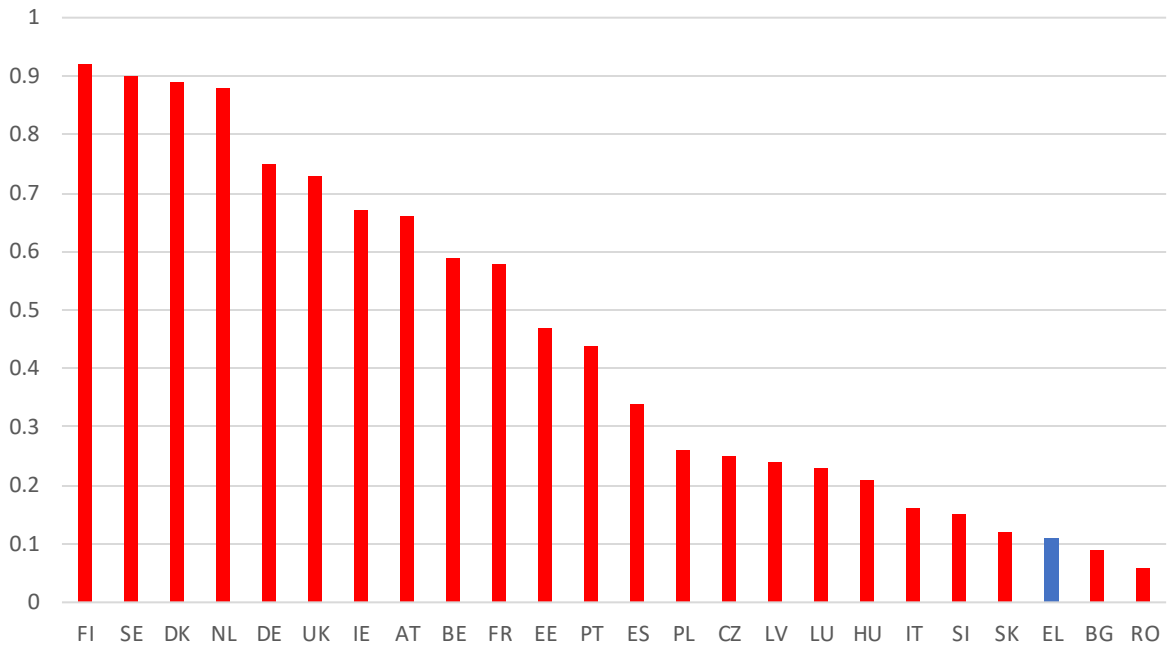
We normalised the variables used for the impartiality scale along a 0–1 axis (using the formula: x - (xmin) = (xmin) - (xmax)) and the composite scale was created by finding the average across the original variables. Unweighted, this constitutes the impartiality index: a high score indicates state institutions are seen as impartial, a low score the opposite.

Public trust in state institutions to perform correctly—consistent with the law—is a parallel measure of impartiality, gauging how far the state administration acts independently of corruption and clientelism. Of course, the link between perceptions and objective conditions can be questioned (Apaza, 2009; Kaufman et al, 2007). Given that the earlier data is based on elite perceptions, we sought to incorporate public perceptions to offer balance to the analysis. Here, we used the data from the Eurobarometer public opinion surveys (European Commission, 2017a). The question asked was: "Do you tend to trust, not to trust, or not know whether you trust or not, your nation's public administration?" Currently, the data is available only for the period 2016–17.

Public trust correlated with our variables (see below): public procurement efficiency (2016=0.721; 2017=0.732) and the VAT gap (-0.541; -0.578). With the logic of keeping within the one budget period, the total absorption rate for the 2007–13 budget cycle was used as a single figure and correlated with the data on trust in the public administration (0.525). The

rankings of member states on the impartiality index and the levels of public trust differ, though only limitedly (Pearson's correlation: 0.889). The implication here is that the impartiality index can suffice as a measure of the social autonomy of the state.

Figure 5. Impartiality Index: mean score 2004-17



With respect to *impartiality*, Figure 5 shows the variation between EU member states in terms of their mean score for 2004–17 (with imputation for 2004–06 only in terms of favouritism). Here Greece ranks just above Bulgaria and Romania and below Slovenia and Slovakia. Greece is well below the EU average. Moreover, Fig. 6 shows that Greece actually experienced an increasing divergence from the EU mean over the 2004-17 period – a concerning widening gulf.

Moreover, the geographical differentiation is not a simple north–south one. Fig. 5 shows that Portugal and Spain scored significantly higher than Greece or Italy, suggesting there is not a common southern European pattern. Instead, there is a north/south-east Europe contrast (see Fig. 8). The three Nordic EU members display the greatest social autonomy, those in the south-east, the least. By contrast, only Estonia is ranked in the upper half; those in the lower half comprise the remaining central European states, the Balkans (including Greece), and Italy. Geographically, the EU has a south-east problem. Romania, Bulgaria, Greece, Slovenia and Italy (alongside Slovakia) have public administrations operating within a socio-political setting of relatively high levels of corruption, favouritism, and low public trust in institutions. Such 'rentier' behaviour gives rise to what Rothstein and Uslaner (2006) describe as a 'social trap'. In this 'trap', the state feeds on wider social norms and the citizen distrusts state

institutions, in a type of vicious circle. Breaking-free of such a trap is difficult, requiring systemic shifts.

We now consider the relevance of social autonomy to institutional performance. When comparing the *impartiality* results with the rankings revealed on the three performance indicators – public procurement efficiency, VAT GAP, and EU fund absorption – there is some consistency evident. Of the countries scoring lowest on the *impartiality* index, four of the bottom six appear consistently in the lowest six on each of the three performance indicators. These are Romania, Bulgaria, Greece, and Slovakia. Italy ranks in the lowest 6 on two of the performance indicators. This is indicative of the correlation between a lack of state autonomy from wider socio-political pressures (low impartiality) and a problematic administrative performance in delivering public goods. The former distorts the latter.

The causal relationship is analysed further in Featherstone and Cottakis (2019). A regression analysis compared the relative significance of *impartiality* (as defined here) with a range of alternative variables. These were institutional capacity (measured as the size of the civil service; government expenditure; GDP per capita; separately also the 'Oxford International Civil Service Effectiveness Index' [InCISE] on staff skills levels); the length of a country's membership of the EU (to gauge learning effects); the level of statism (measured in terms of the regulatory burden); the type of welfare state regime; and, democratic political culture (the latter two to assess separate impacts on public attitudes towards state institutions). For the VAT gap, impartiality had the highest level of significance (10% level) consistently relative to all other variables. For public procurement and funding absorption, impartiality again had the highest levels of significance (at the 1, 5 and 10% levels), until welfare state type was added to the regression, when other variables became significant, though these differed between procurement and absorption. Apart from welfare state type, none of the other variables had significant impact across the performance measures.

That the impartiality index proved to be more statistically significant than the measures of institutional capacity for the delivery of EU policies is a particularly noteworthy result. When the InCISE index was used in an OLS regression, again no significance was shown for 'capacity'. The results suggest important implications for how an EU member state may 'escape' from poor institutional performance and for the strategy of the EU in the face of such performance. More important than resources or skills is the socio-political setting and extent to which the latter does not intrude into the operation of the public administration. In short, keeping political pressures (corruption; favouritism) at bay matters for the effective operation of public administration. These considerations will be discussed further below.

Further evidence of problematic performance comes from the World Bank's 'Government Effectiveness' data, based on a mix of surveys including both domestic and external. By 'government effectiveness' is meant the 'perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies' (http://info.worldbank.org/governance/wgi/Home/Documents). Relevant results are shown in Fig. 7. A key point here is that it is the 'perceptions' of government effectiveness at play here and those engaging in the 'perceiving' vary within the

composite scale. Yet, in the aggregate, the results have value – they reflect the assessments of those having contact with the Greek public administration.

The graph shows a steady downward performance for Greece for the 2004-2017 period, such that it converges with Bulgaria. [For 2019, Greece maintains a marginally better performance than Bulgaria]. As a benchmark for the EU's core, the trend line for Germany is relatively stable across these years. This composite variable – based on data from a range of sources – reinforces the picture of Greece's public institutions veering away from the EU's inner core and converging with other Balkan states. It parallels the trend evident in the *impartiality* index. There is, to a degree, an overlap in the meanings of both variables – the independence from political pressure, for example – but this serves to offer some validation of a syndrome linking lack of impartiality and poor institutional performance.

Figure 6. Impartiality Index: Trend 2004-2017

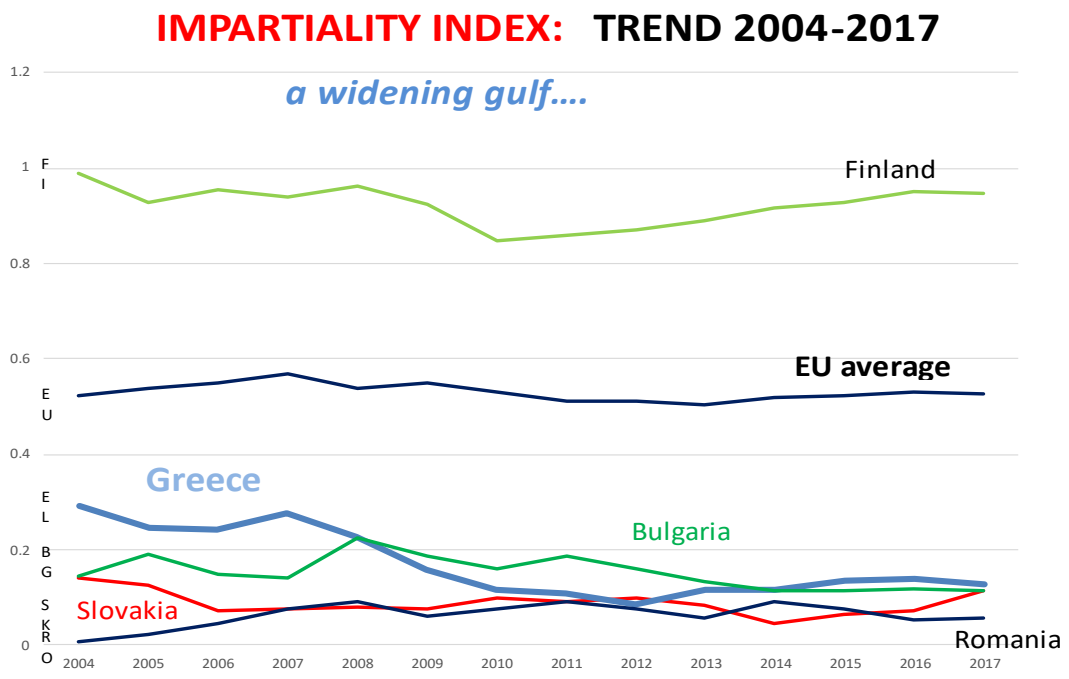


Figure 7. Perceptions of Government Effectiveness 2004-2017 [World Bank: WGI]

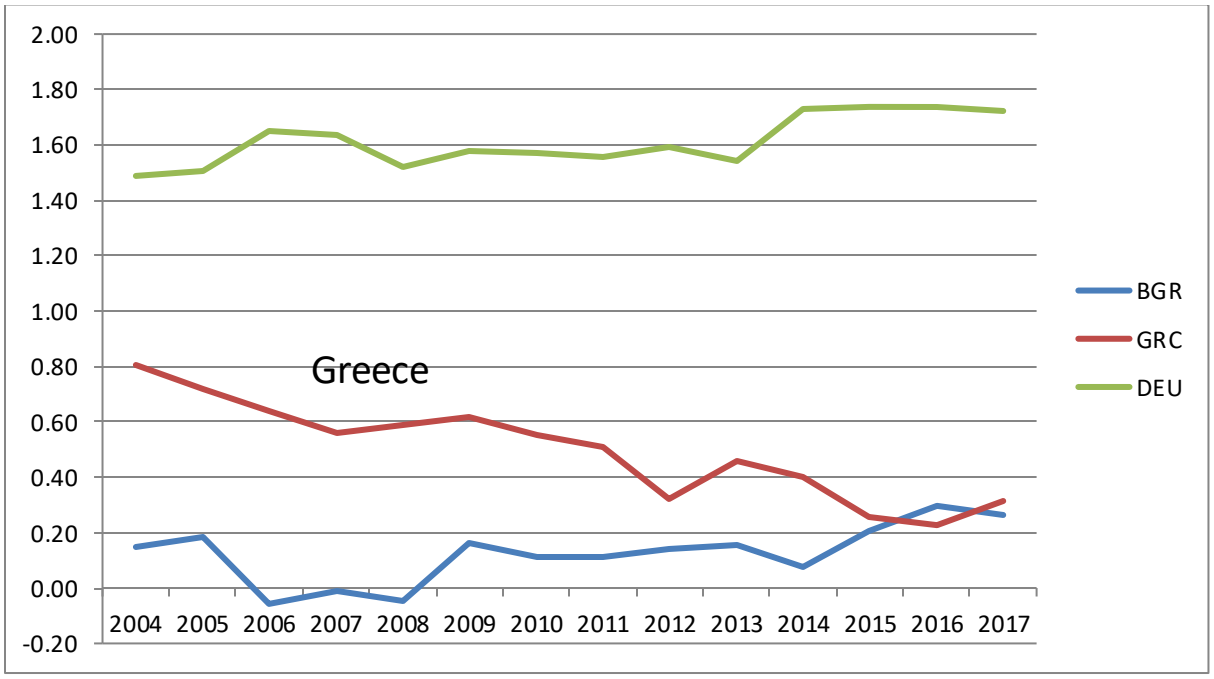
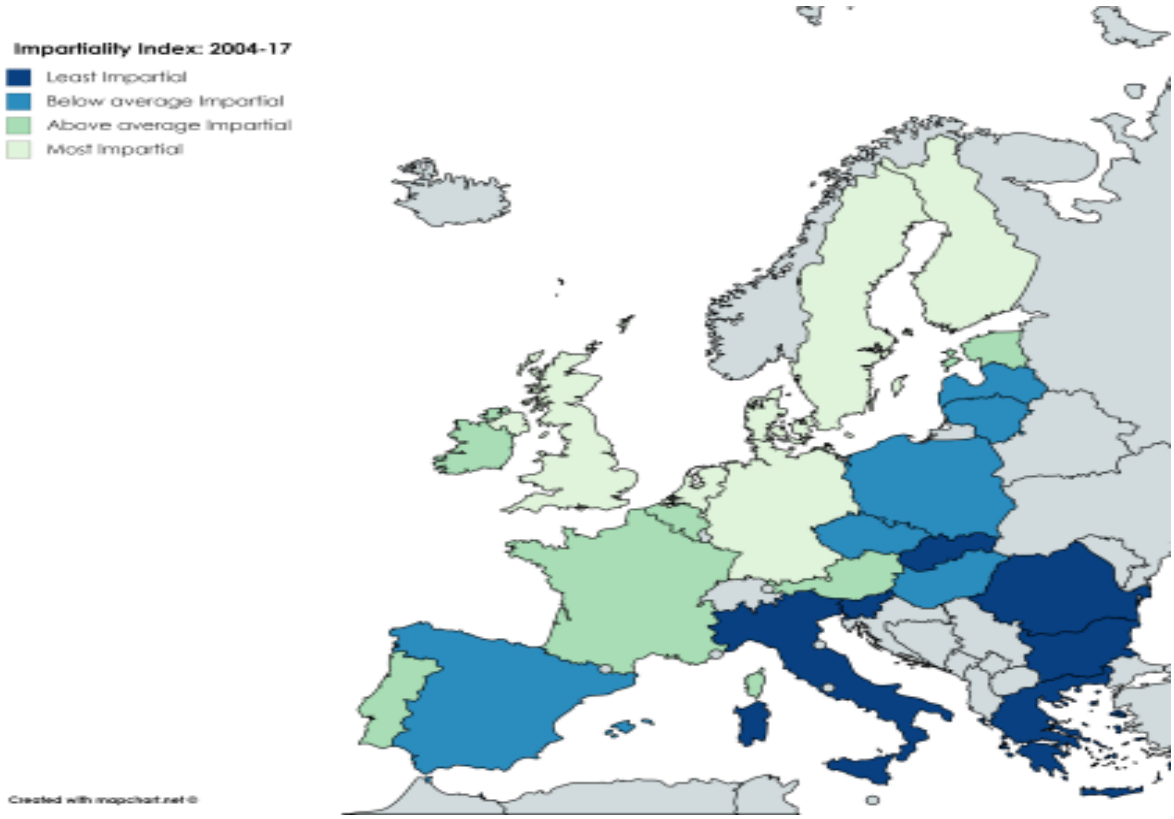


Figure 8. The Quality of Government scores across Europe: a geographical divide?



5. The implications of Greece's institutional divergence from the EU's core

Some readers may be prone to set aside this evidence with a claim that a change of political leadership in Greece has or can remedy the issues stemming from Greece's divergence in performance from the EU's inner core. That would be to give primacy to the role of agency in changing the historical path. Individual leaders can change the situation, as Kalyvas notes in his interpretation that previous prime ministers have shown guile. The argument advanced here does not rest on a proposition that Greece's predicament is irredeemable. The future course is, indeed, still to be made.

Rather, the purpose of this paper is to evidence the strength and depth of the structural problem that Greece faces in bringing the performance of its institutions (the delivery of public goods) into line with EU expectations and norms. The structural problem defines a setting that constrains political action, impacting on priorities and their feasibility. Navigating the constraints to successful remedies will be a daunting task and unlikely to be achieved in a short time-horizon.

It is also relevant to note apparent changes of the public mood. In the 1990s, Simitis and his allies could call for 'modernisation' in the name of Europe – Greece had to meet the challenge of converging with the EU to secure its own future – and this had ready appeal amongst voters. It animated and restructured political opinion. In the present period, the situation has changed. It is not so clear that leveraging domestic reform based on a European narrative would have the same impact. According to the Eurobaromter opinion surveys, since 2010 Greece has had the biggest fall in public support for the EU ever recorded in any country. In the autumn of 2010, some 55% of Greek voters said they had a 'positive image' of the EU. Less than two years later, the proportion was lower than 20%. By 2018, this had recovered to 25%, but it was 17 percentage points lower than even the UK, which had previously voted for 'BREXIT'. By spring 2019, those with a positive image had risen to 33%, well below the EU average of 45% or even the UK figure of 38%. In the most recent Eurobarometer survey, in summer 2020, two-thirds of Greeks 'tended not to trust the EU', a figure only slightly down on the year before and the third lowest figure recorded in the EU. True, in summer 2020, Eurobarometer reported 75% of Greeks supported the 'euro' single currency, the mean score for the EU27. But the juxtaposition of this support against a dramatic fall in those having a positive image of the EU and the two-thirds not trusting the EU suggests a much more instrumentalist (or materialistic) view of the EU than previously. Voters like the EU less, but fear the economic consequences of not having its single currency. The 2010 debt crisis and the austerity measures imposed on Greece by the EU have clearly had their toll on public attitudes towards Europe in Greece. In sum, it is by no means clear that a discourse of domestic reform legitimated by reference to 'Europe' would shift much opinion in Greece, at least in the short-term.

If the EU does proceed to 'deepen' its integration in critical policy areas, this poses a set of strategic issues. Living with the EU's core member states may become more costly for Greece – in how far it can keep in synchronisation with the demands of the new integrating policies – while the option of being outside the deepening process may prove even more costly, in terms of the costs of exclusion. The costs here would depend on the policy areas affected

and how far the process may extend beyond the new European Recovery and Resilience Fund (ERRF). The costs may be difficult to quantify, involving intangibles such as reputations, images, and attitudes. Plausibly, exclusion could impact on private investment flows (inwards and outwards), public investment projects, and pan-EU collaborative networks. Conversely, the intensification of EU integration may pose significant challenges for domestic reform in Greece, involving unprecedented demands for the efficiency and effectiveness of public institutions.

The expected flow of funding to Greece from the ERRF from 2021 onwards may not directly address the endemic problems of the country's public institutions. Indeed, they may expose them further. The strategy of bail-out conditionality imposed on Greece from 2010 onwards was predicated on the external assumption that her institutions could not be relied upon to deliver the necessary structural economic adjustments. Even if Chancellor Merkel had allowed greater funding to flow into Athens, not many Greeks either would have been confident that the money would have been spent wisely, I suspect. This is a problem that combines both political choices and the institutional capacity to deliver public goods. The ERRF will likely have 'light' conditions attached and ensuring its effective impact will be a test for the Greek system. It may be that the previous bailout experience will help in securing the appropriate allocations.

The future political landscape of the EU is uncertain – in the medium term, the departure of Angela Merkel, as German Chancellor, is expected and perhaps the tenure of President Emmanuel Macron may prove not to be secure. The leadership and direction of Europe thereafter is a matter of speculation. But there is a reasonable prospect of the intensification of euro-zone policies – whether more in the vein of Merkel or Macron - with concomitant demands on public institutions to deliver the goods. With existing EU concerns about corruption and the misuse of funds in central and south-eastern Europe, it is not in Greece's strategic interest to be seen alongside the likes of Bulgaria, Romania and others. With a deepening of EU integration, the core EU members may become increasingly selective of those they wish to include in new forms of collaboration.

A further strategic dimension here is the relevance of an external constraint – a 'vincolo esterno' approach of national leaders' hands 'being tied' by international commitments towards a path of reform, overcoming domestic constraints (Dyson and Featherstone, 1999). The notion stems not only from Giavazzi and Pagono (1988) narrowly, but also more broadly from Guido Carli – former Governor of the Banca d'Italia and Finance Minister – in his reflections on his long career in Italian public life. Carli argued that the most significant economic advances in post-war Italy had stemmed directly from the short-termism and sectional interests of domestic politicians being overcome by Italy being obliged to live with major international constraints, such as the Truman Plan and the European Payments Union to the latter day European Monetary System (Carli, 1993). In parallel, the proposition is also relevant in the Greek case. Both the prospect and reality of accession to the European Community in 1981 unleashed wide and substantive pressures for adaptation in Greece, unleashing plentiful studies of its 'Europeanisation' (Ioakimides, 1996). Similarly, Simitis' 'modernisation' project, already referenced above, was predicated on Greece's convergence

with the Maastricht Treaty's convergence criteria for entry into the euro-zone. Such an imperative, in recent decades, may be a better-defined and more salient force than the 'rescues' identified by Kalyvas.

To the extent that Greece is – in the performance of many of its public institutions – a 'misfit' with the EU, optimising its future performance may rest on its inclusion within a closer EU process. In more recent times, evidence to support the proposition comes with the OECD's comparative data on the adjustment and reform performance across countries, reported in Fig. 9. Amongst 14 EU member states for the 2011-14 period, Greece is placed 'top of the class'. Its score is almost double that of the euro-zone. Of course, while the reform progress being benchmarked here was a broad one, the context was of the impact of two successive debt bailouts and their associated reform conditionality. The governments in Athens in this period responded and produced hitherto unprecedented reforms. Extensive reforms were also continued after Greece's Third Adjustment Programme in 2015. The question is not so much whether the reforms were 'enough', but the likelihood of them occurring without the constraints of the debt bail-out programmes and the reforms they mandated, usually very precisely.

Figure 9. OECD Adjustment Progress Indicator and Reform Responsiveness, 2011-14.

The external constraint boosted reform:

Country*	Av. Reform Responsiveness score 0 -1
Greece	**0.81**
Portugal	0.63
Estonia	0.61
Ireland	0.61
Spain	0.55
Finland	0.45
Slovakia	0.45
Austria	0.41
Italy	0.39
France	0.33
Germany	0.26
Netherlands	0.25
Luxembourg	0.18
Belgium	0.17
EZ Average	**0.47**

OECD Adjustment Progress Indicator & Reform Responsiveness, 2011 -14.

The challenge for the EU is how to support the adaptation of its divergent member states; that is, if it opts for a strategy inclusivity alongside its deepening integration. Greece's bail-out programmes brought forth the 'EU Taskforce' of the EU Commission to provide technical assistance on reform in key areas, complementing many bilateral support schemes for Athens. If the 'Troika' was the 'bad cop' of tightening constraints, the latter were the 'soft cop' of encouragement and support. Latterly, the Commission has developed a full-blown 'Directorate General for Structural Reform Support', as from January 2020. It,

> 'coordinates and provides tailor-made technical support to EU countries, in cooperation with the relevant Commission services. The support is notably provided through the Structural Reform Support Programme (SRSP). The objective is to help EU countries build more effective institutions, stronger governance frameworks and efficient public administrations. Such support reinforces the capacity of EU countries to design and implement policies to support job creation and sustainable growth. [See: https://ec.europa.eu/info/departments/structural-reform-support_en#responsibilities].

There are, inevitably, capacity, quality of service, and political sensitivity issues inherent in the Commission providing such support. It is a new terrain for the Commission.

This type of external support may prove especially valuable for Greece. The new DG has its own office in Athens. It may overcome the limitations of a strategy of 'tying hands' of governments to fiscal rules alone, as in the August 2018 agreement Greece signed with the EU. It can also be seen as an improvement on the often-clumsy conditionality of the previous bail-out programmes, that set targets that had been ill-thought out within time frames that were unrealistic to meet in any substantive manner. It is not merely a matter of balancing the 'sticks' and the 'carrots', but of directing reform to make long-lasting gains. Leading by the hand, perhaps, more than tying hands together. The effectiveness of such support in the face of robust domestic forces of inertia will be a matter to be determined.

6. Conclusions

This paper set out to offer an assessment of how well Greece's public institutions – in particular, the state administration – perform in comparison to those of other EU member states. A distinctive empirical focus, in this regard, was on the fulfilment of a set of policy obligations mandated by the EU itself. These obligations ranged across core government functions. They involved different EU policy areas: public procurement rules of the single market; the collection of VAT revenues; and, the absorption of EU structural funding. With these as the policy indicators, Greece was found wanting – with its performance consistently amongst the EU's poorest and, seemingly, part of a south-east Europe syndrome.

A broader assessment of Greece's 'quality of government' was made, following the Rothstein approach on the social autonomy of the state. This directly addressed matters of corruption, favouritism and public trust. The data suggested that Greece approximated Rothstein's

notion of a 'social trap'. Institutions and publics fed on each other in attitudes and practices that undermined institutional impartiality in public administration.

Significantly, the measures of impartiality were found to be closely related to those of policy delivery: the socio-political intrusion on public institutions undermined their functionality. This was more than issues of institutional capacity: rectifying performance necessitates shifting wider social norms. The relationship here was reinforced by the World Bank's data on government effectiveness.

In the context of these indicators, Greece is placed in the 'wrong' company – alongside Bulgaria and Romania, most notably. There is no simple geographical pattern, but that highlighting the divergence of south-east Europe from the rest of the EU is the more striking.

Domestic reform in Greece has often benefitted from an EU imperative – from accession, to euro-currency entry, even to bail-out conditionality. But effective, high-quality reform is most likely to result from an EU embrace that is supportive and long-term. This is a new territory for the EU to manage and a challenging one, given its internal heterogeneity.

Looking to the future – beyond the current pandemic agenda – there is a significant probability that the EU's core member states, led by Germany and France, will seek to extend and deepen EU integration. It is very much in Greece's interests – economically, politically, geo-strategically – that it participates fully in these new endeavours. But such ambitions are placed at risk by the low quality and performance of its domestic public institutions. This is a structural divergence of Greece from the EU's core that goes beyond matters of leadership and voluntarism. Changing political leaders is, in these terms, the easy part. What will tell more are the substantive improvements in institutional performance. With the probability of EU deepening, Greece faces a fresh European challenge with the outcome uncertain. The new ERRF is likely to be its first systemic test.

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Chapter 5. From the twin deficits to new deficiencies: How weak institutions hurt growth prospects in Greece

Nicos Christodoulakis[48]

Abstract

After the 2008 global credit crunch and the subsequent debt crisis in the Euro Area, a series of tough austerity measures were imposed on Greece in exchange for a bailout to avoid an outright default. Although it caused a huge divergence between Greece and its peers in terms of economic developments, a more toxic effect was the collapse of public and economic institutions, ranging from Government effectiveness and political stability to market regulatory quality and the rule of law. Using the World Bank governance indicators as explanatory variables, an empirical growth model is used to calculate the cost of crumbling institutions in Greece in terms of per capita GDP foregone and, thus, explain the sharp divergence in income levels. Alongside macroeconomic stabilization, Greece should urgently focus on improving institutions if a convergence process toward the more developed nations of the Euro Area is to set off again.

Keywords: Euro Area, Growth, Institutions.
JEL: H11, G28, H83, O43

Acknowledgment: Suggestions and comments during a workshop in the Hellenic Observatory at LSE, in the Jean Monnet seminar at AUEB, and the Conference at Tufts University are gratefully acknowledged without implications. Opinions expressed in the article are solely those of the author.

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1. Introduction

Almost all the economies of the Euro Area (EA) suffered severe losses in households' incomes after the global crisis in 2008, though in a highly asymmetric pattern. For the peripheral economies with large external and/or fiscal deficits – such as Greece, Ireland, Portugal, Spain and Cyprus the hit was much more devastating than the rest. Having suffered a sudden stop in credit financing, they were bailed out by the European Union (EU), the European Central Bank (ECB) and the IMF in exchange of harsh programs of fiscal consolidation.[49]

Since the adjustment relied mostly on front-loaded measures, the inevitable consequence was that bailout countries experienced a deep and prolonged recession, thus their prospects of converging toward their EA peers in per capita income severely weakened, while for some it was altogether reversed; see Christodoulakis (2020) for a detailed account. This had a shattering effect on the 'real convergence' process, once considered as the twin pillar of the European project along with the so called 'nominal convergence' among the countries participating in the Economic and Monetary Union (EMU); see EC (1992).

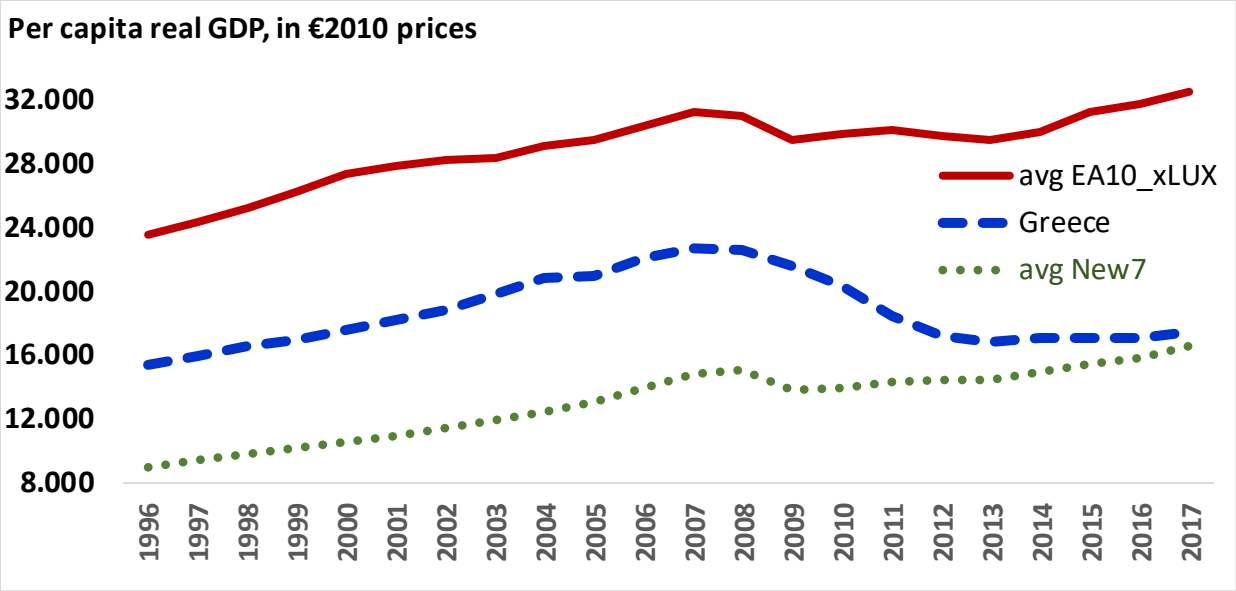
Among the crisis-ridden economies, Greece was by far the most severe case with the twin deficits in Government finances and the external balance rising to record levels as ratios to GDP.[50] Consequently, the size of both the requested bail and the required fiscal correction were of unprecedented proportions too, leading to a deep and prolonged recession. Growth was serially collapsing throughout 2008-2015 and since then remained at levels much below the pre-crisis trajectory.

The fall in per capita income was so devastating that the country not only lost the dynamics of convergence to its EA peers but also seems now as completely disconnected from the group of the initial group of EMU members. As depicted in Fig. 1, it rather comes closer to the new accession countries of Eastern Europe that joined the EMU much later but have since then grown much faster. In contrast, the Greek economy seems to lack any similar dynamism and future growth projections are anemic, as acknowledged, for example, by IMF (2019) noting that '[o]ver the medium term, growth prospects are weighed down by adverse demographics and low productivity'.

[49]. Spain sought a similar arrangement but without the involvement of the IMF.

[50] As noted by Barrios *et al.* (2009), the explosion of sovereign spreads that sparked the European periphery crises took place in countries with large external deficits even if their fiscal position looked healthy. For a relevant discussion, see Christodoulakis (2016).

Figure 1. Per capita GDP paths in Greece and Euro Area subgroups



Note: Subgroup EA10 consists of the initial EA members, except Greece and Luxemburg. The New7 include those joined EU in 2004 and the EA later. Source: Ameco database

Obviously, behind the diversified dynamics of per capita incomes lie asymmetric patterns in GDP growth rates, depicted in Fig. 2. Before the crisis, the new accession countries were growing faster than the older EA members, while Greece kept a rate between the two groups, steadily converging to the most developed economies. In the aftermath of the crisis, both the old and the new groups experienced a temporary fall in GDP growth but quickly recovered afterwards, albeit at a lower rate than before. Greece did not follow the rebound.

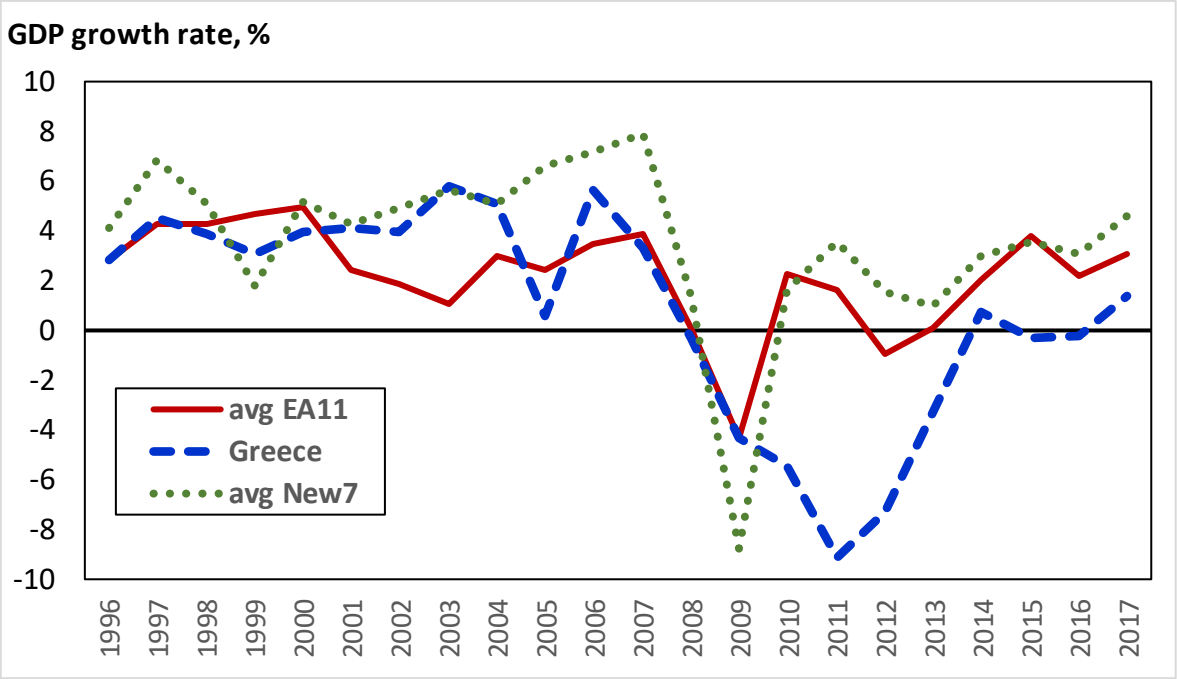
Hence, it is worth exploring which particular factors have caused Greece's unprecedented fall in GDP growth as compared to the much milder effects the same crisis exerted on other EA economies. The economic analysis typically points to differences in one or more of the following areas:

(a) the fiscal position of each country that determines the cost of borrowing,
(b) the patterns of competitiveness that affect external balances,
(c) the types and volumes of investment activity that shape the accumulation of capital and influence future growth.

Developments in each of these fronts had been particularly adverse for Greece and contributed to the post-crisis collapse and prevented the economy to bounce back on a steady growth path. However, the persistence of recession suggests that some other explanatory factors should also be considered to explain the profound and long-lasting impact on growth.

A possible candidate to explain the growth discrepancies is the gap in the quality and effectiveness of institutions operating in the EA group in general, and in Greece in particular.

Figure 2. GDP growth rates in Greece and Euro Area subgroups



Note: As in Fig. 1. Source: Ameco database

Since the founding of the EMU, the expectation was that by removing institutional rigidities and impediments to the efficient use and allocation of production factors would enhance the economic structures of a country, thus facilitating growth. The implementation and functioning of EMU did streamline some key macroeconomic policies and institutions, notably in the monetary and financial sectors to ensure 'nominal convergence' and enhance the credibility of the common currency.

However, in other sectors – such as the labour markets, the tax system or the regulation of markets – progress lagged far behind. Evidence by Diaz et al. (2017) suggests that after 2010 the divergence concerning institutional quality increased. A possible reason is that some degree of a 'reform fatigue' prevailed in several EMU countries after the circulation of the new currency and either delayed - or altogether prevented - further adjustments toward more competitiveness and growth.

The erosion of institutions in Greece has been noticed as a potential explanation of the delay to implement the required fiscal adjustment, and also the reason for the size of the distortions it caused in the economy. For example, Galanos et al (2017) pointed to a number of structural and institutional weaknesses that at best limit – if not altogether undermine - the outcome of corrective policies in Greece. Key among them is the archaic structure of public finances,

the lack of productive investment and the large size of the moonlight economy. Others claim that inferior institutions in Greece lie behind the fact that its economy is lagging so much behind the other members in the Euro Area, even after three successive reform programs. Pagoulatos (2018) finds that the Greek economy "…continues to suffer a weak public administration, slow functioning justice system, low savings, high consumption, small average business size, and a still weak export sector".

In its country report on the occasion of concluding the Third Memorandum of adjustment, OECD (2018) noted that weak and uncertain institutions have systematically undermined economic recovery since the debt crisis in 2010. Social unrest and political upheavals against the bailout programs played a crucial role in making several institutions unworkable and Greece to be drifting apart its Euro Area peers. In turn, this thwarted foreign investment and made market reforms even more confrontational, thus increasing country risk and further undermining economic recovery.

Sometimes, the ineffectiveness of institutions in Greece instead of becoming a centerpiece of policy attention was conveniently targeted to deflect responsibility for program failures. Though the erosion of institutions was noticeable well before the debt crisis in 2010 and – in fact – contributed to making it uncontrollable, the consolidation programs concentrated only on a front-loaded battery of fiscal adjustments, disregarding the risk of institutional malfunctions or reform resistance.

With undue optimism mixed with political *naiveté*, the surveillance authorities were expecting a short period of recession followed by uninterrupted growth thereafter. The IMF report (2010) predicted that "[g]rowth is expected to follow a V-shaped pattern: the frontloaded fiscal contraction in 2010–11 will suppress domestic demand in the short run; but from 2012 onward, confidence effects, regained market access, and comprehensive structural reforms are expected to lead to a growth recovery." Sooner rather than later, such views proved no more than a growth-chimaera as recession deepened and market access was denied to Greece for several more years. Most crucially, public confidence collapsed leading to short-term governments and successive elections. The effectiveness of institutions was badly tarnished, causing further delays in implementing growth-oriented reforms and making Greece to pay a high price for neglecting their importance in shaping economic policy.

Eventually, Blanchard and Leigh (2013) officially withdrew the above simplistic views on behalf of the Fund. Naturally, the next step should then be to include institutional reforms in subsequent programs, as a means to avoid the disappointments of the first one to appear again. However, as the Chief of the IMF mission in Greece openly admitted in a posterior account of the programs, 'the deeper-than-expected recession [of the first program] forced significant additional fiscal measures from 2011'; see Thomsen (2019). But rather than admitting that the main culprit was the intensity of consolidation and the neglect of improving the relevant mechanisms in decision-making, he solely blamed 'the fundamental weaknesses of the Greek political system, its economic policy-making institutions and the power of vested

interests', (*ibid*). No surprise then that a vicious cycle of recession and austerity took off and continued for several years.

Hence, the assumption investigated in this paper is that by including developments in key institutions in Greece in the post-EMU era might help to more adequately explain the abysmal fall in economic growth after the crisis and the inability to take off again. In GDP terms, the cost inflicted on the economy turns to be so high that improving institutions and raising efficiency in the decision-making process becomes a major policy priority, if the convergence process between Greece and its EA peers is to return.

The rest of the paper reads as follows. Section 2 briefly discusses the role of institutions on economic growth. Section 3 describes the data measuring their quality and effectiveness in various countries. It also highlights the most popular criticism in using institutional data and suggests ways to mitigate their shortcomings. Section 4 discusses multiple episodes in crisis-ridden Greece that might explain the deterioration of institutions and its inability to accelerate recovery. Employing an econometric model estimated for the Euro Area countries without Greece, Section 5 describes a counterfactual scenario by assuming no deterioration in Greek institutions. This offers a measure in GDP terms of the cost caused by the crumbling institutions, while Section 6 discusses the main conclusions.

2. Growth and institutions

The hypothesis that institutions play a vital role in explaining economic developments in a particular country, as well as cross-country differences in economic performance, goes back in history to the origin of economics; for a concise examination see Acemoglou et al. (2005), with extensive empirical research over different countries and historical periods. An extensive analysis in the Euro Area was recently conducted by Masuch et al. (2018). All studies agree that low-quality or malfunctioning institutions may cause a significant loss of social welfare, in the short or the longer run. Most common channels through which growth is eroded are considered to be the following:

(a). Inefficient institutions create opportunities for rent-seeking activities by pressure groups at the expense of competitive markets and consumers;

(b). Lengthy and cumbersome procedures in socioeconomic institutions raise transaction costs, fuel uncertainty, and increase risks. This may jeopardize investment projects and infrastructures, and thus lowers the provision of public goods and services.

(c). Higher transaction costs distort the intertemporal allocation of resources between investment and consumption and between long-term and short-term investments.

Therefore, by adopting a quantitative measure of institutions' quality and efficiency, one could empirically estimate the effect they exert on economic growth. A crucial issue in the empirical applications is the availability of appropriate and sufficient data for the quality of institutions and their measurable interactions with economic performance. In several cases, the problem intensifies by the difficulty of disentangling their causal effects in cross-country estimations with few observations.

The systematic compilation of Governance indicators by the World Bank (WB) since 1996 has led to a plethora of quantitative research examining if and how institutions affect economic performance in various countries and country groups. For example, in an IMF study on developing countries, MacFarlan *et al.* (2013) find that institutions measured by the World Bank index significantly affect per capita GDP. Hence, they conclude that the effort of improving functionality and quality of institutions pays off quickly and should become a priority in growth-promoting policies.

Institutions may also affect economic performance in a more general way as their adequacy and credibility may play a crucial role in a country's assessment and rating by foreign investors. To that effect, Fournier and Bétin (2018) establish that the measure of Government Effectiveness as recorded by the World Bank is a critical determinant of ascribing sovereign default probabilities in third-world countries, on top of more traditional indicators of indebtedness and deficits. The main argument behind such reasoning is that Governments that are more effective tend to be more credible in their commitments to international lenders. Investors are eager to view such governments as more likely to spur growth and regularly repay debt, thus reducing the default risk compared with other similarly indebted countries with an inferior institutional framework.

Studies based on the same WB data series have also tried to explain the discrepancies in the European economies' growth in the context of the recent debt crisis. In a study conducted by the ECB, Masuch et al. (2016) find that initial conditions of institutions and the level of public debt can help to explain the different patterns average real GDP growth in Europe during the last 20 years, which, in turn, are responsible for the real convergence lagging so far behind.

3. Data and shortcomings

3.1. Data series

The World Bank publishes six governance indicators (WBGI, for short) at an annual frequency. According to Kaufmann *et al.* (2011), the first two indicators qualify the process by which governments are selected and monitored. The next two measure the capacity of governments to effectively formulate and implement sound policies. The final two show the respect of

citizens and the state for the institutions that govern economic and social interactions. The indicators are the following:

1. Voice and accountability (VACC, in short) – capturing perceptions of the extent to which a country's citizens can participate in selecting and assessing their Government and freedom of expression, association, and press media.
2. Political stability and absence of violence/terrorism (PSAV) – capturing perceptions of the likelihood that the political system will survive in the face of fragile governments, partisan challenges, an eventual power vacuum or extensive protests, including politically motivated violence and terrorism.
3. Government effectiveness (GEFF) – capturing perceptions about the quality of public goods and services, the readiness of civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of Government's commitment to such policies.
4. Regulatory quality (REGQ) – capturing perceptions of the Government's ability to formulate and implement sound policies and regulations that permit and promote private sector activities and developments.
5. The rule of law (RLAW) – capturing perceptions of the extent to which agents have confidence in, and abide by, the legal provisions of the society and, in particular, the quality of contract enforcement, property rights, the police, the functioning of courts, as well as the frequency and intensity of crime and violence.
6. Control of corruption (CCOR) – encompassing perceptions of how effectively malpractices, including both petty and grand forms of corruption, are checked and avoid the 'capturing' of the state by elites and private interests.

3.2. Criticism

The six WBGI indicators take values in the interval [-2, +2], determined by each country's position relative to the others. As Kaufmann *et al.* (2011) note, a key feature of such a choice of units is that the world average remains the same in each year. The implication is that indicators are meaningfully to compare countries' relative positions in a given year and relative positions over time but not informed about trends. However, by reviewing the original time series over the several past updates of the WGI, there is very little evidence of trends in global averages of the underlying data sources. Moreover, fixing the global mean to equal zero does not prevent the analysis of trends in regional or other group averages of countries. In addition, it does not seem unreasonable to keep the global mean constant, since changes in countries' relative positions are unlikely to be very different from changes over time in countries' absolute positions.

Nevertheless, the WB indicators are not immune from caution regarding their completeness and suitability in assessing the quality of institutions. The most popular criticisms are summarized and commented below:

(i) *Subjectivity:* All the WB indicators are compiled through a combination of perceptions based on measurable performance and judgemental values. Information on the former may not be complete, and judgments may be preoccupied with previous developments.

(ii) *Observability:* An actual development in improving individual institutions may not be promptly taken into account by those expressing their perceptions in the WB surveys.

(iii) *Completeness:* The WB indicators may only partially reflect the quality or cover the institutions' scope relevant to growth. Other international organizations, such as the OECD, the World Economic Forum, the Euro-Barometer, etc., produce indicators that might be used.

(iv) *Cross-correlation*: The six WB indicators are not independent of each other but somewhat mutually influenced. This is reasonable since high standards in one area of state functions are likely to affect other institutions in a similar way. As shown in Table 1, all cross-correlations among the six WBGI data series for the Euro Area are high and positive.

(v) *Causality:* Another shortcoming in using WB indicators as explanatory variables for growth is the direction of causality between them. The central assumption is that better (worse) institutions improve (reduce) per capita GDP in each country. Still, it may also be the case that institutions get better or deteriorate according to the overall economic performance.

Table 1. Cross-correlations of WB governance indicators

	PSAV	CCOR	RLAW	VACC	GEFF	REGQ
PSAV	1					
CCOR	0.67	1				
RLAW	0.67	0.95	1			
VACC	0.72	0.89	0.87	1		
GEFF	0.64	0.92	0.91	0.84	1	
REGQ	0.66	0.89	0.89	0.87	0.83	1

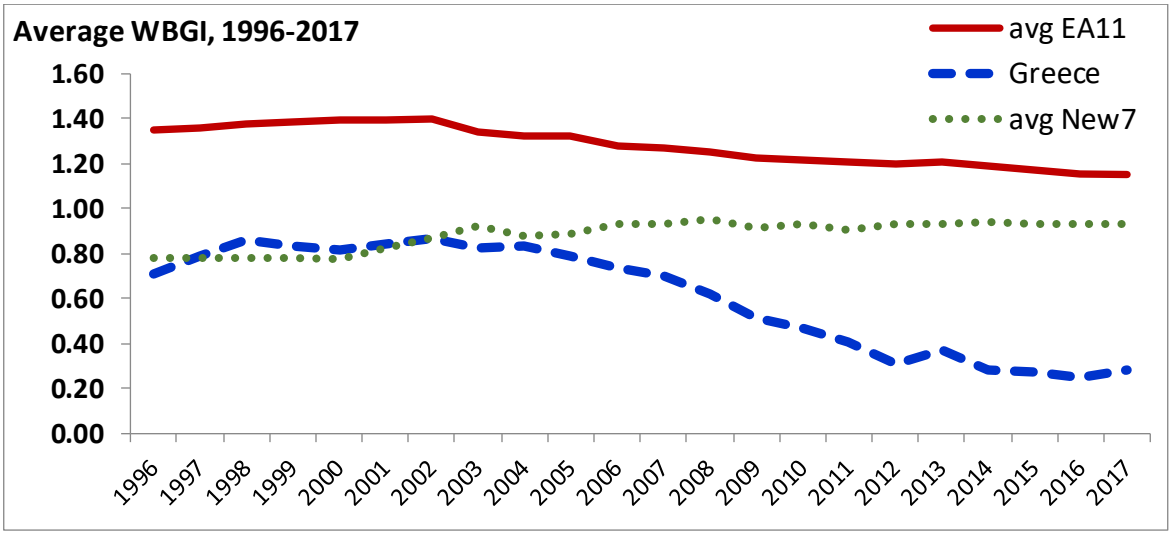
Note: Definitions as in Section 3. Source: World Bank

3.3. Response

The reason for preferring the WB indicators to alternatives is that they are used widely in the literature, making the results comparable with other studies. By spanning a reasonably long period from 1996 to date, they allow panel estimations to be meaningful by avoiding the problem of causal effects as mentioned by Docquier (2014) for cross-country studies each with few observations. To simplify the calculations and also avoid cross-correlation of the separate indicators, a weighted average is constructed through principal component analysis.

The rest of the criticism is partly alleviated by comparing WBGI data with other direct measurements of institutional practices and checking that they are mutually compatible. For example, an improvement in the Rule of Law is detected alongside an actual fall of the crime rate. Similarly, a deterioration of PSAV is recorded after a prolonged period of weak governability, due – for example – to successive elections or disagreements on government formation, and so on.

Figure 3. Quality of institutions in Greece and Euro Area subgroups



Note: As in Fig. 1. Source: Ameco database

4. The crumbling of institutions in Greece

Focusing on the role of institutions in explaining the path of economic growth looks particularly relevant for Greece. Fig. 3 shows how the WBGI indicators evolved on average during the last twenty years in the older EA members (excluding Greece) and the new accession countries. It is remarkable how markedly the latter group improved institutions, thus achieving a robust performance in GDP growth and speeding up convergence to the Euro

Area peers both before and after the global crisis. In contrast, post-crisis Greece appears to have suffered the most pronounced deterioration in institutional capacity compared with either group in the Euro Area. Although the decline in certain socioeconomic and political developments was noticeable before 2008, it further intensified since the crisis. There have been severe consequences on the functioning of the economy and, ultimately, its capacity to recover.

No wonder that institutional failure in Greece coincided with a collapse in investment activity and an explosive rise in indebtedness, both of them eroding GDP growth. However, a more systematic analysis of the facts that led to the demise of institutions might prove cumbersome or outright impossible, given the perceptional nature of WBGI indicators and the lack of knowledge on how they are compiled.

The crumbling of both the economic growth and trust in institutions was painfully experienced during the crisis, although not always recognised and by the surveillance authorities. Making the improvement of institutions a policy priority started to enter the policy agenda after the Greek economy appeared to be lagging behind the other bail-out countries in restoring growth and exiting the adjustment programs. The quality of institutions became a central reference in the public debate. For example, a corporate report by PWC (2015) argued that deterioration of both during the last decade Greece had reached such a crucial point, where any further weakening of institutions may lead to large and substantial loss of wealth and prosperity. In a sequel, PWC (2017) repeated that building trust in political processes and institutions is the cornerstone of economic growth.

Of course, an analytic account of how the socioeconomic process influences institutions' perceptions is not possible. A substitute is perhaps the vast anecdotal evidence of Greece's institutional failures and the consequences they had on growth collapsing. A non-exhaustive list of institutional drawbacks in Greece in the course of the crisis is shown in Table 2 and briefly described below:

(i). Perhaps the most critical development was the post-crisis erosion of political stability (indicator PSAV). As successive governments were trying to enact the austerity measures dictated by the bailout agreements, they faced internal political revolts to an unprecedented extent and in open disagreement with their pre-electoral pledges. Schmidt (2015) noted that the citizens' response to such perceived disenfranchisement has been to punish the ruling parties with *'blows of growing frequency and intensity'*, leading to shorter life cycles of incumbent governments. Due to the continuous social and partisan protests all over Greece, the two mainstream political parties shrank dramatically after decades of occupying more than 80% of the electorate. Soon, anti-systemic movements and new party formations growing at both ends of the political spectrum held their place.

A discussion of disintegration dynamics in Greek politics is found in, among others, Vasilopoulou (2018) for the rise of Eurosceptic politics; Roumanias *et al.* (2020) for the far-right formations; Milios (2016) for the political consolidation of the radical left. Party disintegration led to more frequent elections and government reshuffles, thus complicating decision making and raising the political risk. To indicate how remarkable the change was, it suffices to say that in the period 2008-2017, there have been seven prime ministers and ten ministers of finance, as opposed to two and three respectively the decade before. According to a country risk analysis, Greece in 2017 scored the highest degree of political uncertainty at 5.0 points versus an EU average of 1.6 points.[51]

Table 2. Key areas of institutional deterioration in Greece

Areas of concern (and affected WBGI)	Pre-crisis	Post-crisis	Compare
(a) Property crime *RLAW, GEFF*	1998-2008	2009-2017	
Burglaries	*51,062*	*79,581*	*+56%*
Car thefts	*20,188*	*28,694*	*+42%*
Armed robberies	*2,219*	*5,051*	*+128%*
(b) Serving special interests *RLAW, CCOR, VACC*	*2002-2008*	*2009-2015*	
Number of transitional provisions	150	232	*+55%*
Number of amendments, % Laws	15%	17%	*+ 2 p.u.*
(c) Litigious civil & commercial disputes *REGQ*	*2010*	*2016*	
Time to settle cases	*190 days*	*640 days*	*+237%*
(d) Non-Performing Loans, *GEFF, REGQ*	*2010*	*2017*	
As % of total Gross Loans, Greece	*9.12%*	*45.57%*	*+36.5 pu*
Euro area	*5.60%*	*3.20%*	*-2.4 pu*
***(e)* Strikes** *PSAV, VACC*	*2010*	*2011-2014*	
General actions	*2*	*10*	*+8*
Industry level	*0*	*28*	*+28*
***(f)* Political stability** *PSAV, GEFF*	*1998-2008*	*2009-2017*	
Number of general elections	*3*	*5*	*+2*
Number of Finance ministers	*3*	*10*	*+7*
Number of Prime ministers	*2*	*6*	*+4*

Note: Periods before and after the crisis may differ.

[51] Source: https://www.credendo.com/country-risk/greece

Sources: (a) Greek Police, ELAS (2018). Aggregate crime data, various years.
(b) Sotiropoulos and Christopoulos (2016).
(c) The 2018 EU Justice Scoreboard: Quantitative Data. Brussels, May.
(d) World Bank, 2018.
(e) Katsikas et al. (2018).
(f) Incl. caretaker Governments, Wikipedia.

(ii). Concurrent to the front-loaded implementation of austerity measures was a rise in public disputes that deeply tarnished the perception of equity in applying the rule of law, (indicator RLAW). For example, households' inability to meet financial obligations multiplied disputes with banks and other public agencies and led to massive payment refusals and litigations. This caused long delays in dispute resolution and led to an overwhelming feeling that the arbitration system or even the judiciary is inefficient. As documented in EC (2018, Fig. 4), Greece is now the country among the EU with the most prolonged interval for a litigation case to conclude. Furthermore, it is the only one where the length of time to complete increased sharply since 2010. At the beginning of the crisis, on average, 190 days were required to settle civil or commercial litigations. Nevertheless, in 2016, the period required rose to 670 days, nearly three times longer in comparison with the average of 236 days in the other Euro Area countries.[52] Regarding the economy as a whole, the enforcement of contracts remains weak, and the relevant indicator in Greece is now the lowest among the developed countries, as documented in a recent report by OECD (2018, Fig. 42).

The lack of a quick resolution process in financial disputes exerts a definite cost in the economy's functioning, mainly in the banking sector. In combination with ineffective Government regulations and other bank governance problems, it has led Non-Performing-Loans (NPL) to reach dangerous levels, currently occupying nearly half of total credit in the economy. Loan restructuring and foreclosure proceedings are unusually slow compared to most OECD countries, despite the fact the legal regime has somewhat improved since 2010; (*OECD, 2018*). Compared with the Euro Area record, the pre-crisis Greek NPL burden was less than twofold of the EA ratio to total credit but then rose to more than 14-fold, asphyxiating the credit system, hurting Banks' solvency, and tying the economy on a low-growth path.

An even worse deterioration concerns the provision of social services, as extensive spending cuts in the public sector, led to inadequate infrastructure and shorter working schedules, including policing and public safety. Hence, the crime rate against property rose sharply, feeding a broader disappointment on the state's functioning when it is most needed. The far right was quick enough to exploit the vacuum by organizing *vigilante* groups in the more

[52] Calculations based on EC (2018, Fig. 7, p 3). Data for Belgium, Cyprus, and Ireland are non-available.

impoverished areas of big cities, thus provoking further clashes and violence with other activist groups.

(iii). Regarding economic efficiency, the regulatory quality markedly diminished during the crisis (indicator REGQ). Although a critical condition for post-crisis Greece to resume growth was to implement extensive market reforms, affected groups confronted most initiatives with such resistance, which made several of them turn down. As a result, Greece's product markets continue to have the most sclerotic regulation among the OECD countries, as described by Katsoulacos *et al.* (2015). In explaining the inability of the bailout program to mobilize the business sector and spurn growth, Christodoulakis (2017) has argued that the lack of institutional credibility prevents the realization of reforms and deters foreign investors.

(iv). Government effectiveness was severely criticized on the issue of equally distributing the burden sharing of fiscal adjustment (indicator GEFF). Taking advantage of their success in resisting reforms as discussed above, stakes in various sectors managed to alleviate part of their own cost and shift the burden elsewhere. An IMF Mission (2016) noted that, in the absence of product-market reform implementation, the cost of adjustment in Greece had been borne mainly by wage earners. In turn, this sparked a wave of resistance to wage-cuts and labour market reforms, leading to a sharp rise of industrial action against the implementation of consolidation programs, after many years in dormant. Katsikas et al. (2018, p. 147) report that in 2013 there have been 16 general strikes and 51 industry-level picketing against a total of only two in 2010.

A collateral damage of wage cuts and diminished work incentives was the decline in the quality of public management. In some cases, civil services became so demoralized that performance deteriorated, no matter how adequately a department was equipped at a technical level. A case in point is the lack of effectiveness in combating wildfires, bleakly confirmed by the high human toll in the Attiki fires in July 2018. A study by PWC (2018) revealed that Greece suffers a far more extensive area burnt on average compared to other Southern European countries with similar distributions of wildfires. Given that fire-fighting equipment and personnel training are at the same state-of-the-art, the unfortunate outcome should be mainly attributed to coordination failures and lack of effectiveness.

(v). Control of corruption (indicator CCOR) is positively associated with the capacity to innovate and retain talent in a country (OECD, 2018). The index is perceived to deteriorate since the crisis's outbreak, and this might have been detrimental for long-term economic growth. A definite reason for a fall in CCOR was that the exposure of several financial scandals of the past made the public opinion to suspect that sleazy practices dominate Greek politics to an extent much more extensive than previously imagined.

Another reason was that citizens and economic players were increasingly disturbed by discovering that rules enforced in the name of the bailout agreements frequently bend in favour of particular groups, even though the elimination of such practices was a priority in

the consolidation program. However, instead of being diminished, special-groups and clientelistic arrangements were multiplied after the crisis. Transitional and case-specific provisions in law-making increased from 150 per year during 2002-2008 to 232 per year in the post-crisis period 2009-2015, as documented by Sotiropoulos and Christopoulos (2016). A likely explanation is that Governments tried to protect their most favourite groups from the consequences of fiscal consolidation, hoping that their impact on their falling popularity would be softer. Ordinary citizens felt marginalized and exploited by the pressure groups, and this created a profound disappointment for the lack of transparency and equity of laws, raising the relevant index.[53]

The enormous rise in taxation provided further motivation for evasion. As the burden was ever-rising to ensure the high primary surplus required by the bailout program, several households and firms panicked for not meeting obligations in time. To avoid further political backlash, Greek governments introduced various schemes of payment facilitation to reduce pressure on the lowest-income households and firms. But as the system operates on a means-tested basis, it opens up opportunities for corruption through false income statements and tax avoidance, increasing distortions in the economy. The state's inefficient management of economic affairs amounted to a corruption-like tax on all firms operating in the formal sector. Nobel-Prize winner Paul Romer (2018) argues that this had been especially troublesome for start-ups and foreign firms that would like to invest in Greece.

(vi). There have been some severe blows in the voice and accountability record, in the course of implementing the bailout programs (indicator VACC). In passing the extensive and complicated bailout legislation, governments frequently had to enact laws without prior consultation with competent and independent authorities. Often, they bypassed the parliamentary procedure altogether and ruled through legislative fiats. Various groups further exploited the resulting ambiguities and lack of formalism in law making in their plans to block or challenge government decisions.

Massive litigations on salary and pension cuts by now have become a frequent judicial practice, undertaken either directly by individuals or as a class action. In several cases, the incomes policy crafted in the annual Budget for the public sector is overturned by court decisions, mostly retroactively. Other disputes may range from the calculation of pensions to the pricing of public utilities, and from investment subsidies to building permissions. Greece has become a country with the highest rate of disputes *vs*. the state among the EU. In 2016, there were 22 pending administrative disputes per 1,000 inhabitants in Greece compared to an average of 3.7 in the rest of the Euro Area; see EC (2018, Fig. 17). In several cases, such practices led higher courts to th cancel legislation, eventually setting in motion a vicious circle of law-enactment and counter-challenges.

[53]. Ancient Greek orator and philosopher Isocrates, speaking on malpractices in public life during the fourth century BCE, had warned that 'a multitude of case-specific laws … is a sign that the state is badly governed', in *Aeropagiticus* (42-43).

5. Calculating the cost

5.1. The empirical growth model

With all the caveats described in Section 3, an empirical growth model has been estimated in a framework similar to that developed by Barro & Sala-i-Martin (1995, Ch. 12). Intrinsically, their model is a production function for output based on capital stock, employment and technology. The growth rate of per capita GDP is regressed on a set of variables that are expected to influence the accumulation of the relevant production factors. Explanatory variables range from the fiscal stance to competitiveness indicators and from quality indices of human capital to institutional factors, such as political stability. The choice includes the following explanatory variables:

- The growth rate of the global economy outside the Euro Area.
- Net fixed capital formation as a percent of GDP.
- General Government primary balance, as a percent of GDP.
- Index of unit labour cost in constant prices (set equal to 100 in 2000).
- A weighted average of World Bank Governance Indicators

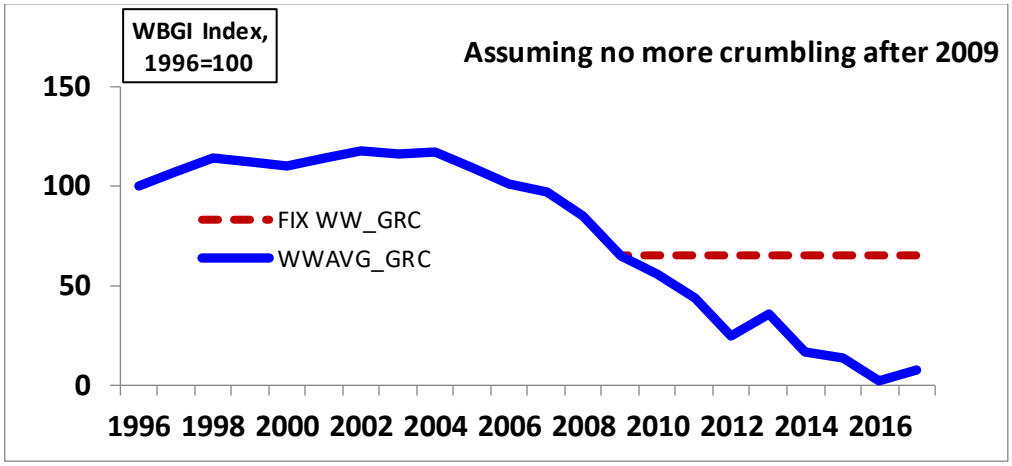
The model is estimated across the 18 EA countries, excluding Greece's data from the Euro Area group so as to avoid outlier effects; econometric details are available at Christodoulakis (2019).

A weighted index of WBGI is found to exert a significant and positive impact, again in both the short and the long run. The EA average value of the WBGI is 1.20; thus, a 10% improvement corresponds to a rise by 0.12 units in absolute terms. This would augment the annual growth rate by 0.63% in the short run and by 0.39% in the long run. Thus, the economic impact of failed institutions in Greece is then measured by constructing a counterfactual scenario for the growth path in the hypothetical case of no erosion in institutional effectiveness after the 2010 crisis.

5.2. Assessing the impact of institutions in Greece

To assess the loss due to the erosion of institutional capacity after 2009, one has to assume that the World Bank indicators for Greece freeze at the level of that year, i.e., $wbgi^{GR}(t) = wbgi^{GR}(2008), t = 2009 \ldots 2017$, as shown in Fig. 4. The other explanatory variables enter with their historical values, and the hypothetical per capita GDP is obtained for the period 2009-2017.

Figure 4. Actual and hypothetical path of WBGI in Greece



Note: The WBGI adjusted to base index 100 in 1996.

The benefit from keeping institutions stable is expressed by the difference between the hypothetical and the dynamically forecasted trajectory of per capita GDP for the period 2010-2017, as shown by the shaded area in Fig. 5. The following remarks are made:

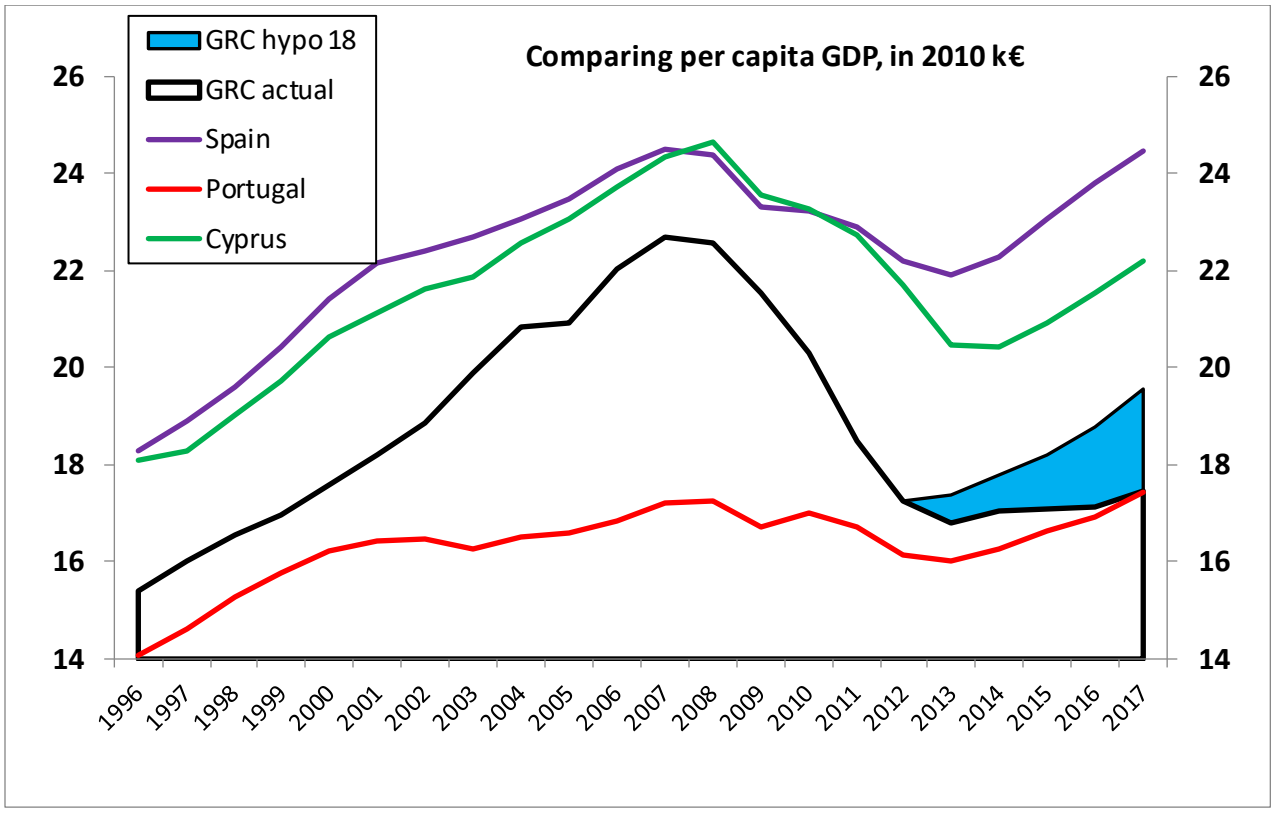
(i) In 2017, GDP per head would have been €1,435 or 8.2% above the actual level. The gap will keep widening in the coming years.

(ii) Total GDP would have reached €192 billion, a rise by €15 billion higher than the level it had in 2017.

(iii) The cumulative loss in present value for the period 2009-2017 is obtained by setting the discount rate at 5% per year. Cumulative output losses for 2010-2018 are at the tune of €44 billion in 2010 prices or around 18% of 2009 GDP.

For comparison, the per capita GDP of other peripheral EA countries is also included. In the case of no-erosion in institutions, the pattern of Greek GDP recovery would have looked much more similar to other peripheral economies' trajectories, rather than being trapped in stagnation.

Figure 5. Path of per capita GDP in peripheral EA economies



Source: Historical values by Ameco data. Dynamic forecasts by the author.

6. Conclusions

After the financial crisis, the convergence process of per capita GDP between Greece and its Euro Area peers had been sharply reversed into divergence. The paper finds that – besides the deterioration of relevant macroeconomic variables – there has been an extensive malfunction of institutions that further slowed growth and undermined economic recovery. Greece appears as a country simultaneously experiencing the most severe recession after the global crisis and the most pronounced fall in all World Bank Governance Indicators. The crumbling of institutions accelerated at the advent of the crisis. It may partly explain the inability of the consolidation programs to implement reforms and speed the exit from recession.

To assess the cost of weak institutions in terms of economic growth, a counterfactual path of per capita GDP is calculated for Greece on the hypothetical assumption that institutions had avoided any deterioration after the 2010 crisis. The comparison shows that in 2017, GDP per head would have been €1,435 higher than or 8% above the actual level, and the gap widens ever since.

These findings should enter the policy debate regarding economic recovery in Greece. With growth lagging behind its Euro Area peers, the need to address the effectiveness of institutions becomes all the more critical in the post-bailout era. Otherwise, Greece will further diverge in the future. To that effect, the bailout lenders have issued a series of warnings. In a recent statement, the IMF (2018) foresees that Greece's growth rate will drop sharply after a short-lived rebound as *"risks are tilted to the downside*." In the same tune, the EU attributes the slowness of Greece's growth to the resistance in implementing reforms and suggests *"delays for several specific reform commitments … to be addressed with urgency to ensure that all are completed as soon as possible".*

The following examples give a tentative and non-exhaustive list of actions that are capable of improving each particular indicator:

The Rule of Law requires higher judicial effectiveness, law rationalization and simplification, and better enforcement. Political stability and avoidance of violence would benefit from a stabler electoral system producing clear governing majorities and favouring consensual politics. To cancel the obligation of going to the polls after the parliament fails to secure an enhanced quorum, choosing a new President of the Republic through a simple majority should be drafted in the Constitution.

Achieving a higher regulatory quality requires that governments have to enact market reforms, strengthen competition authorities, and make regulations binding for all participants. Voice and accountability improve by regularly publishing policy assessments, easing public inquiries and auditing on controversial policy issues, and facilitating citizens' feedback on the consequences of law enactment. Controls of corruption strengthen if governments follow stable rules on procurement, raise transparency in public contracts, and impose effective sanctions on offenders. Reform of corporate governance is also necessary to respond to the rising frequency of private-sector scandals and malpractices. Overall effectiveness improves by the Government and public agencies adopting a lean structure with fewer decision layers while following best practices to the maximum extent possible.

Future research will address the problem of how institutional convergence should be implemented and monitored within the framework of the other two policy directives, namely those of the *Fiscal Compact* and the *Next Generation EU* currently underway in the Euro Area and the European Union, respectively.

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Chapter 6. The Greek great depression 2009-2016 and the role played by the ECB*

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Abstract

The aim of this non-technical paper is threefold. We first shed light on some data that have not received enough attention by the literature but, we believe, are crucial to the understanding of the Greek great depression over 2009-2016. Second, borrowing results from Economides et al. (2020), we identify the driving forces of the output loss during those years, as well as the role of various EU institutions, including the ECB, in the financial assistance program. Third, we draw some macroeconomic policy lessons that could be useful in the new crisis triggered by the covid-19 pandemic.

JEL classification: O4, H6, E02.

Keywords: Growth, macroeconomic policy, institutions.

* This non-technical paper draws on results from a paper by GE and AP, jointly with Dimitris Papageorgiou, forthcoming in Open Economies Review. We thank G. Alogoskoufis, H.-W. Sinn, G. Tavlas and P. Tsakloglou for comments and discussions. We thank seminar participants at the European Central Bank, the conference on Greece and the Euro at Fletcher School Tufts University and the Hellenic Observatory of the LSE. We have benefited from discussions and joint work with T. Christou, D. Papageorgiou and V. Vassilatos. GE and AP are grateful to the Hellenic Observatory of the LSE for financial support of a project on "Economic growth in Greece: Barriers and prospects"; this paper is a by-product of this project. Any errors are our own.

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1. Introduction

Between 2009 and 2016, Greece lost more than one fourth of its GDP experiencing a typical great depression.[54] It also had to rely on a number of official and unofficial programs of international financial assistance provided in various forms by EU institutions (ESM, ECB, etc.) and the IMF; as a result of these bailout programs, around 70% of Greek public debt is nowadays owned by these public institutions. Although GDP growth managed to rebound in 2017, the recovery was fragile (driven mainly by net exports and private consumption) even before the eruption of the new economic crisis triggered by the covid-19 pandemic in early 2020.

The aim of this non-technical paper is threefold.[55] First, we shed light on some data that have not received enough attention by the literature, but we believe are crucial to the understanding of the depth and duration of the Greek sovereign debt crisis and the associated great depression. Second, borrowing results from Economides et al (2020), we discuss the driving forces of the output loss during 2009-2016. What explains the Greek great depression? Could things be better? Could things be worse? What was the role of EU institutions and the ECB in particular? Third, we draw some macroeconomic policy lessons that could be useful in the new economic crisis triggered by the covid-19 pandemic.

Let us start with a brief history of the crisis. The Greek sovereign debt crisis had all the symptoms of a typical international crisis. Greece was already in imbalance when the global financial crisis erupted in 2007-8. From the late 1990s to 2008, the country enjoyed an exceptional economic boom. But most of the euphoria was driven by a big rise in private demand and pro-cyclical fiscal policies, both of which were financed by borrowing from optimistic banks in Greece and Northern Europe. The demand-driven boom led to accumulation of large (private, public and external) debts. It also led to rises in unit labor costs and hence to losses in competitiveness. In addition, Greece displayed a big asymmetry in core institutional fundamentals relative to its EU partners.[56] Then, in 2009, amid an unfavorable national and international environment (e.g. the "sudden" recognition of the above imbalances, unpleasant news about the country's public finances, big riots in Athens in December 2008 combined with political polarization, the release of reports by the European Commission and rating agencies expressing fears of sovereign insolvency, and of course the adverse effects of the global financial crisis), confidence was undermined, the real economic activity collapsed, debts-to-GDP exploded, and all this became a vicious cycle. Greece, along

[54] For great depressions, see Kehoe and Prescott (2002).

[55] For the Greek tragedy, see e.g. Ioannides and Pissarides (2015), De Grauwe (2016), Alesina et al (2019, chapter 8), Brunnermeier and Reis (2019), Alogoskoufis (2019) and Tavlas (2019). See also the papers in the volumes edited by Meghir et al (2017) and Bournakis et al (2017). Micro-founded macroeconomic models include Arellano and Bai (2016), Gourinchas et al (2017), Papageorgiou and Vourvachaki (2017), Dellas et al (2017), Economides et al (2017, 2020), Glomm et al (2018) and Chodorow-Reich et al (2019). For econometric studies, see e.g. Gibson et al (2016, 2019) and Moessner (2018).

[56] In Greece, weak institutions are captured by various indices measuring the poor enforcement of the law, an inefficient public administration, a labyrinth of bureaucracy, a slow judicial system, a poor environment for doing business, laws and regulations that limit market competition, tax evasion, poor education (PISA) scores, vandalism and violence, etc. For institutional quality in Greece relative to other EU countries, see e.g. Masuch et al (2018), Kollintzas et al (2018) and Christou et al (2020). See section 2.3 below for data.

with Ireland and Portugal, was shut out from private capital markets and the Greek government had to resort to its first official fiscal bailout provided by the EU and the IMF in early 2010. But, the fear of default rose again, insolvency was admitted and, in 2012, the Greek government defaulted on its debt held by private creditors. But, again this was not enough. Greece had to receive two more official fiscal rescue loans provided by other EU states, EU fiscal institutions (EFSF, EFSM, ESM) and the IMF in 2012 and 2015. At the same time, and this has been since the very beginning of the global financial crisis, the ECB kept providing a plethora of supportive quantitative monetary policies: intervention in the secondary market for Greek government bonds; support of private banks through a full allotment lending policy, relaxation of collateral requirements and provision of ELA; issuance of cross-border liquidity that compensated for abrupt private capital inflows and recorded as TARGET2 liabilities in the financial statements of the Greek National Central Bank; etc. This complex fiscal and monetary assistance program was conditioned on a severe fiscal austerity program monitored by the EC, the ECB and the IMF (the so-called Troika). Although the real motives behind the financial assistance program, as well as the rationale of severe fiscal austerity in the middle of a deep economic downturn, have been extensively criticized (see e.g. Alesina et al. (2019, chapter 8)), this so-called Economic Adjustment Program, combining austerity (stick) and assistance (carrot), enabled Greece to remain in the euro area. However, fiscal austerity and economic depression, fuelled by political polarization and populism, were associated with a further worsening of institutional quality; all indices measuring institutional quality show a sharp deterioration during the sovereign debt crisis years. Finally, after a difficult decade, in August 2018, Greece exited its Economic Adjustment Program but, as said above, its moderate recovery path that started in 2017 has been abruptly disrupted by the pandemic shock in early 2020. Section 2 will provide data supporting the above narrative.

In a companion paper, Economides et al (2020) have constructed a medium-scale macroeconomic model that embeds most of the above facts. Their numerical simulations, some of which are also reported in section 3, imply the following:

First, had we assumed that fiscal policy, etc., remained as they were in the pre-2010 period, the model could not deliver a solution. In other words, the situation was not sustainable and some kind of reform was unavoidable in the aftermath of the 2008 global crisis.

Second, the Economic Adjustment Program (namely, the fiscal austerity mix combined with the official fiscal bailouts and the various types of monetary accommodation provided by the ES), jointly with adverse developments in institutional quality (specifically, the deterioration of protection of property rights), can account for most of the cumulative loss in GDP between 2009 and 2016. In particular, departing from 2008, and feeding this model with the Economic Adjustment Program and an index of property rights, both as recorded in the data, the model - via its various propagation mechanisms - produces around 23% fall in GDP between 2009 and 2016 as compared to around 26% in the data. The Economic Adjustment Program accounts for 13% and the deterioration in property rights adds another 10%. Reversing the latter finding, the output loss during 2009 and 2016 could have been around 13% only, if institutional quality had not deteriorated since 2008 but had simply remained at its pre-crisis level in Greece.

Third, counter-factual scenarios show that things could have been much worse. Despite the conflicting views about the content of the bail-out program, especially regarding its fiscal austerity conditions, numerical simulations imply that the financial assistance from EU institutions has helped the Greek economy to avoid the worst. For example, if the fiscal needs were financed by, say, higher income taxes rather than by the three official fiscal bailouts, the loss in output would have been tremendous, other things equal. Besides, when we make the counterfactual assumption that the ECB did not follow an accommodative quantitative policy towards Greece, especially when we switch off the Greek NCB's cross-border TARGET2 liabilities to the rest of the ES, the model ceases to exhibit a solution implying that this scenario would not be feasible to the extent that the country continued to remain in the eurozone.

The rest is organized as follows. Section 2 presents data. Quantitative results are in section 3. Section 4 concludes.

2. Some (relatively unnoticed) data

In this section, we shed light on three distinct characteristics of the Greek economy during its sovereign debt crisis in the 2010s: financial assistance from EU institutions, fiscal austerity and the deterioration in core institutional fundamentals.

2.1. Financial assistance from EU institutions

We will first consider fiscal and in turn monetary policy although the boundaries between these two macroeconomic policies have been quite blurred especially since the 2008 global crisis.

2.1.1 Official fiscal rescue programs

In the case of Greece, over the years of the sovereign debt crisis, official fiscal rescue operations have been expressed by three bailouts.[57] The first took place in 2010-11 through the Greek Loan Facility, the second in 2012-2015 through the EFSF and the third in 2015-2018 through the ESM.[58] These programs were completed in August 2018 so the country is no longer reliant on ongoing official rescue loans. The total amount of loans received from these three official fiscal rescue operations was around 290 billion euros which is the largest

[57] For fiscal and public finance policies at national and EU level during the crisis years, see e.g. "Public Finances in EMU" published annually by the European Commission. For criticism from both sides, see e.g. Sinn (2014), De Grauwe (2016) and Alesina et al (2019).

[58] See the report of ESM (2018) for details. Note that the European Financial Stability Facility (EFSF) was established in 2010 and was later replaced by the European Stability Mechanism (ESM) which was established in 2011 as a permanent rescue fund. In general, these rescue institutions have been financed by endowments provided by EU states and the issuance of bonds, while, their revenues have been used for loans to EU countries in need after the latter sign a memorandum of understanding on a reform agenda. See Sinn (2014) and De Grauwe (2016) for details and evaluation.

financial assistance package in history. Most of this money was used for public debt servicing payments (the payment of the principal of government bonds at maturity and interest payment obligations) and the financing of primary budget deficits (there was no market for new Greek bonds between 2010 and 2018).[59]

Table 1. Greek public debt to GDP and its main holders

Year	Total public debt (% of GDP)	λ^{eu} (% of total public debt)	λ^{g} (% of total public debt)
2008	109.4	0	75
2009	126.7	0	75
2010	146.2	9.3	46.3
2011	172.1	19.9	24.7
2012	159.6	59.9	20.3
2013	177.4	66.3	18.2
2014	178.9	67.2	16.9
2015	175.9	68.6	16.1
2016	178.5	69.8	16.0
2017	176.2	70.9	16.0
2018	181.2	70.9	16.0
2019	176.7	70.9	16.0

Source: Public Debt Management Agency and Greek Ministry of Finance.

As a result of these rescue operations, today, close to 70% of Greek public debt is owned by EU public institutions (member states of the euro area, EFSF, ESM, etc). Data for Greek public debt as share of GDP, as well as the fractions of it held by EU public institutions (λ^{eu}) and foreign private investors/banks (λ^{g}) over time are reported in Table 1, while the rest is in the hands of domestic private investors/banks.[60]

2.1.2 Monetary support and the role played by the ECB

Regarding monetary policy of the ECB,[61] "conventional" responses included a sharp reduction of policy interest rates, while "unconventional" or quantitative responses included a fixed rate

[59] Most of the rest of the bailout money has been used to finance the cost of the haircut in March 2012 (this is the so-called private sector involvement (PSI), according to which privately held governments bonds took a 53.5% cut of their face value, which corresponds to 107 billion euros reduction, although, with an exchange of EFSF bonds, the overall debt burden decreased by 52 billion euros only) and the cost of private banks recapitalization (a large fraction of the second bailout loan was used for their recapitalization (around 50 billion, although 11 billion of it were returned to the ESM in early 2015 as no needed). See e.g. Bortz (2015), Rocholl and Stahmer (2016) and ESM (2017, 2018) for a detailed decomposition, that is, how the loans were used by Greece in the three official bailout programs.

[60] The Greek National Central Bank or the ECB purchase government bonds in the secondary market. Thus, the numbers in Table 1 can be thought of as purchases in the primary market. See below for monetary policies.

[61] For the ECB's response to the crisis, see ECB (2011), Hartmann and Smets (2018), Rostagno et al (2019) and Brunnermeir and Reis (2019). For criticism from both sides, see e.g. Sinn (2014) and De Grauwe (2016). For the effects of ECB's policies on asset prices and/or the macro economy, see e.g. Gibson et al (2016, 2019), Gambetti and Musso (2017), Quint and Tristani (2017), Moessner (2018), Rostagno et al (2019), Coenen et al (2020) and many others.

full allotment loan policy to private banks (via MROs, LTROs, etc) subject to relaxed collateral standards,[62] the extension of maturity of liquidity provision, the issuance of Emergency Liquidity Assistance (ELA) credit under the guarantee of the country's NCB to help private banks overcome liquidity crises and probably insolvency problems, and the limited purchase of collateral themselves, like government bonds, in the secondary market (e.g. the Securities Market Programme (SMP) during 2010 and 2012 and the Covered Bond Purchase Programme (CBPP) during 2009 and 2012) to support their market price and keep their interest rates relatively low.[63] Furthermore, when uncertainty got worse in the summer of 2012, the ECB announced that it would buy an unlimited amount of government bonds in the secondary market if that would become necessary (this is the Outright Monetary Transactions (OMT) program), under the condition that the ECB is actively involved, as part of the so-called Troika meaning the EC, the IMF and the ECB, in the monitoring of budgetary policies in the countries in need (see e.g. De Grauwe (2016)). Eventually, in early 2015, after hesitation, the ECB decided to start officially its large-scale asset-purchasing program encompassing private and government sector securities[64] although this did not apply to Greece being under a memorandum of understanding at that time (as said, the latter ended in August 2018).

In addition to the above measures, there has been a big rise in TARGET2 liabilities in Greece since the very early days of the global financial crisis of 2008. Before we present the relevant data, we need to clarify how the balance sheet of a NCB participating in the ES is related to the consolidated balance sheet of the ES focusing on the role of TARGET2 balances.

The Eurosystem (ES), the European Central Bank (ECB) and National Central Banks (NCBs)

The consolidated balance sheet, and the associated budget constraint of the ES, are not different from those of a standardized central bank.[65] In other words, as is typically the case with central banks (see e.g. Walsh (2017, chapters 4 and 11), Reis (2013, 2017) and Whelan (2014, section 2.1)), the assets side of the balance sheet of the ES consists mainly of foreign currency, loans to credit institutions[66] and securities.[67] The liabilities side, on the other hand, consists mainly of banknotes in circulation (held by the non-bank public), reserves which are

[62] To the extent that collaterals, used for this credit, consist of government bonds, these measures effectively constitute an indirect government financing through the ECB (see e.g. Sinn (2014) and De Grauwe (2016)). This did not apply to Greece however which was under a memorandum of understanding.

[63] In the case of Greece, by the end of these early programs in 2012, the Greek NCB or the ECB (the ES in short) had bought Greek government bonds of around 40 billion euros or around 18% of GDP in the secondary market (see Bank of Greece and Sinn (2014, chapter 8)). After that, this stock declined as some of these bonds matured or were resold back in the secondary market. Specifically, as a share of GDP, Greek bonds held by the ES were 15% in 2013, 11% in 2014, 8% in 2015, 7% in 2016, 5% in 2017, 4% in 2018 and less than 2% in 2019.

[64] For details, see "Asset purchase programmes" available at the site of the ECB.

[65] See e.g. "Annual consolidated balance sheet of the ES" and "User guide on the ES consolidated weekly financial statement" available at the site of the ECB.

[66] In the case of the ES, this includes main refinancing operations (MROs), longer-term refinancing operations (LTROs), marginal lending facilities, etc. It also includes emergency liquidity assistance (ELA) to private banks with severe liquidity problems.

[67] In the case of the ES, this includes the three covered bond purchase programmes (CBPPs), the securities market program (SMP), the large-scale asset purchase programme (APP) since 2015, etc.

also called current accounts (held by private banks at the central bank) and government deposits; these are also the main items of the monetary base in the ES.

However, the consolidated balance sheet of the ES shows assets and liabilities of the NCBs and the ECB vis-à-vis third parties only. In other words, it does not include credits and debits between NCBs and the ECB which cancel out at ES level. An example of such transactions is what is known as Intra-Eurosystem claims and liabilities and recorded respectively as TARGET2 assets and TARGET2 liabilities in the financial statements of the NCBs and the ECB. As first pointed out by Sinn and Wollmershauser (2012) and Sinn (2014) and further studied by e.g. Cecchetti and McCauley (2012), Whelan (2014, 2017), Perotti (2020) and many others, these are net bilateral positions vis-à-vis the ES, which means that the NCB of a member country transferring money abroad records a TARGET2 liability to the rest of the ES, while the NCB of a member country receiving the money from abroad records a TARGET2 asset. As said above, these TARGET2 balances cancel each other out at aggregate ES level (this is by construction) and therefore do not appear in the consolidated balance sheet of the ES.[68] However, they do appear in the balance sheets of the individual NCBs, or the ECB itself, in the sense that they enter as an extra item of liabilities for a country with Intra-Eurosystem liabilities like Greece (see e.g. Whelan, 2014, Table 2) or as an extra item of assets for a country with Intra-Eurosystem claims like Germany (see e.g. Whelan, 2014, Table 3).

During the sovereign debt crisis, the NCBs of the countries hit by the crisis increased loans to their private sector and this was financed by higher liabilities to the ES. In other words, for a country like Greece, TARGET2 liabilities have become part of the monetary base created by its NCB in accordance with the rules of the ES. To the extent that this extra liquidity is used to finance a flight to safety and/or imports, it can work like international credit replacing private capital inflows (see Sinn (2014)).

As is well known, there has been an explosion of TARGET2 balances since 2008.[69] For the ES as a whole, TARGET2 balances were very small prior to the global financial crisis but have increased substantially since then. They were 186 billion euros in May 2008, 416 billions in July 2011, 1.09 trillion in August 2012 and 1.24 trillion in September 2017 (see Whelan (2017, Figure 1)).

The case of the Greek NCB

Tables 2a and 2b present the main items in the balance sheets of the Bank of Greece. As can be seen in Table 2a, TARGET2 balances accounted for the lion's share of liabilities, and hence of the monetary base, in every year between 2008 and 2017. For instance, TARGET2 liabilities were 105 billion euros in 2011, which translated in 62% of the total liabilities of the Greek NCB or 51% of GDP, and 94 billion euros in 2015, which translated in 58% of the total liabilities

[68] See e.g. Whelan (2014) for details on the mechanics of the TARGET2 system and how assets and liabilities of both private banks and NCBs change in response to various changes like moving money from a bank account in country A to a bank account in country B (see especially Whelan's Tables 4 and 5).

[69] For TARGET2 data across euro area countries, see e.g. Whelan (2014, 2017). See also e.g. "Target balances of participating NCBs" and "The ECB's asset purchase programme and TARGET balances: monetary policy implementation and beyond" (available at the ECB's site).

of the Greek NCB or 53% of GDP.[70] On the assets side in Table 2b, loans to private banks were the biggest item in every year between 2008 and 2016. It is interesting to notice that both TARGET2 liabilities and loans to private banks peaked (almost on a one-to-one basis) during the politically turbulent years of 2010, 2011, 2012 and 2015.

Table 2a. Bank of Greece's main liabilities (billions of euros, end of year)

Year	Banknotes	TARGET2	Reserves	Government deposits	Total liabilitites
2007	16	10	7	1	42
2008	18	35	8	1	71
2009	21	49	8	1	86
2010	22	87	10	2	138
2011	23	105	5	5	168
2012	23	98	2	7	160
2013	25	51	2	8	109
2014	27	49	3	5	103
2015	29	94	1	5	163
2016	30	72	1	9	142
2017	31	59	2	12	125
2018	33	29	7	25	109
2019	30	26	9	27	109

Source: Bank of Greece.

Note: "Banknotes" is item 1 in the Bank of Greece's balance sheets, "TARGET2" is item 9.3, "Reserves" is the sum of items 2 and 3 and "Government deposits" is item 4.

Table 2b. Bank of Greece's main assets (billions of euros, end of year)

Year	Lending to banks	Securities	Total assets
2007	9	10	42
2008	38	14	71
2009	50	21	86
2010	98	24	13
2011	128	21	168
2012	121	21	160
2013	73	21	109
2014	56	31	103
2015	107	40	163
2016	67	57	142
2017	34	74	125
2018	11	76	109
2019	8	75	109

Source: Bank of Greece.

[70] As the data show (e.g. Whelan (2014, 2017)), the same happened in other periphery countries of the EZ. For instance, in Ireland, TARGET2 liabilities peaked at 91% of GDP in 2010 (see also Lane (2014) for Ireland).

Note: "Lending to banks" is the sum of items 5 and 6 in the Bank of Greece's balance sheets and "Securities" is item 7.

On the role of TARGET2 balances

Since the publication of the seminal paper by Sinn and Wollmershauser (2012), there has been a heated debate over the economic role of these assets and liabilities. Opinions have ranged from TARGET2 being an innocent and mechanical protocol of the ES to being a hidden bailout of the periphery EZ countries in trouble. Today, to the best of our understanding, there is a kind of consensus, in the sense that the enormous increase of TARGET2 balances during the years of the European sovereign debt crisis: (a) was closely related to fears of default and a euro break up (b) was closely related to loans to private banks and the QE policy of the ECB in general (c) facilitated a capital flight from the periphery to the core and (d) was not clearly timed to current account deficits in the periphery (see e.g. Whelan (2014, 2017)).

More formally, Economides et al. (2020) have shown that the issuance of TARGET2 liabilities by a NCB in the ES, to the extent that this issuance is in excess of liquidity needs for transactions within the NCB's national jurisdiction, constitutes a transfer of real resources to this member country (i.e. it works like foreign aid), in the sense that this excess liquidity remains an an item in the country's balance of payments. The latter can be used, at least in principle, to finance imported goods, to pay foreign debt obligations or to finance investment abroad (this formal criterion seems to support Sinn's general view on the redistributive role played by TARGET2 balances in the ES during the European sovereign debt crisis years, although these balances were mainly used to facilitate a flight to safety rather than to finance current account deficits).

Summing up

The issuance of TARGET2 balances and the distribution of ECB's dividends can allow for a direct redistribution of real resources across member countries in the EZ, while, indirect ways include the purchase of governments bonds of member countries under fiscal stress (for the fiscal redistribution of ECB's policies, see also Reis (2017, section 10)).[71] In general, our view is that it is hard to believe that no cross-country redistribution has been taking place through the ECB's quantitative monetary policies since 2008. This is natural to happen in a currency union, like the EZ, where a single central bank, the ECB, serves 19 different fiscal authorities.

It is worth pointing out that all this is on top of the effects that quantitative monetary policies can have even in a closed economy. The latter are possible in the presence of financial

[71] Reis (2017, section 10) distinguishes fiscal redistribution via the distribution of dividends and via assets/liabilities. Our discussion above has focused on the latter (bank loans, asset purchases, TARGET2, etc). This does not mean that the distribution of the ECB's dividends to individuals NCBs of the ES cannot have redistributive implications but, to the extent that we read the data correctly, the numbers are small. Note that this distribution works as follows: the ECB collects all profits (the so-called monetary income) made out of NCBs in the ES and then redistributes them back to each NCB so as each NCB ends up with a share of the total monetary income that is proportional to its "capital key" (see e.g. Whelan (2014)).

frictions like borrowing constraints, portfolio adjustment costs, moral hazard problems, etc, that provide the channels through which quantitative monetary policies affect asset prices and in turn the real economy thereby breaking Wallace's (1981) irrelevance result (see Walsh (2017, chapter 11.5) for a review of this literature).

2.2. The stick: fiscal austerity and structural reforms

The above complex mix of financial (fiscal and monetary) assistance was provided under the condition in the memorandum of understanding that Greece undertakes a severe fiscal austerity plan (a description of the Greek austerity plan is in e.g. Alesina et al (2019, chapter 8) and Alogoskoufis (2019)). Irrespectively of the arguments for and against it,[72] the fact is that Greece did adopt a comprehensive fiscal consolidation plan including a high tax burden and cuts in various items of public spending. Data for the evolution of total government revenue and expenditure over time are reported in Table 3a, while data for the main tax rates (the effective income tax rate, τ^y, and the effective consumption tax rate, τ^c) and the main categories of public spending as shares of GDP (public investment, s^i, public spending on private goods, s^g, public transfers, s^{tr}, and public wages, s^w) are reported in Table 3b.The fiscal consolidation is clear although this was not reflected in a fall in the public debt to GDP ratio due to the deep economic downturn.

Table 3a. Total government revenue and expenditure to GDP

Variable (% of GDP)	2008	2010	2011	2014	2016	2018	2019
Revenue	40	41	44	47	49	48	47
Expenditure	50	53	54	51	49	48	46

Source: European Commission (Report on Public Finances in EMU).

It should be said here that, in addition to the fiscal austerity measures, Greece adopted the commitment to maintain a primary surplus of 3.5% of GDP until 2022 and around 2% in the following years (however, this has now been postponed until the end of the new covid-19 pandemic crisis). It has also promised to implement structural (non-fiscal) reforms in labor and product markets, as well as in the functioning of its public sector (see e.g. ESM, 2018). Such much-needed reforms however still lag behind (see e.g. Rocholl and Stahmer (2016) and Masuch et al (2018)), despite the optimism expressed by the European Commission (see e.g. the European Commission's enhanced surveillance report on Greece in 2019).

[72] For fiscal austerity and its macro effects, see e.g. Alesina et al (2019). A general lesson is that the effects of public debt stabilization depend crucially on the fiscal policy mix both during the early period of fiscal pain (when the debt is brought down by spending cuts and/or tax rises) and the later period of fiscal gain (when some fiscal instruments are expected to take advantage of the fiscal space created once public debt has been brought down). See also Philippopoulos et al (2017a, 2017b).

Table 3b. Government spending to GDP and tax rates

Variable / Year	s^g	s^w	s^i	s^{tr}	τ^y	τ^c
2008	9.1	11.6	5.8	18.9	27.3	16.8
2009	10.2	13.1	5.7	20.6	27.1	15.2
2010	9.8	12.4	3.7	20.9	27.6	17.6
2011	9.1	12.6	2.5	22.9	29.8	19.0
2012	9.0	12.8	2.5	23.2	33.6	18.5
2013	8.4	12.1	3.4	21.4	32.3	18.7
2014	8.2	12.2	3.7	21.8	33.4	19.1
2015	8.2	12.1	3.8	22.0	34.4	19.4
2016	8.1	12.1	3.5	22.1	35.	21.5
2017	8.2	11.9	4.4	21.3	36.0	21.3
2018	7.3	11.8	3.0	20.7	35.4	22.5
2019	7.7	11.7	2.2	20.7	NA	NA

Source: Eurostat and own calculations.
Note: All spending items are expressed as shares of GDP, whereas tax rates are effective tax rates.

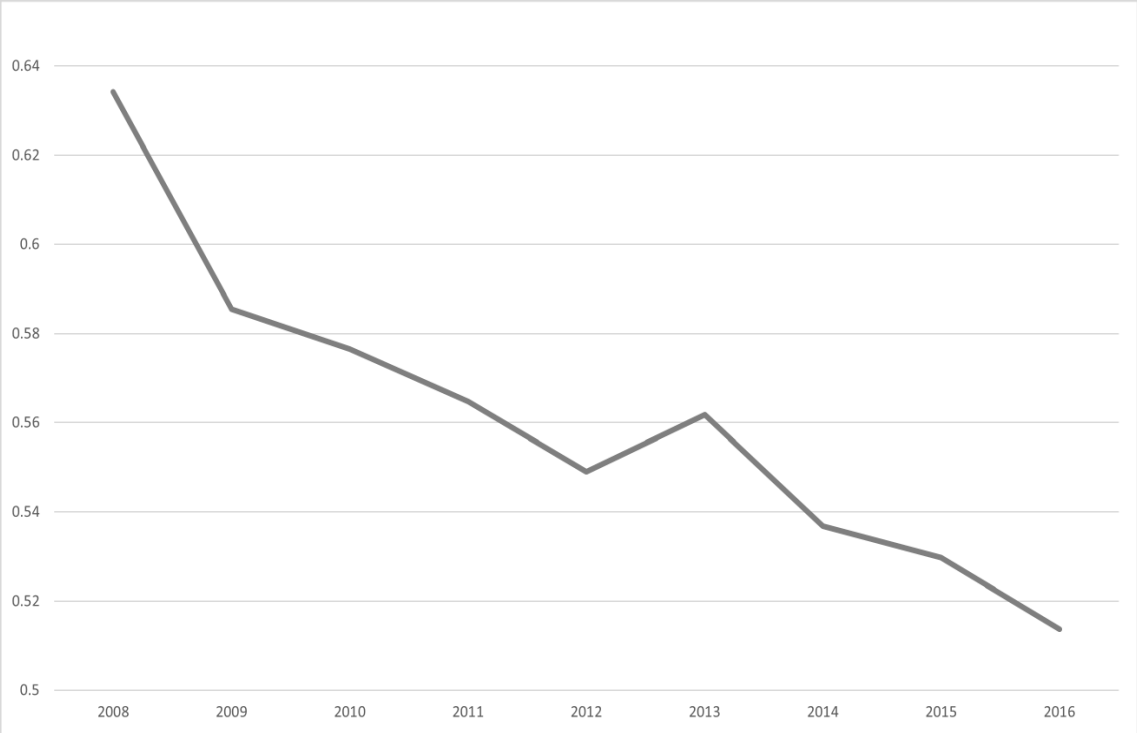
2.3. Institutional quality

We close this section with data on core institutional fundamentals and, in particular, on property rights.[73] Figure 1a presents an index of property rights in Greece. This index has been constructed by us as the simple average of three sub-indices provided by the World Bank: "the rule of law", "regulatory quality" and "political stability and absence of violence/terrorism", which are three variables commonly used for the construction of a measure of property rights protection in the related literature. These data have been rescaled from 0 to 1.

The same three sub-indices, now in various EZ countries including Greece, are shown in Figures 1b, 1c and 1d. As can be seen, Greece, not only has always been a country with poor institutional quality, but, to make it worse, it experienced a sharp deterioration after 2008, as has been pointed out by e.g. Micossi (2016), Papaioannou (2016), Masuch et al (2018), Kollintzas et al (2018), Economides et al (2020) and Christou et al (2020).

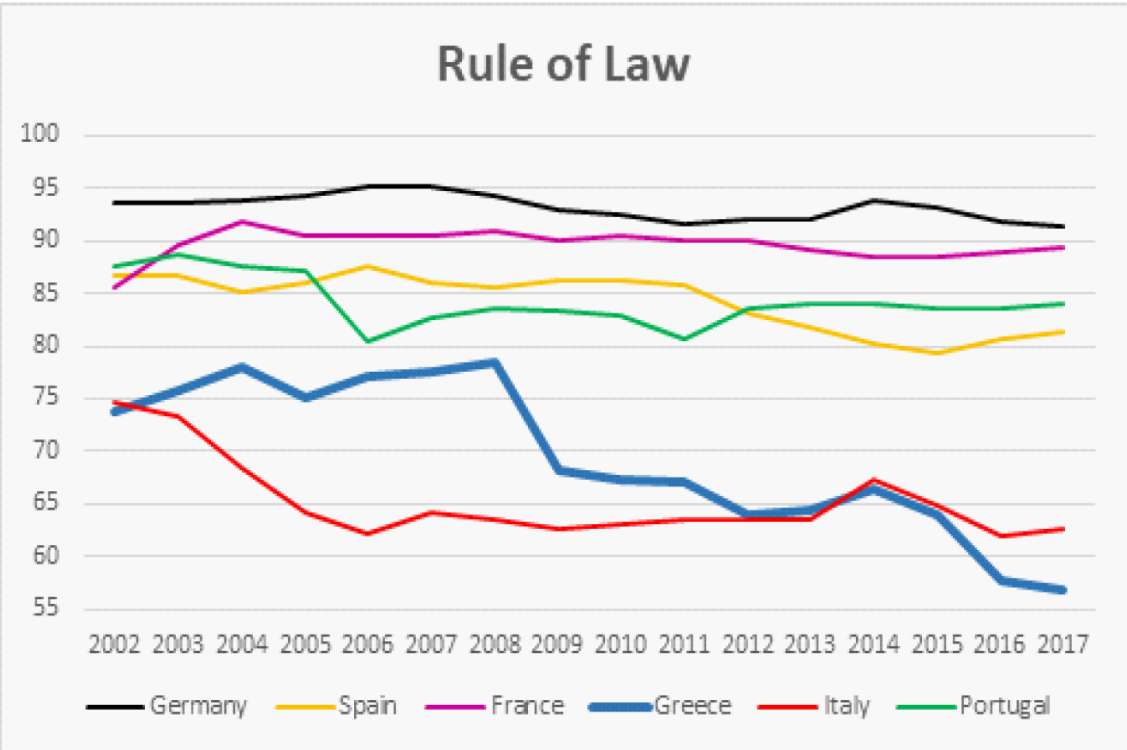
[73] For the key importance of property rights among other measures of core institutional quality, see e.g. Acemoglu (2009, chapter 4), Besley and Persson (2009), Besley and Ghatak (2010) and many others.

Figure 1a. Property rights in Greece



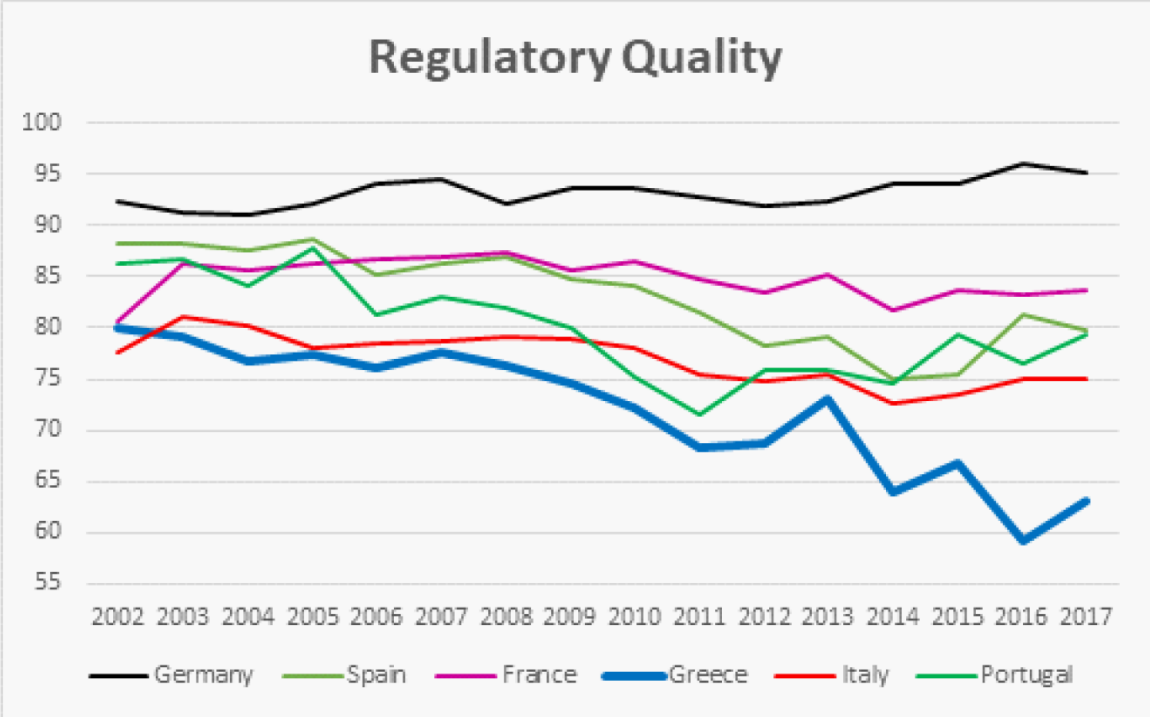
Source: World Governance Indicators.

Figure 1b. Rule of law, comparison to other countries



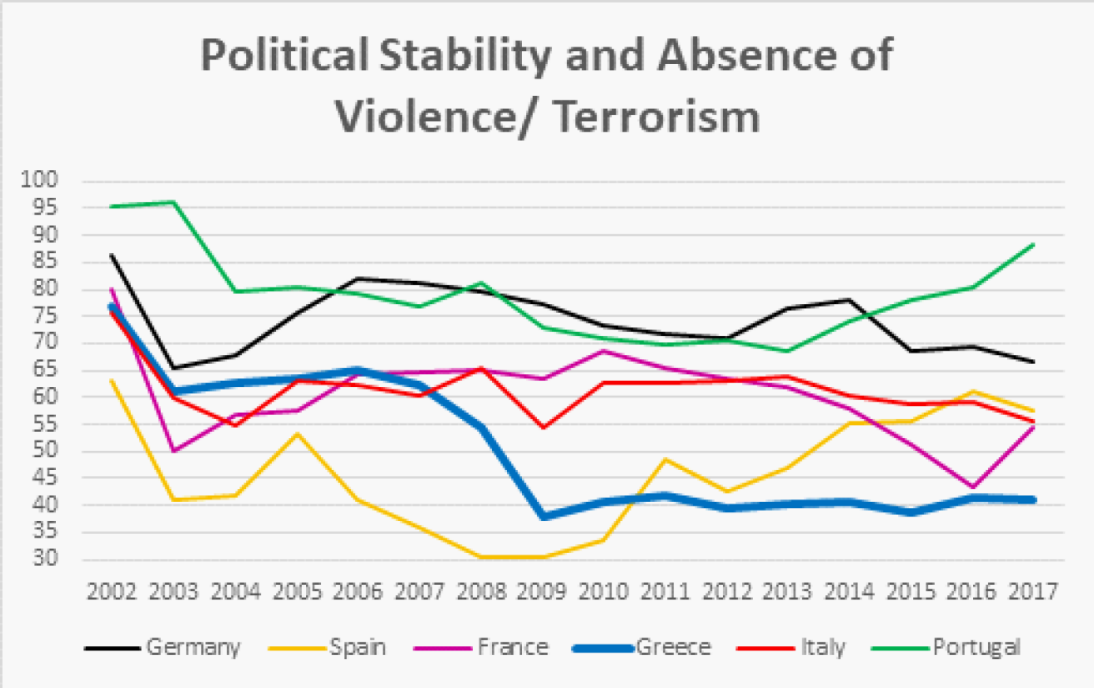
Source: World Governance Indicators.

Figure 1c. Regulatory quality, comparison to other countries



Source: World Governance Indicators.

Figure 1d. Political stability and absence of violence/terrorism, comparison to other countries



Source: World Governance Indicators.

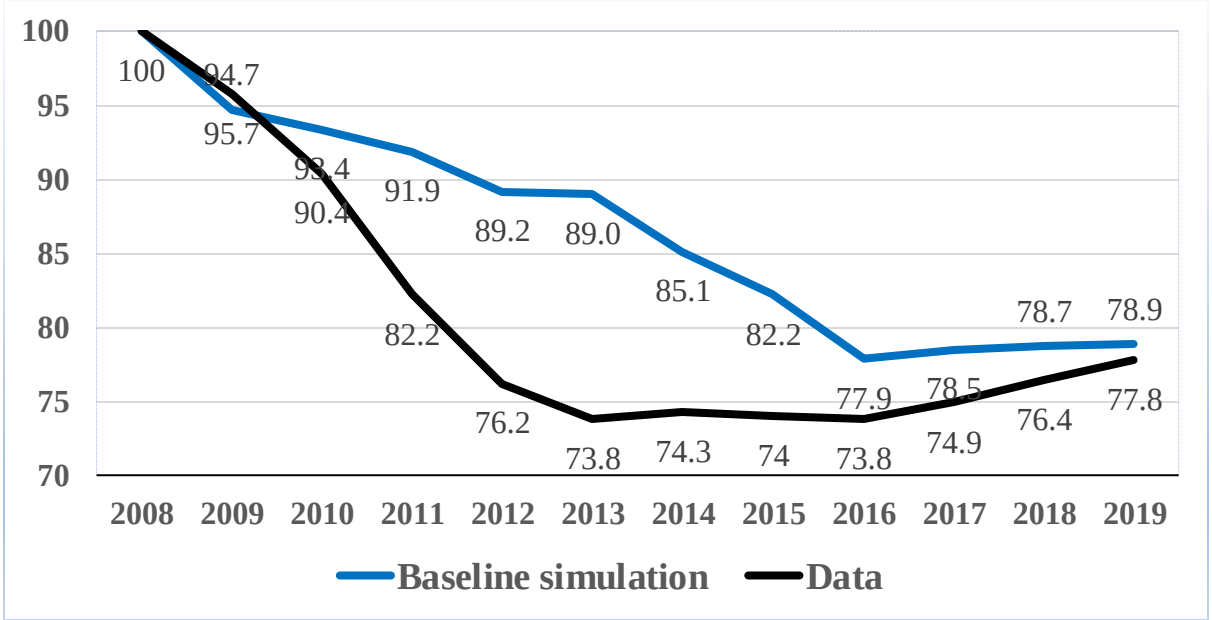
3. Some illustrative quantitative results

In this section, in order to provide a quantitative measure of the above developments, we borrow some results from Economides et al (2020). The way we have worked in that paper is as follows. First, as already said, we have constructed a medium-scale microfounded macroeconomic model that embeds the main features of the Greek economy during the euro period. Then, departing from the 2008 solution, we have fed the model with the time paths of policy variables and the index of property rights as they are in the data. In doing so, we have assumed that after 2019 the values of these variables remain unchanged as in 2019 which is the last year before the pandemic crisis.

3.1. Facts

The baseline simulation for GDP, as well as its actual path in the data, are illustrated in Graph 1, where the numbers indicate the percentage change in output relative to the baseline 2008 solution. As can be seen, the model solution can mimic quite well the actual behaviour of GDP over the crisis years. For example, in 2016, the output loss generated by the model is 22.7% (namely, 100-77.3=22.7), while it is 26.2% (namely, 100-73.8=26.2) in the data, both relative to the baseline year of 2008.

Graph 1. Output loss and data

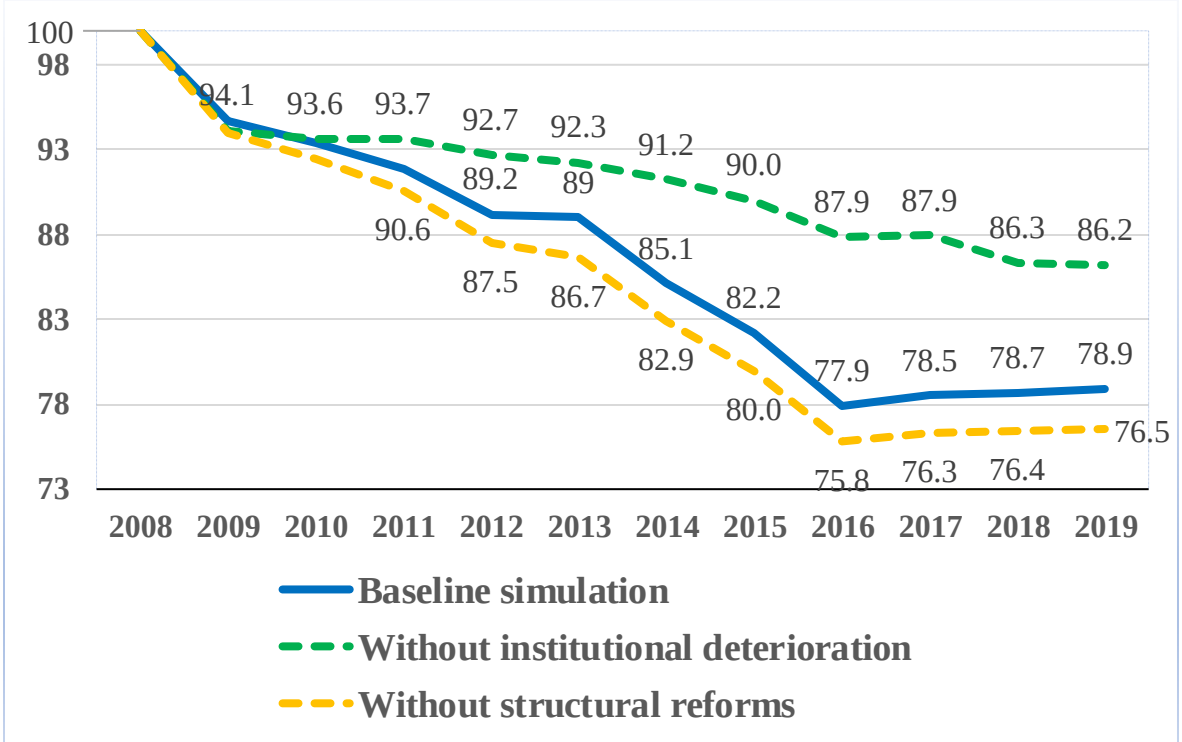


Data source: Eurostat

In Graph 2, the simulated output loss is decomposed into its main drivers. As the graph reveals, about 13% of the loss is due to the economic adjustment package adopted (where the latter includes fiscal austerity, structural reforms and the various forms of international financial assistance). Another 9.8% (specifically, 87.1-77.3) is due to the deterioration of

institutional quality since 2008. The role of the latter is striking. Reversing the argument, the output loss could have been much smaller (around 10 percentage points lower), had institutional quality simply remained at its pre-crisis level.

Graph 2. Output loss and its main drivers



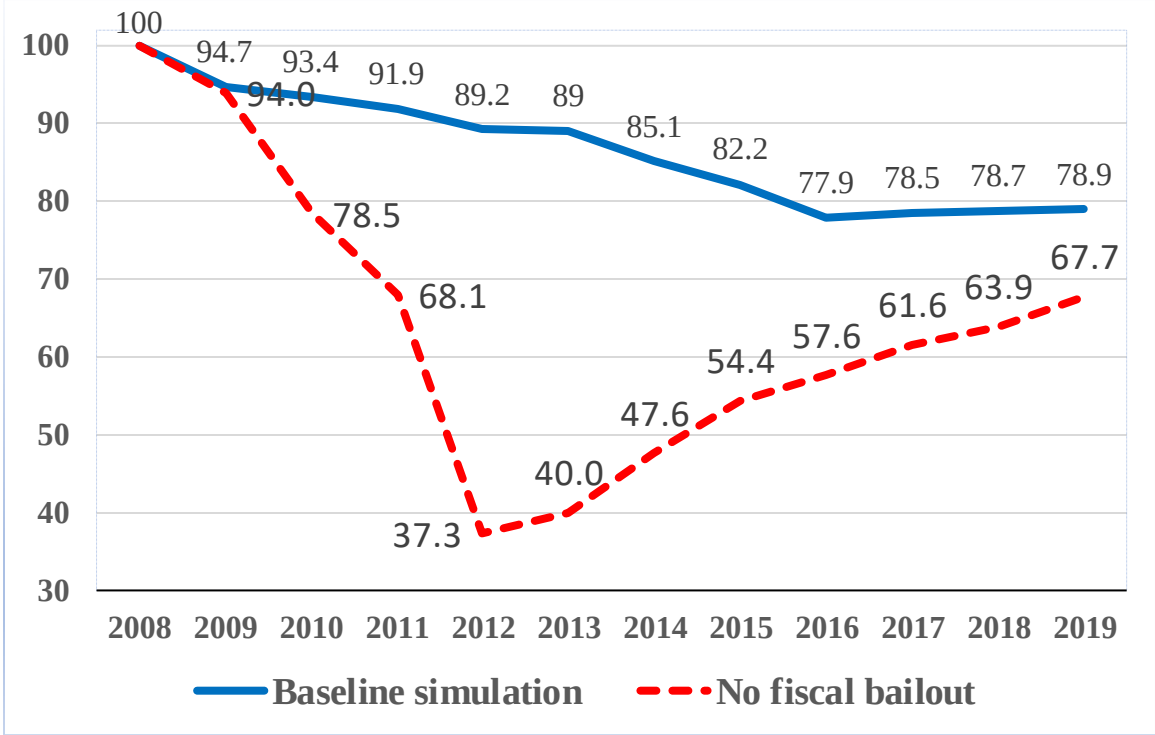
3.2. ... but it could have been worse without financial assistance

One of the most important hypothetical questions is what would have happened if EU states and institutions had not stepped in to repay debt obligations and practically purchase the Greek sovereign debt when the country was shut out of the bond market and trust was lost.

Say, for example, that the Greek government, instead of receiving the three official fiscal bailouts, would have to increase income taxes to make up for the loss in public revenue required to meet its obligations. This counter-factual case is illustrated in Graph 3. As can be seen, in this case, the depression would be much deeper and, most probably, would have triggered a social unrest.

We finally report that we have also attempted to switch off TARGET2 balances, which, as we have argued, has been one of the main forms of monetary policy aid from the ECB to Greece. This is to mimic the counter-factual case in which the ES, via the Greek NCB, had not followed an accommodative monetary policy towards Greece. In this case, we report that the model cannot exhibit dynamic stability. In simple words, we cannot get a solution. This - according to our view - provides further evidence of the important role played by the ECB in the Greek rescue.

Graph 3. Counterfactual: no fiscal bailout



4. Lessons for the new pandemic crisis

In this note, borrowing simulations from Economides et al (2020), we provided an anatomy of the Greek sovereign debt crisis and the associated great depression by pointing out some key (and relatively unnoticed) features of the Greek economy. The focus was, not only on the role of fiscal austerity as in most of the literature, but also on the roles of European financial assistance and the deterioration in institutional quality, both of which have been closely associated with the fiscal austerity measures taken.

The lessons learnt from the sovereign debt crisis of 2009-2016 can be useful for the new economic crisis triggered by the covid-19 pandemic (for the new crisis and reaction by the EU, see European Commission (2020a, 2020b)). Policies that (a) enhance institutional quality and social capital (b) design a more growth-enhancing tax-spending policy mix and (c) make an efficient use of national public financing by European Union institutions (e.g. by the newly established Recovery Fund and the ECB) could help the Greek economy to overcome the pandemic crisis at the minimum cost (see Economides et al (2021) for alternative policy scenaria). If these conditions are not met, there is the danger of a new deep and long-lasting economic and social crisis similar to that in the 2010s.

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Chapter 7. Economic activity and sources of finance in Greece: The predominant role of banks

Helen Louri[74] and Petros Migiakis[75]

Abstract

We examine the existence of a feedback loop between the resilience of the financial sector and Greek economic activity. A sequence of structural VARs is employed using data for bank credit, liquidity, capital, asset quality and private demand in 2001-2018 in two data sets: one in monthly frequency with which we examine the determinants of credit provision by Greek banks, and another in quarterly frequency with which we examine the finance-growth nexus for the Greek economy. We find that (a) the deterioration in the quality of Greek banks' balance sheets affected negatively the provision of credit to the economy, (b) central bank liquidity and recapitalizations of Greek banks provided only a partial remedy and (c) the decline in credit significantly weakened economic activity. Also, we find that there is a role for market financing of the economy but this cannot substitute for the predominantly bank-based financing. Therefore, as the Greek economy starts to recover, Greek banks have an important role to play, *first* by solving the problem of a high stock of non-performing loans (NPLs) and providing the necessary credit and *second* by improving the efficiency of capital allocation towards a sustainable growth model.

Keywords: Greek crisis; credit provision; finance-growth nexus; financial stability; non-performing loans.

JEL: E22; E44; G01; G21.

Acknowledgements: We wish to thank participants at the "Greece and the Euro: From Crisis to Recovery" conference (Tufts University, Boston, April 2019) and the pre-conference Workshop (LSE, London, December 2018) for their insightful comments and suggestions. Research support from the Research Centre of the Athens University of Economics and Business (EP-2225) is gratefully acknowledged. The views expressed are our own and are not necessarily shared by the institutions we are affiliated with. Any errors remain our responsibility.

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1. Introduction

The Schumpeterian view that the financial system may promote economic growth was neglected in the standard econometric modeling, but also in the policy-making setup before the Global Financial Crisis (GFC). Analytical tools used for providing input to economic policy all but ignored the role of finance for the economy. For instance, the Taylor rule dictates that interest rates should be determined by a neutral real rate, a target for the inflation rate, the output gap and the deviation of inflation from the target, with error-correction properties; no role for bank credit or market financing. Likewise, financial variables were not incorporated in economic activity models. At best, as is the case of New-Keynesian DSGE models which dominated the toolboxes of central banks and other policy-making institutions, standard modeling practices allowed for financial effects on economic activity to be accommodated just as constraints or accelerators, termed 'financial frictions', of established macroeconomic relationships (Bernanke *et al.* 1999; Iacoviello 2005).

All in all, mainstream theory paid no attention to views arguing for an important role of finance for the economy, nor was it adjusted according to pre-GFC empirical evidence provided by several studies about the existence of a 'finance-growth nexus' (Beck *et al*. 2000; Caldéron and Liu, 2003; Beck and Levine, 2004). Then came the crisis and finance made its way into macroeconomic modeling with a burst. It was the burst of the subprime mortgage market that set off the crisis in the US. After that, the slowdown in the American economy intensified to a degree that could not be explained by standard macroeconomic models, even if they were adjusted to capture global spillover effects.

In the wake of the GFC empirical evidence started building up doubts on fundamental assumptions of macroeconomic analysis. Thus, the usefulness of a Taylor rule without financial variables has been questioned (BIS, 2016, pp. 78-79). Likewise, the working of the Philips curve (among others, Farmer and Nicolò, 2018), the concept of a potential level of output (Williams, 2017) and even the tool used for anticipating that the economy will adjust to its trend (Hamilton, 2018) they have all been questioned and put under scrutiny. On the other hand, using financial variables for forecasting economic ones has started to be considered a standard practice (Espinoza *et al*., 2012), while the DSGE modeling framework has been adjusted for effects (more important than simple frictions) stemming from finance to the economy (Galvao *et al*., 2016, Christiano *et al.*,2014, Clerc *et al.* 2015). So, the concept that financial variables are significantly related to economic activity by preceding or even causing growth has been one of the net gainers of the GFC.

At present, empirical research focuses on assessing the impact of financial variables on economic activity, but also on revealing the mechanism(s) through which economic activity is affected. Borio (2014) provides evidence on the effects of finance on the economy: fluctuations in economic activity may either be smoothed down by anti-cyclical financial flows or be intensified, if a slowdown in the economy is coupled with a deceleration of funding or even a burst of financial imbalances. In the same context, credit-to-GDP is also found to have a significant cyclical component which is attributed to financial cycles that are found to exceed in length economic cycles. Finally, the case of a sovereign debt crisis that resulted in credit

contraction and a slowdown of economic activity has already been documented in the empirical literature following the GFC (Bofondi *et al*. 2018).

In the light of the recent reconsideration of the link between finance and growth we attempt in this study to examine the role of financing for economic activity in Greece. We deal mainly with two questions: (a) whether and by how much the resilience of banks determines credit provision to the economy and (b) how net inflows/outflows of bank credit or market financing weigh on economic activity. We examine these questions with regard to the Greek economy before and after the GFC aiming to draw conclusions, which could be useful to policy makers, especially with respect to achieving objectives such as the restructuring of the Greek economy towards a higher value added and extrovert production model.

We rely on reduced form vector autoregressions (VARs) with structural characteristics, i.e. we form a sequence of structural VAR (SVAR) models for addressing our questions. In a nutshell, we show that the bank-dominated Greek economy has indeed been impaired by the lack of bank credit along with impairments brought about by the crisis on banks' balance sheets. In particular, we find that (a) the hike in non-performing loans dampened credit provision, while the central bank partially cured this negative effect with the provision of ample liquidity and (b) bank credit positively affects private demand and its effect on investment is even more pronounced. Moreover, we find that market financing is a weak remedy for the lack of bank credit. As a result, our evidence supports policy proposals for an effective and fast treatment of the problem of the high stock of NPLs in Greek banks' balance sheets through the creation of asset management companies or asset protection schemes (Bank of Greece, 2019; 2021). Such policy actions may contribute to a permanent positive shock on Greek GDP.

The rest of the paper is structured as follows. Section 2 outlines milestones as well as important details regarding developments in the Greek financial sector since 2001, the time Greece joined the euro area. Section 3 presents results from an empirical examination of the relationship between the quality of banks' balance sheets and bank credit. Section 4 presents empirical evidence on the relationship between bank credit, market financing and economic activity. Section 5 outlines the policy implications of our findings and concludes.

2. The Greek banking sector: some stylized facts

2.1 Greek banks' balance sheets before and after the Global Financial Crisis

Greece experienced by far the most intensive domestic crisis in the aftermath of the GFC. Although the Greek crisis followed the GFC it was not a result of the same causes. The Greek financial sector was resilient, whereas the position of the Greek public sector, and in particular the outlook of refinancing the Greek public debt, worsened initially along with other sovereigns and then deteriorated much more. In particular, the GFC sparked a re-pricing of risks worldwide (Malliaropulos and Migiakis 2018) which found the Greek state with high fiscal deficits and high public debt within an environment of pessimistic self-fulfilling expectations (de Grauwe and Ji, 2013).

With the Greek economy being predominantly bank-based the banking sector was, by and large, considered a national champion. Greek banks in 2008-2009, had a wide enough deposit base (more than €245 bn in deposits, i.e. around 100% of the GDP at that time), which was transformed to longer-term assets, such as houses and equipment, via credit provision to the economy and a healthy stream of income (net interest income at 4.4% of the risk-weighted assets or around 3% of total assets). Also, they were among the best capitalized banks in Europe with a capital adequacy ratio of around 12% (Table 1), while they were not exposed to credit derivatives, such as CDOs, and securitizations to the same degree as the average European bank. Moreover, they had differentiated their operations and earnings sources by expanding their activities to South Eastern European countries while in 2008 private debt-to-GDP at around 100% was significantly lower than the EU average (150%). So, at the onset of the GFC Greek banks looked healthy and resilient.[76]

Table 1: Key figures of the Greek banking sector 2001-2018, %

Year	Market structure	Capital adequacy		Quality of assets		Performance			Liquidity	
	CR(5)	CtA	CAR	Provisions	NPLs	Margin	NII	RoA	Loans-to-Deposits	Liquidity coverage
2001	66.7	8.5	-	3.5	-	-	2.3	1.4	56.6	-
2007	67.7	6.1	11.3	3.3	6.0	3.9	3.2	1.0	82.2	47.9
2009	69.2	5.0	11.9	2.7	8.1	2.4	2.5	0.3	81.6	47.9
2012	79.5	3.8	6.5	8.0	24.9	2.7	1.8	-2.6	118.6	85.0
2015	95.2	8.4	11.1	17.5	44.6	4.2	1.8	-0.3	117.5	40.5
2018	97	11.1	16	21.6	46.7	4.8	2.3	-0.03	114.4	25.3

Note: 'CR(5)' is the concentration ratio estimated based on the market shares of total assets of the 5 largest banks; 'CtA' refers to the ratio of capital to total assets (broad definition); 'CAR' refers to the group capital adequacy ratio; 'Provisions' is the ratio of provisions for bad debts as percentage of the loans to the non-financial sector; 'NPLs' is non-performing loans as a ratio of total loans; 'Margin' refers to the difference between accrued interest in loans to the non-financial sector and the accrued interest in deposits of the non-financial sector; 'NII' refers to the net interest income as percentage of total assets; 'RoA' refers to the return on assets based on earnings, without one-off operations; 'LtD' is the loans-to-deposits ratio of the non-financial private sector; 'Liquidity coverage' refers to the ratio of liquid assets (broad definition) to short-term liabilities.
Source: Bank of Greece.

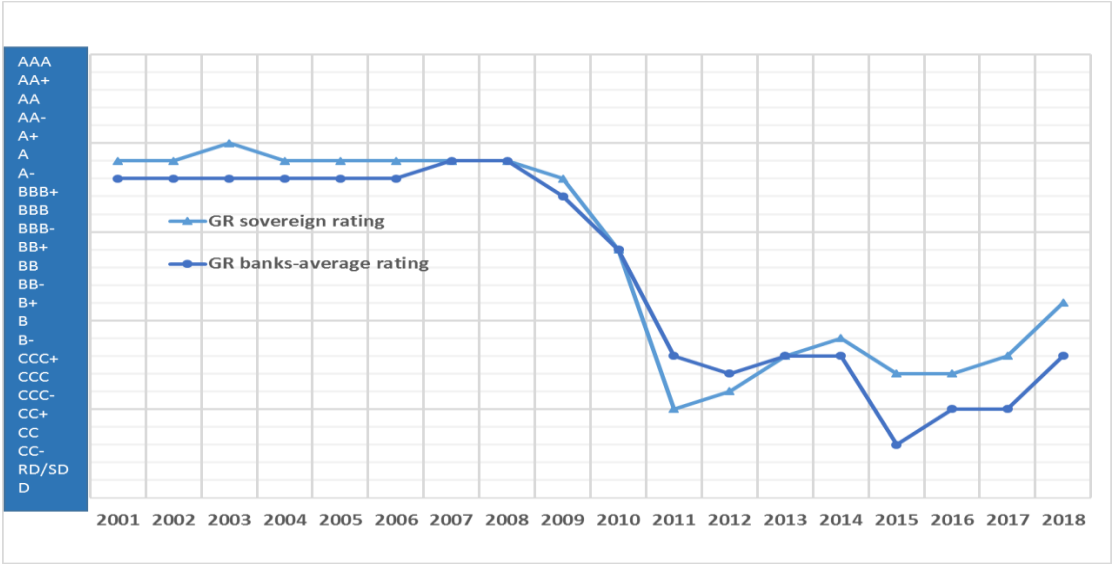
While the fundamentals of Greek banks remained resilient during the GFC, the Greek banking sector was eventually impaired by the Greek public debt crisis. In particular, the crisis that hit the Greek banks initially was a result mainly of the wide re-pricing of risks and the sovereign-bank negative feedback loop.[77] These factors were enough to freeze interbank money market

[76]However, between 1999 and 2009 the debt-to-GDP ratio was increasing at a rate almost double the euro area average (ECB, 2017).
[77]Gennaioli *et al*. (2018) document the functioning of the sovereign-bank nexus for 191 countries and 20 cases of sovereign defaults; Dell'Ariccia *et al*. (2018) and Fratzscher and Rieth (2019), among others, provide evidence for euro-area countries.

activity (Engler and Steffen, 2015) even for the largest and most creditworthy banks globally. At the same time uncertainty over the future of Greece in the euro area increased the 'redenomination risk' as perceived by depositors who started withdrawing deposits from Greek banks. Between 2009 and 2012 banks lost almost 40% of their deposits (around €90 bn) mostly to banks outside Greece.

However, what followed was not in line with developments in other euro area or developed economies. On top of the weaknesses in interbank lending, the outbreak of the Greek public debt crisis provided the ground for a series of rating downgrades that drifted downwards both the ratings of assets provided as collateral by Greek banks in ECB's monetary policy operations and the banks' own ratings, due to 'country ceiling' limits. Therefore, the public debt crisis that unfolded in Greece led to credit rating downgrades of both the Greek state and Greek banks. On the other hand, as shown in Figure 1, due to the good fundamentals of Greek banks their ratings became higher than the ratings of the Greek state between 2010 and 2013. This unusual development indicates that, at least at the initial phase of the Greek crisis, Greek banks' rating downgrades were mostly the result of the lower country ceiling due to the high country-specific risk rather than due to a worsening of idiosyncratic, i.e. bank-specific or sector-specific factors.

Figure 1. Ratings of Greece and Greek banks, 2001-2018



Note: The chart shows the development of the rating of Greece and the cross-section average of ratings of the four systemic Greek banks (NBG, Alpha, Eurobank and Piraeus Bank). Each line represents the average of ratings assigned by S&P's, Moody's and Fitch, at the end of the year.
Source: Refinitiv.

In 2011-2012 the effect of the Greek public debt crisis became even more intensive as uncertainty about the viability of Greece's membership in the euro area accumulated and peaked during the period from the announcement to the implementation of the Greek debt

restructuring.[78] Although the PSI and PSI+ eventually helped alleviate the pressure on Greek sovereign bond yields[79] the total losses reported on Greek banks' balance sheets were severe (around €45bn). For instance, as shown in Table 1 above, the return-on-assets of Greek banks stood at -2.6% for the fiscal year 2012, while their capital adequacy was undermined, as capital-to-total assets fell on average by more than 50% in 2012.

2.2 Official support: recapitalization and central bank liquidity provision

The restructuring of the Greek public debt undermined the capital adequacy of Greek banks. Therefore, they had to be recapitalized by using the funds foreseen in the Memorandum of Understanding (MoU) for the 2nd Economic Adjustment Programme of Greece, which was agreed between the Greek government and the European Financial Stability Facility (EFSF) in March 2012. An amount of €50 bn had been earmarked to support the Greek banking sector. The recapitalization (using half of the total foreseen amount together with some private funds) resulted in bringing the capital ratios of Greek banks back to among the highest in the euro area. Another €18 bn were used for the resolution of capital-deprived, non-systemic banks.

However, what was not possible at the time to be adequately considered in the funding agreement between the Greek government and its lenders was the continuation of the deterioration of the quality of assets held by Greek banks. Non-performing loans rose during the crisis and almost doubled between 2012 and 2018.[80] That meant that the legacy of the crisis, the ensuing deep recession and the political uncertainty together with the opportunistic behavior of strategic defaulters eroded further the capital base of Greek banks. Thus, while in February 2015 €11 bn were returned to the EFSF, as they were deemed unnecessary for the purpose of recapitalizing Greek banks, €10 bn were eventually 'earmarked' again in the European Stability Mechanism Programme of August 2015 (3rd Programme) and used for another recapitalization.[81]

Although deposits, which were the main source of liquidity for Greek banks since 2001 were flying away from the Greek banking system and despite the systemic hurdles in the money market across the globe, Greek banks remained active as borrowers in the interbank money market during the GFC. Eventually, since the Greek debt crisis erupted interbank lending to Greek banks followed an almost uninterrupted downward trend, to stabilize only as of mid-2016 (Figure 2).

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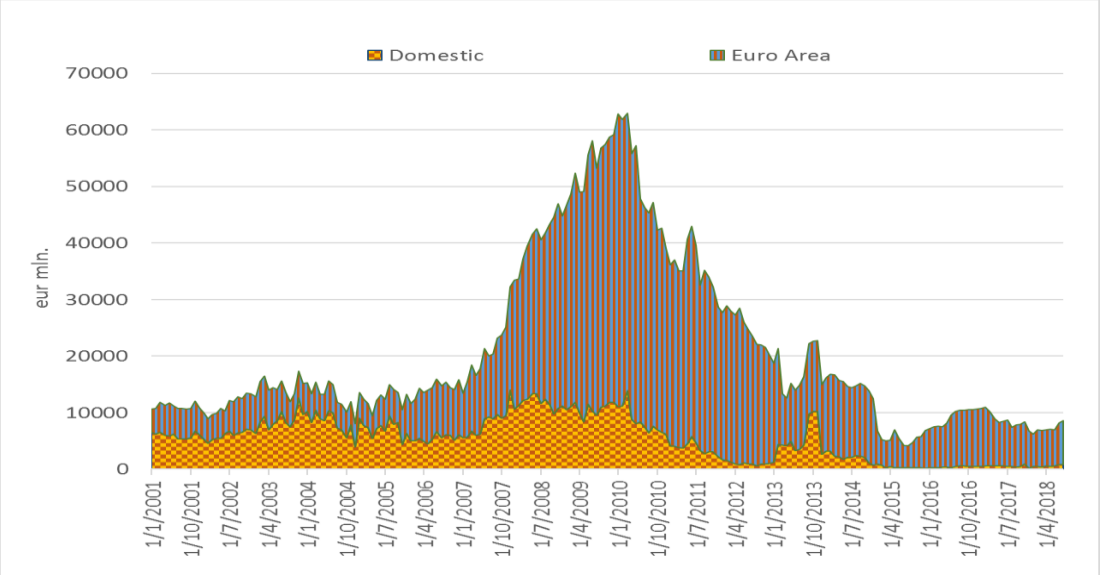
[78]The initial announcement of the intension to make private investors pay for holding Greek sovereign debt was officially made in spring 2011, while the debt restructuring was realized in two phases: the first, in February to April 2012, with the PSI (private sector involvement) in the restructuring of GGBs and the second with the buyback (PSI+) of December 2012.

[79] For instance, 10-year GGB yields declined from 16.4% in January 2012 to 6.2% in January 2013.

[80]For the issue of NPLs in the euro area interested readers may refer to Anastasiou *et al*. (2019) and Karadima and Louri (2020; 2021), while for the issue of strategic default in Greece, see Asimakopoulos *et al*. (2016).

[81] On 29 August 2018, the amount that had been used for the purpose of bank recapitalization stood at €5.4 bn (see: https://www.esm.europa.eu/sites/default/files/greece_exit_factsheet.pdf, retrieved on 5 March 2019).

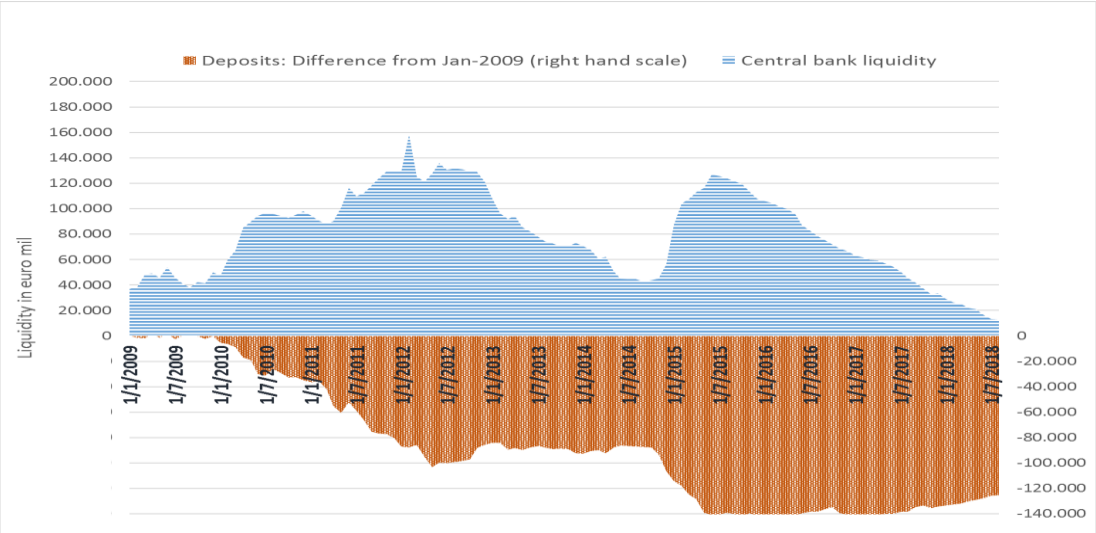
Figure 2. Interbank liquidity borrowed by Greek banks 2001-2018



Source: Bank of Greece.

Under these conditions, a potential lack of liquidity could build up to a full-scaled bank run as demands for deposit withdrawals escalated, especially in periods of increased uncertainty about the country's participation in the euro area (fear of *Grexit*). In this context, Greek banks resorted heavily to borrowing liquidity from the central bank. As shown in Figure 3 the provision of central bank liquidity was mainly used to cover the reduction of the deposit base of Greek banks and has been a crucial factor for avoiding the escalation of instability. Deposit withdrawals stabilized to a large extent following the implementation of capital controls in June 2015. Since then, the provision of liquidity by the ECB to Greek banks has been downsized and in 2018 fallen to the lowest level since Greece joined the euro area.

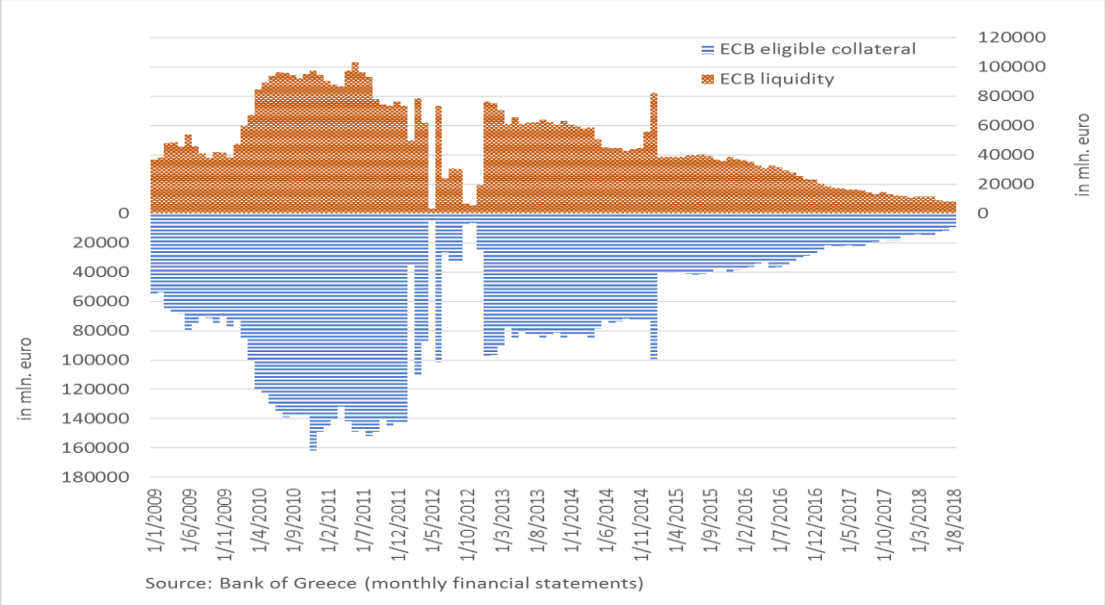
Figure 3. The deposit flight and central bank liquidity provision to Greek banks 2009-2018



Source: Bank of Greece.

The provision of liquidity to the Greek banking system by the ECB (through monetary policy operations) and the Bank of Greece (through emergency liquidity assistance) has been a crucial factor for avoiding the intensification of the banking crisis. What has not been documented yet is that there was also a negative feedback loop from the crisis to the ability of Greek banks to borrow from the Eurosystem.

Figure 4. Eurosystem liquidity provision to Greek banks 2009-2018



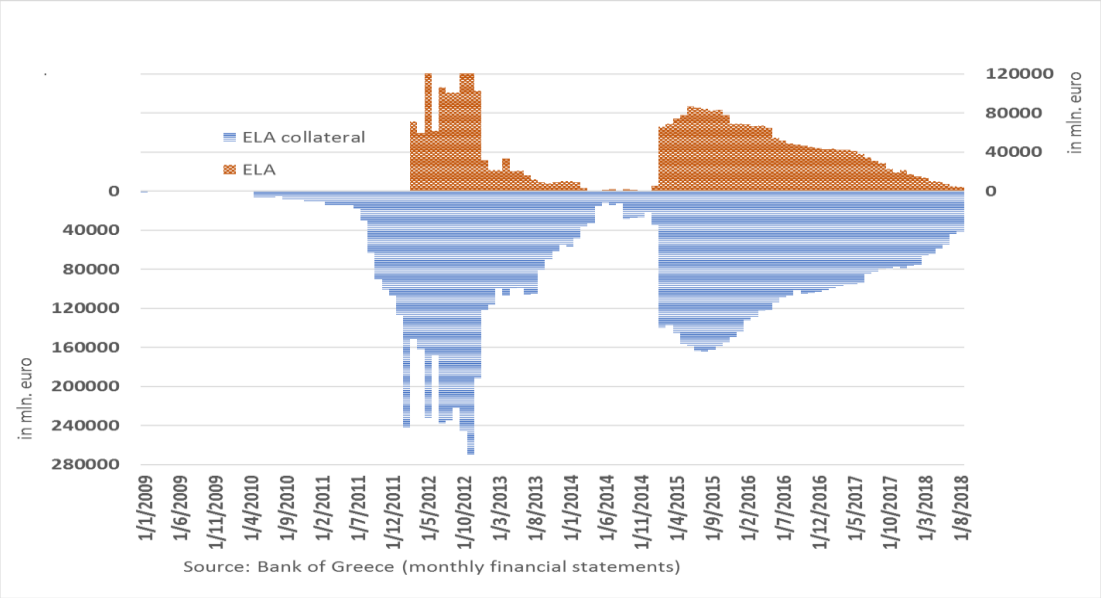
Source: Bank of Greece, monthly financial statements.

In particular, the Greek public debt crisis and the ensuing recession undermined the quality of assets held by the Greek banks. This development was directly worsening the prospect of Greek banks to resort to central bank liquidity. The reason was that the deterioration in quality and the decrease in market value of assets held by Greek banks also meant that both the quality and the value of the respective collateral, which was used for borrowing in the Eurosystem monetary policy operations, suffered likewise. This is shown by the blue bars in the bottom panel of Figure 4.

The effect of market developments on Greek banks' ability to absorb central bank liquidity through monetary policy operations intensified with the restructuring of the Greek public debt. The PSI eroded not only the capital base of Greek banks as we have already mentioned, but also the value of Greek government bonds that could be used as collateral to cover monetary policy operations. As a result, loans to the private non-financial sector comprised the main pool of assets that remained in Greek banks' balance sheets to be pledged for liquidity absorption by the central bank. However, according to the standing rules for collateral in monetary policy operations these assets did not meet various thresholds, apart from being of appropriately good credit quality, in order to cover liquidity borrowing from the

ECB.[82] So, Greek banks rapidly increased their resort to the more expensive emergency liquidity assistance (ELA) from the Bank of Greece.

Figure 5. Provision of ELA liquidity from the Bank of Greece to the Greek banks 2012-2018



Source: Bank of Greece, monthly financial statements.

Figure 5 shows that ELA liquidity was first used by Greek banks in early 2012, i.e. during the Greek public debt restructuring. Then, the Bank of Greece accepted collateral that could not be used in monetary policy operations to provide funding to Greek banks that had seen their capital being wiped out by the PSI. Note that the recapitalization of Greek banks for the losses incurred by the PSI began after the restructuring but was done in phases and was completed in mid-2013.[83] So, during this period the supply of ELA from the Bank of Greece played a crucial role as it bought time for Greek banks to proceed to capital increases in an environment of much less volatility and higher stock market valuations than that of the first half of 2012. Thus, in a sense the ELA provision during that period had all the characteristics of *bridge financing* and was not associated with a stigma for Greek banks.

After the end of 2012 and the completion of transfers of European Financial Stability Fund (EFSF) bonds from the official sector, i.e. by the Hellenic Financial Stability Fund (HFSF) acting on behalf of the EFSF, ELA liquidity borrowed by Greek banks started to fall until it became zero in May 2014. Still, this did not mean that Greek banks had turned a page. The second phase of the Greek crisis, i.e. the phase after the elections of January 2015, saw ELA liquidity

[82] Assets used as collateral must meet minimum value thresholds, originate from specific types of borrowers and be of specific categories of assets (see, ECB 2015).

[83] At first, the HFSF provided EFSF notes to Greek banks (HFSF 2013a) in April 2012 and December 2012. Eventually Greek banks share increases took place in May-June 2013 (HFSF 2013b).

skyrocketing as soon as the waiver of collateral quality threshold that had been extended by the ECB at the end of 2012 was pooled back.[84]

Combined with the intensified concerns about the prospects of the country as a member of the euro area, it resulted in a complete loss of investor and depositor confidence towards Greek banks. Eventually, to avert the prospect of a run on banks' deposits, the government had to impose controls on capital outflows in late-June 2015. The banks had already lost another €40 bn of deposits between January and June 2015 and deposits were close to €120 bn almost half of their value in 2009. With respect to liquidity needs this time marks the *darkest hour* of the Greek banking system, as Greek banks found themselves owing vast amounts of money to the central bank. But this time there was no more official support that could ensure the continuation of liquidity provision. In fact, the banks had hit their ELA ceiling. No further liquidity could be available.

In August 2015 the new government agreed to continue on a fiscally prudent path under the 3rd Economic Adjustment Programme. Since then the liquidity and capital base of Greek banks were strengthening although capital controls were in place until 2019. What is clear, though, is how the official sector interventions have provided support in the form of liquidity and capital to safeguard deposits and other banking operations in Greece.

2.3 NPLs and effects on credit provision and on the Greek economy

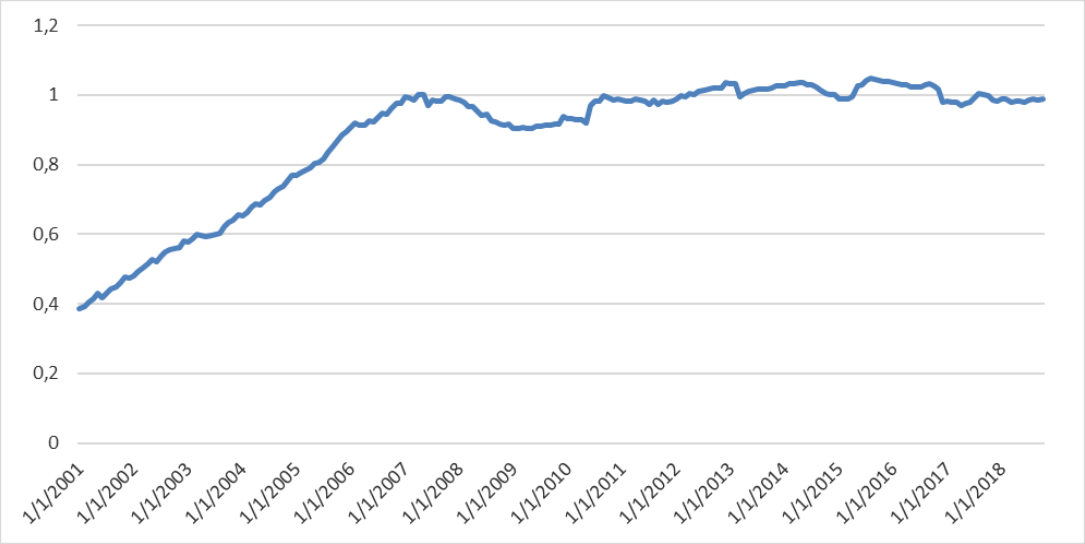
Despite official interventions the performance of Greek banks' assets could not improve. The return on assets (RoA) of Greek banks remained negative as the stock of non-performing loans was (and continues to be) the highest in Europe. Non-performing loans are the most important problem for Greek banks and a challenge for the authorities as they weaken lending to the economy.

The origins of this problem may be traced back to the period preceding the GFC. In particular, from January 2001 to October 2008, the credit expansion in Greece mostly involved loans to households for housing purposes and consumer loans: the total amount of mortgage loans rose fivefold, as did the total amount of consumer loans. On the other hand, in the same period loans to private non-financial corporations (NFCs) were only 1.7 times higher. It is worth noting that these developments took place against a GDP expansion, in real terms, of about 30%.

As Figure 6 shows the main recipients of lending from Greek banks before the crisis erupted were Greek households, as housing and consumer loans increased more than twofold (about 2½ times) relatively to NFC loans, in the period from January 2001 to mid-2007. Although the wealth effects of this kind of funding are not to be underestimated, it did not boost a technological upgrade of production or an expansion of the production capacity of the Greek economy. As Beck *et al*. (2012) argue credit to enterprises is positively associated to economic growth whereas household credit is not.

[84]In October 2012, the ECB waived the quality threshold for accepting Greek government bonds as collateral. This act also worked as a signal of support to the effort of re-normalization of the Greek economic and financial activity.

Figure 6. Composition of bank lending to the private sector of the Greek economy



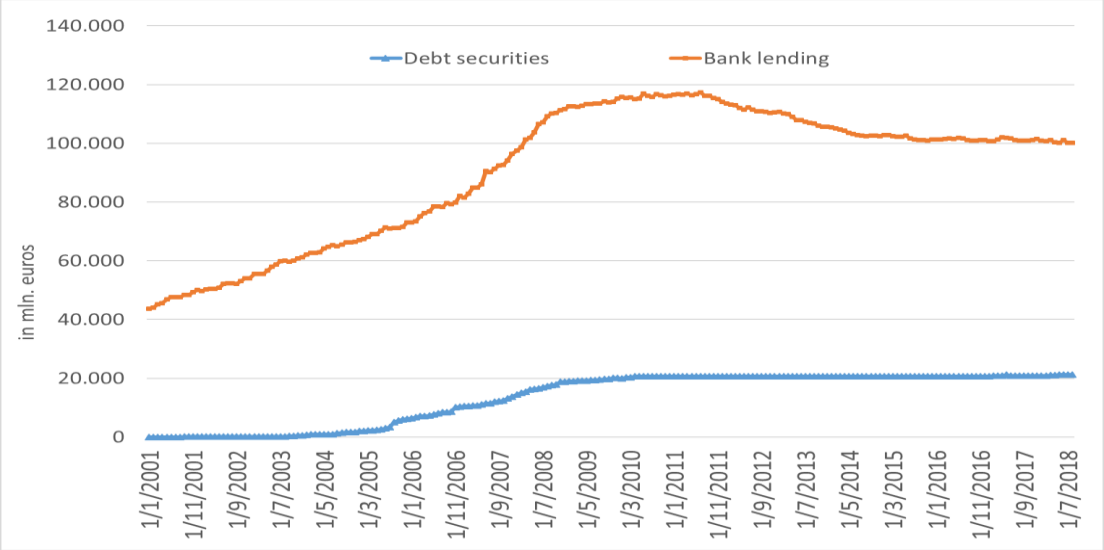
Note: The chart depicts the ratio of household loans to NFC loans for the Greek banking system. Household loans are calculated as the sum of mortgage and consumer loans, while NFC loans are loans to private sector enterprises; only domestic sectors are considered.
Source: Bank of Greece; authors' calculations.

So, Greek banks' credit policies before the GFC did not allocate funding efficiently with respect to real economic growth. If funding had been allocated in a way to favor investments in productive functions through supporting NFCs production, both the capacity of the Greek economy and its resilience to external shocks would have been stronger. Thus, the credit expansion strategy before the GFC possibly served the goal of myopic profitability of Greek banks, but it was procyclical and leaning towards expanding consumption more than upgrading the production base of the Greek economy. This would have been the case if credit was linked to investments in production and exports (e.g. upgrades of machinery, investments in expansion of activities abroad and investments in R&D and new technology).

Also, the sources of funding of the private sector of the Greek economy were not diversified. If households were to be affected by a credit contraction, as their only source of finance is bank credit, this is not equally true for companies. NFCs can borrow from the corporate bond market as well. However, as shown in Figure 7, the funding of NFCs was also relying predominantly on bank lending in the period before the GFC. The sum of lending to NFCs had reached around €115 bn at the onset of the Greek debt crisis in 2010, whereas debt securities rose to a little less than €21 bn. Note, however, that even in the case of debt securities credit was provided again by domestic banks, due to the clauses governing the domestic 'bond-loans'[85] and only a very small part, of this amount corresponds to eventual market financing in the form of corporate bond issuance.

[85] I.e. securities issued on a bilateral basis between a lender and a borrower, without the obligation of being introduced in a regulated market (Law 3156/2003).

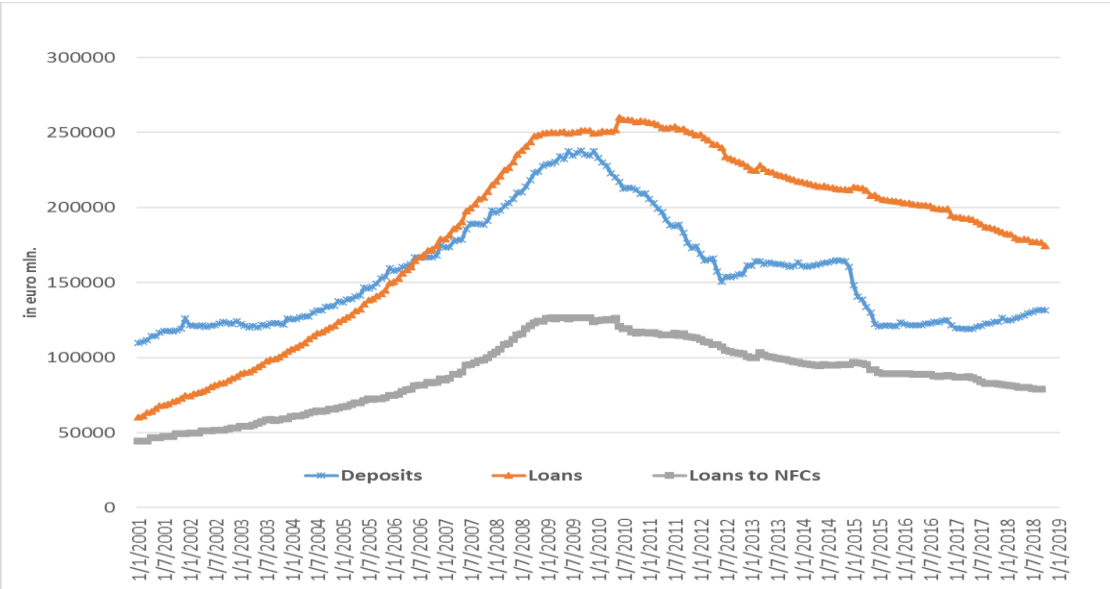
Figure 7. Credit provision to Greek non-financial corporations (NFCs) 2001-2018



Note: The figure illustrates the total sum of flows of credit to NFCs in Greece, in the form of either bank loans or debt securities since 2001. In order to estimate the level implied by flows of new credit, during this period, we have taken the level of loans and debt securities outstanding in January 2001 and added the net flows of new loans or the net issues of new debt securities respectively.
Source: Bank of Greece.

In this context, we examine the following two questions: (a) how have liquidity, capital and asset quality contributed to bank credit towards the Greek economy and (b) what has been the impact of both bank credit and market financing on economic activity in Greece.

Figure 8. Loans and deposits of the Greek private sector 2001-2019



Source: Bank of Greece.

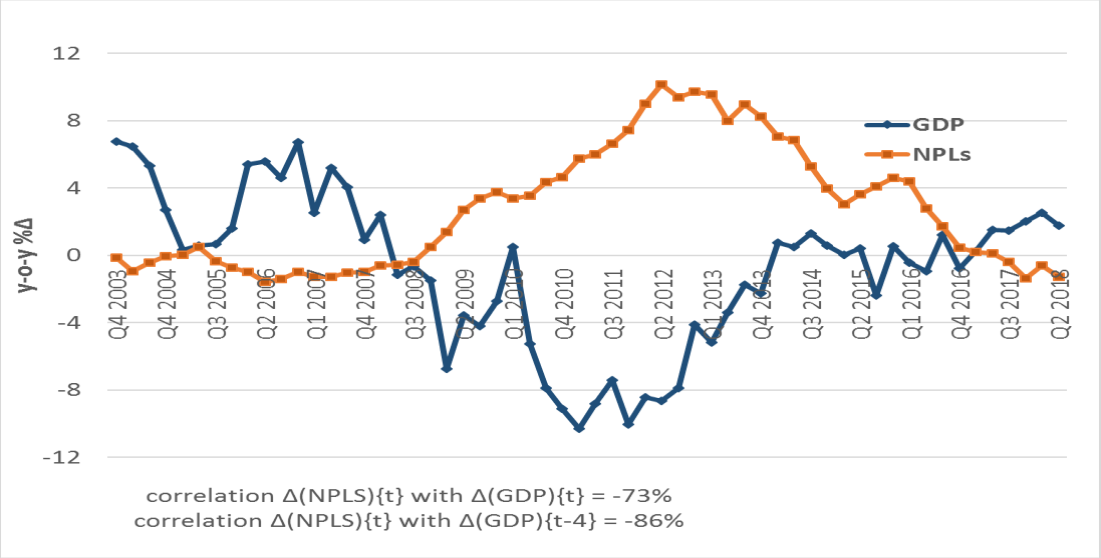
On the one hand, the capacity of Greek banks to lend to the Greek economy during the crisis was undermined by shortages in liquid assets. As discussed in the previous section, this led Greek banks to resort to central bank emergency liquidity amid an environment of collateral constraints. At the same time the bank credit provision to the Greek economy became negative in net terms. This is reflected in the decline of the loans to the private sector, which by and large was the result of both the weak capital position of Greek banks and scarce liquidity (Figure 8).

Therefore, we argue that there may be a chain of causal effects linking liquidity shortages with lower credit resulting in weaker economic activity:

$$\downarrow \text{Liquidity} \Rightarrow \downarrow \text{Bank credit} \Rightarrow \downarrow \text{Economic activity}$$

At the same time weak economic growth rates did not permit the healthy expansion of the asset side of the balance sheets of Greek banks. Figure 9 shows that the evolution of non-performing loans is strongly correlated to the growth rate of GDP, while the lead-lag relationship seems to run from GDP growth rates to NPLs.

Figure 9 Changes in non-performing loans and GDP growth rates 2003-2018



Source: Bank of Greece and Datastream; authors' calculations.

A channel, through which the worsening of the banks' balance sheets due to the high NPL ratios results in lower bank credit (and then to lower economic activity), could be stricter credit standards. In particular, the NPL ratio of euro area banks has been shown to be positively associated to stricter credit standards for new loans (ECB 2019). Therefore, we examine whether the high NPLs of Greek banks result in credit contraction with the probable causality being channeled through stricter credit standards. Then credit contraction may weaken economic activity and, by assumption, provide a feedback loop for higher NPLs, as shown below:

$$\downarrow \text{Economic activity} \Rightarrow \uparrow \text{NPLs} \Rightarrow \uparrow \text{Credit Standards} \Rightarrow \downarrow \text{Bank credit} \Rightarrow \downarrow \text{Economic activity}$$

Finally, weaker capital base of banks, may lead to reduced credit provision due to regulatory restrictions but also due to a more cautious stance from the side of the banks. This, in turn, is expected to have a negative effect on economic activity:

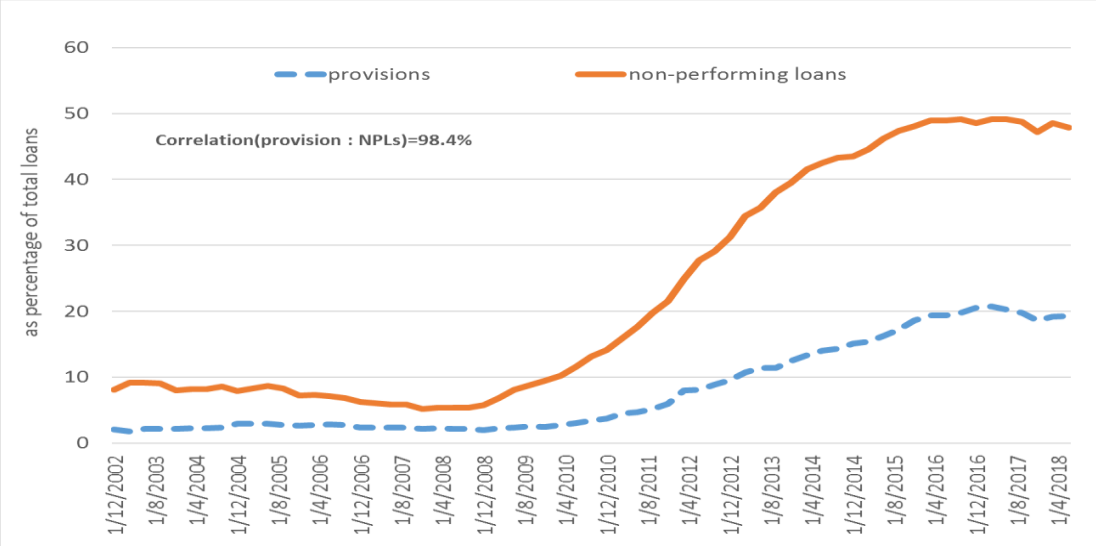
$$\downarrow \text{Capital} \Rightarrow \downarrow \text{Bank credit} \Rightarrow \downarrow \text{Economic activity}$$

3. Bank soundness and credit provision

3.1 The empirical setup

The main objective of the present section is to examine the effects exercised by variables associated with Greek banks' soundness on the supply of credit to the Greek economy. More specifically, we ask whether and by how much the provision of credit to the Greek economy has been affected by liquidity, capital and credit risk of the loan portfolio of Greek banks.

Figure 10. Provisions for loans vis-à-vis non-performing loans of Greek banks 2002-2018



Note: The figure above presents the evolution of non-performing loans and provisions as ratios to total assets of Greek banks. The correlation coefficient is the simple Pearson correlation.
Source: Bank of Greece; authors' calculations.

The data we use in this section involve financial ratios and credit provision and the series in our sample are in monthly frequency for the period from January 2001 to January2018. For measuring credit provision we take into account only net flows of credit. The annual change of the amount of net credit flows as a ratio to the total credit provided to the Greek economy

reflects the credit expansion or contraction better than a gross measure of credit that would contain a roll-over and re-classifications of past loans. Financial ratios reflect capital, liquidity and credit risk of the entire Greek banking sector. Capital is measured by the ratio of capital to total assets, liquidity by the ratio of cash and cash equivalents to short-term liabilities and asset quality or credit risk in Greek banks' balance sheets is measured by the ratio of provisions to total assets. Note that this measure is very closely related to the evolution of NPLs as shown in Figure 10, above.

In order to examine the effects of the three soundness indicators on bank credit we form a vector autoregressive model (Sims 1980) in which all variables are endogenous. This model allows us to examine whether the data indeed confirm the relationship of bank credit with liquidity, capital and asset quality of Greek banks as described in the previous section. By including lags of the dependent variables as well as by taking into account their variance-covariance, it has been shown (Stock and Watson 2001) that VARs capture the properties of the data accurately and provide robust estimations. Therefore, this setup will provide evidence related to the first sequence of the feedback loops that were described earlier. The model is denoted by the reduced form equation:

$$Y_t = A_0 + A_j(L) \cdot Y_{t-l} + u_{jt} \qquad (1)$$

$$with\ u_{jt} \sim iid(0, \Sigma)$$

In the above setup Y_j ($Y_{jt} = y_{1t}, y_{2t}, \ldots, y_{jt}$) stands for the vector of the endogenous variables *j*, A(L) stands for the vectors of the coefficients of the autoregressive and explanatory variables and Σ is the variance-covariance matrix. The number of lags appropriate for a robust estimation is chosen based on a combination of the Akaike (AIC), the Bayesian (SC) and the Hannan-Quinn (HQ) information criteria. If there is no unanimous agreement in the number of lags, we choose the lag structure dictated by two out of the three criteria.

VAR models are purely empirical setups that make use of data properties with the only restriction being that of a covariance stationary process. They are seen as superior for extracting forecasts of the expected path of the variables in question, but disadvantageous in the sense that they are not based on structural forms of relationships between the variables, so their results pose interpretation difficulties in the policy making process. On the one hand, this is the main reason for using Dynamic Stochastic General Equilibrium (DSGE) models for inferring the effects of policies on economic variables. On the other hand, these formulations are also subject to criticism for being stylized and over-restrictive. Interestingly however, a balance between theory and empirical results is proposed, as it has been shown that DSGE models can have finite VAR representation when several conditions are met (Ravenna, 2007; Morris, 2016).

To proceed we form a structure of relationships by introducing restrictions in our variables. In this way we produce structural shocks by transforming the reduced form VAR to a VAR with a specific structure. So, the representation of the innovations from this setup is

$$B(L)y_t = e_t, Ee_te_t' = \Sigma \qquad \text{and} \qquad Ee_te_{t+s}' = 0, \forall s \neq 0,$$

$$\text{Where} B(L)y_t = A_0^{-1}A(L) \text{ and } e_t = A_0^{-1}u_t.$$

The structural VAR model must be either exactly identified or over-identified to be estimated. A precondition for exact identification is the existence of an identical number of parameters in A_0 as there are in Σ, i.e. the covariance matrix from the reduced form. The reason is that this allows for recovering the structural parameters from the reduced form model. Finally, we assume that the model satisfies the rank condition based on Hamilton (1994). On this account, we incorporate the following structural restrictions for the estimation of the impulse response functions:

$u_1 = C(1)*e_1 + C(2)*e_2 + C(3)*e_3 + C(4)*e_4$

$u_2 = C(4)*e_1 + C(5)*e_2$

$u_3 = C(6)*e_1 + C(7)*e_3 + C(8)*e_4$

$u_4 = C(9)*e_1 + C(10)* e_3 + C(11)*e_4$

With the following notations for the residuals estimated by the VAR in equation (1):

e_1, for Δ(bank credit),

e_2, for Δ(liquidity),

e_3, for Δ(credit risk),

e_4, for Δ(capital),

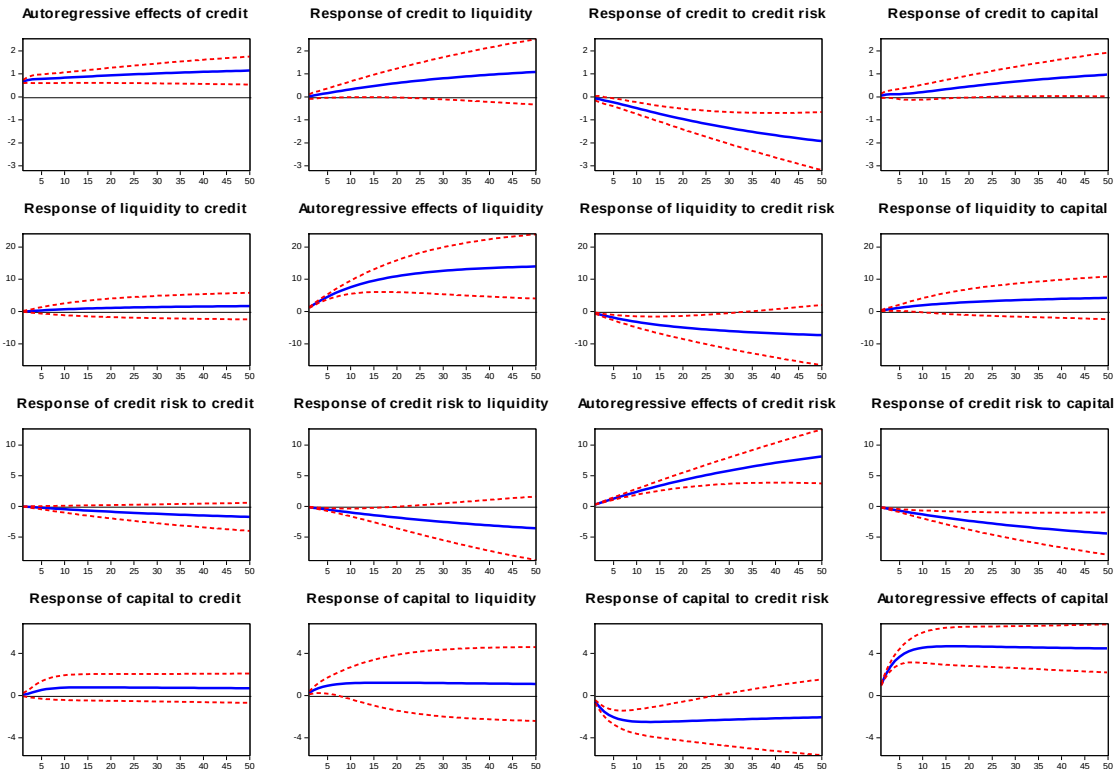
Thus, in the 1st shock we assume that banks decide to provide credit based on a 'full information' scheme, i.e. taking into account developments in liquidity, asset quality and capital with the autoregressive factor reflecting all other factors that affect credit. The 2nd shock stems from liquidity, which we assume to be affected by credit and from its own lags, which again reflect all other factors. The 3rd shock reflects developments related to credit risk (provisions) of Greek banks and relates to credit and capital as well as to its autoregressive structure. Finally, we assume that developments related to capital adequacy, on top of the factors captured by own lags, relate also to the asset quality of Greek banks, i.e. the ratio of provisions to total assets, and to credit. The former affects the numerator and the latter the denominator of the ratio of capital-to-total assets.

3.2 Findings

First, we specify the number of lags that are necessary in our estimation. For this purpose, we make use of the information criteria (AIC, SC and HQ). The values of the criteria are reported in Table A1 in the Appendix. From these criteria we conclude that the optimal number of lags lies between 1 and 3, depending on which of the criteria is used. So, we choose to specify a VAR(2), i.e. a vector autoregression with variables being lagged twice. Also, the stability of the VAR is indeed confirmed as no roots lie outside the unit circle, as shown in Figure A1 in the Appendix. Figure 11, below, illustrates the impulse response functions (IRFs), which are used for quantifying the effects a shock in each of the variables will have on the rest of the variables of the VAR, according to the restrictions described in Section 3.1.

We begin with the variable of interest, i.e. changes in credit. Our results show that all ratios considered have the anticipated results on credit. In particular, the most profound effect on credit contraction is exercised by credit risk as measured by the ratio of provisions-to-total assets. We find that (a) the relationship between developments in credit risk and credit is negative, (b) the effect of credit risk passes-through changes in credit fast and (c) it has long-lasting effects as innovations produced at a given time (t) continue to exercise statistically significant effects even 25 months later (t+25). So, this finding suggests that the sharp deterioration of the quality of Greek banks' balance sheets as captured by the sharp rise in provisions explains a significant proportion of the credit contraction witnessed post-crisis.

Figure 11. Impulse responses of bank credit, capital, liquidity and credit risk



Note: The figures above show the accumulated response of each variable (Δcredit, Δliquidity, Δcredit risk, Δcapital), in a horizon of 50 months, to shocks stemming from the rest of the variables in the system. Shocks are defined as equal to one standard deviation of the variables and the impulse response functions are based on the estimation of the structural VAR between credit and financial ratios of Greek banks as described in section 3.1.

Provisions for bad loans during our sample period have a standard deviation of 1.45 percentage points (p.p.) annually. This is estimated to result in a drop in the annual rate of change of credit by 2 p.p., at a 4-year horizon. These findings suggest that the large rise of non-performing loans, which led to rises in provisions for bad loans in the balance sheets of Greek banks, is a significant and sizeable factor explaining credit deterioration towards the Greek economy.

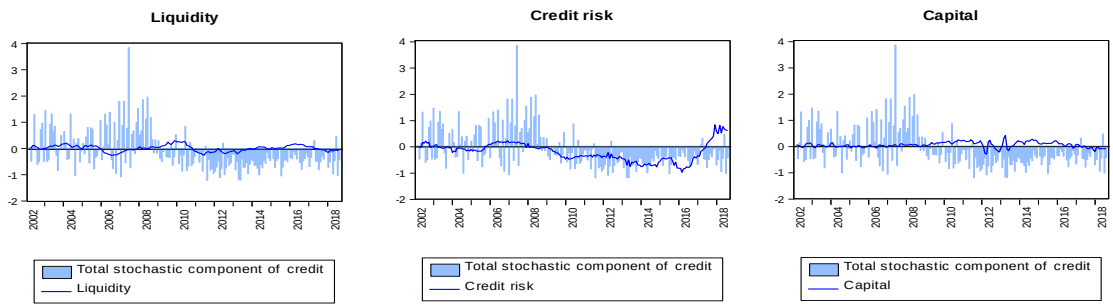
On the other hand, liquidity and capital counterbalance the negative pressure exercised by risk on credit. A positive shock in liquidity or in capital is found to exercise positive effects on the rate of change of credit. So, both the ample liquidity provision by the central bank and the capital injections mainly by the official sector that helped recapitalize Greek banks have provided a relief for the reduction in credit due to the deterioration of their assets.

However, the size of the effects exercised by liquidity and capital as well as their term structure lead to the conclusion that this remedy for the problem of bad loans was only partially effective. In particular, a one standard deviation shock in liquidity (i.e. an annual rise of 2.69 p.p. in the ratio of cash and cash-equivalent assets to short-term liabilities) is found to lead to a rise in credit of 0.67 p.p. in a 2-year horizon. After that point the effects of liquidity become non-significant. So, even though a rise in the supply of liquidity towards Greek banks results in credit expansion, its effects are much weaker than the pressure incurred from bad loans and last only for a short-to-medium term horizon (1 to 2 years).

Strengthening of the capital base of Greek banks has both stronger and longer-lasting effects on credit. More specifically, we find that a one standard deviation (i.e. 1.85 p.p.) rise in the ratio of capital-to-total assets, leads to a rise of credit by 1.15 p.p.in a 4-year horizon. On the other hand, capital injections (a) take a long time to become effective with respect to credit provision and (b) while they have larger effects than liquidity on credit, they cannot fully counterbalance the strain on credit exercised by the problem of bad loans.

The historical decomposition of the effects exercised on credit by the three financial ratios examined reveal certain interesting findings. Figure 12 shows the impact of the rise in bad loans during the crisis period on credit. Increases in credit risk (i.e. provisions for bad loans) which are negatively associated to changes in credit, explain most of the negative change in credit supply to the Greek economy. On the other hand, a lack of liquidity during 2011-2012 (i.e. the PSI period) is also found to have dampened credit but this has only been temporary and limited, while capital rises during the crisis period have had a positive but limited effect due to the recurrent deterioration of the capital base.

Figure 12. Historical decomposition of the stochastic component of Δ(credit) 2002-2018



Finally, although our main focus is on effects exercised on credit by liquidity, capital and asset quality, some interesting results are for the first time reported by our empirical framework. Specifically, we find that, while none of these variables is affected significantly by credit, a

significant feedback loop exists between (a) credit risk and liquidity and (b) credit risk and capital. Thus, we find first that liquidity exercises a short-term dampening effect on credit risk, while credit risk has a sizeable and lasting negative effect on liquidity. This finding supports the anecdotal evidence that the deterioration of the quality of assets used as collateral in liquidity-provision operations by the central bank exercised a downward push on liquidity available to Greek banks. At the same time, liquidity had a constraining, albeit limited, effect on the further deterioration of the quality of assets. This could be the case if banks rolled over loans of Greek NFCs that would otherwise become non-performing taking advantage of the liquidity provided by the central bank.

Also, we find that strengthening the capital base of Greek banks provided a partial backstop for avoiding further deterioration in the quality of their loans, whereas at the same time the deterioration in the quality of assets of Greek banks led to impairments of their capital base. This is a well-anticipated chain of effects. Greek banks' capital was impaired by the high level of NPLs, while recapitalization of Greek banks provided some remedy for curing the low quality of assets by raising the proportion of good loans with new credit.

3.3 Out-of-sample: The Covid-19 shock

Forwarding these results to the Covid-19 period can serve as an out-of-sample exercise. But as the situation is still evolving, we may only provide rough calculations based on provisional figures and estimations published in official statistics. So, taking into account this disclaimer, we assume that NPLS, caused by the Covid-19 recession will rise to 8-10 bn euros, as is the January 2021 expectation of the Bank of Greece (2021). This equals to a shock of around 10% of performing loans (see Table III.3 in Bank of Greece 2021, p. 30), i.e. a rise of 14%-15% if we compare this figure with the total outstanding NPLs before the pandemic. Based on our results this shock would imply a contractionary effect on bank credit to the non-financial sector of around 11%-13%, during a 4-year horizon.

On the other hand, the fact that Greek banks have benefitted from the emergency programmes of the ECB (and in particular the Pandemic Emergency Long-Term Refinancing Operations-PELTROs) provides comfort, that this time the immediate effect of the rise of NPLs will be remedied to a large extent by the liquidity support offered by the ECB (ECB, 2020). In fact, by December 2020 Greek banks had absorbed €41 bn in central bank liquidity, which compares to €7 bn in December 2019. Additionally, bank deposits from the non-financial private sector of the Greek economy had increased by around 11 bn in the same period. This means that a positive liquidity shock of around 21% must be considered in order to estimate the total effect of the Covid shock on credit supplied by Greek banks to the economy. This liquidity increase may be transformed to a 5% rise in bank credit to the Greek economy in a period of 2 years.

As shown in Figure 11, the effects of NPLs on credit are roughly equally distributed across a 4-year horizon. The time dimension of our estimated IRFs shows that in the first 2 years liquidity absorbed by Greek banks from the central bank may almost entirely counterbalance the negative effects that the expected rise in NPLs will have on bank credit. What remains unaddressed, are the longer-run effects of NPLs on bank credit, which, based on the

estimations presented earlier, will remain active until 4 years after the shock (i.e. the rise in NPLs). This longer-term effect underlines the importance of a permanent solution to the NPL problem. This is the purpose of the solution proposed by the Bank of Greece (2020), which supports the creation of an asset management company to work in parallel to the already established asset protection scheme (also known as 'Hercules'). Similar solutions (national 'bad banks' are starting to be discussed also at the European level as a similar NPL problem is of concern to several euro-area economies.[86]

4. Bank credit, market financing and growth

4.1 The empirical setup

The quantification of interactions between financial and economic activity should be done carefully avoiding mixing stocks with flows. Biggs et al. (2010) argue that the statistical evidence on the link between credit and growth is weak due to the use of stocks data (credit) to explain flows (GDP), which also is the reason for finding that the financial cycle lasts longer than the business cycle. Thus, they propose to use the annual change in flows of bank credit to the private sector as a ratio to GDP in order to predict GDP growth, instead of the usually employed changes of outstanding credit or the credit-to-GDP measure for financial cycles. They support this claim (a) by noting that GDP is a flow variable, so its changes (i.e. GDP growth rates) are the first derivative of a flow variable, which is equivalent to the partial derivative of GDP related to flows of credit and (b) by providing evidence that fluctuations in the credit impulse around zero lead to fluctuations in GDP growth around its trend (Biggs and Mayers, 2009).

Distilling from these works, we may draw some conclusions useful both for the theoretical priors and for the empirical setup: credit is expected to contribute to economic activity and this relationship should involve credit flows in order to avoid measurement biases in our estimation. Following Biggs et al. (2010) we focus (a) on private demand for assessing economic activity and (b) on credit impulse for examining the effects of credit to NFCs on private demand. In particular,

$$\textit{Private demand} = \textit{private investment} + \textit{private consumption} \qquad (2)$$

As shown in Table 2, private demand, i.e. consumption and investments by the private sector, in Greece represents the largest proportion of economic activity, ranging from a little more than 82% of the 2011 GDP to 78% of the 2019 GDP. Also, Table 2 indicates that while consumption has partially resumed, by 2019, compared to the level of 2011, gross fixed capital formation (GFCF) continues falling.

[86] See, Andrea Enria "Bank asset quality: this time we need to do better" (retrieved by ECB's website on 15 February 2021, link).

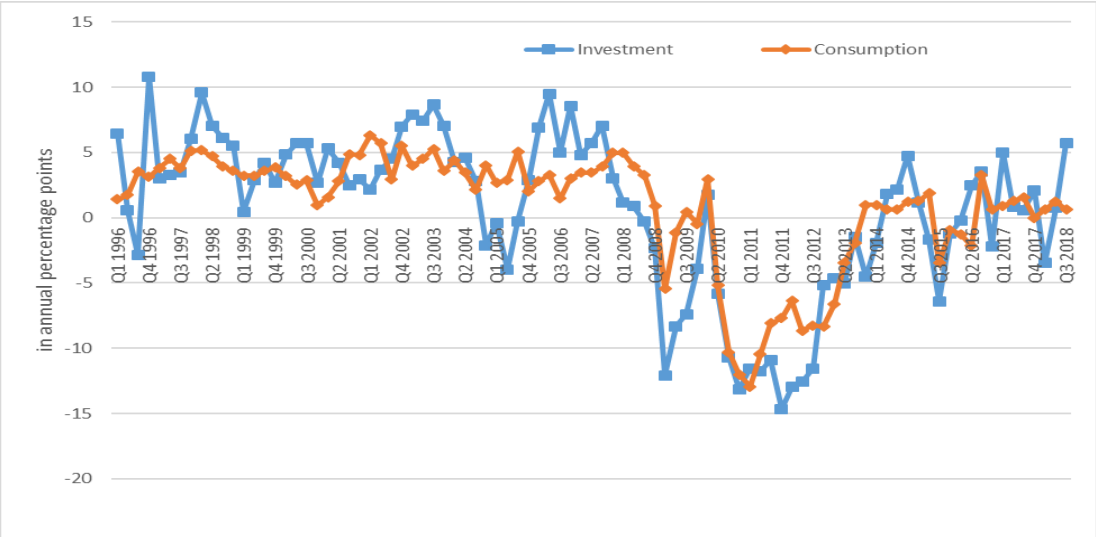
Table 2. GDP, private consumption and fixed capital formation in Greece (2011-2019)

Aggregates (in Eur mln.)	2011	2015	2019
A: GDP	201,377	182,500	190,268
B: Private consumption	137,677	122,501	129,734
C: GFCF	27,698	19,642	19,348
(B+C)/D: Priv. dem. (%GDP)	82.12%	77.88%	78.35%

Note: The figures above are in constant prices (chained linked volumes, series) in annual frequency, for the end of each year denoted in the first line of the table. Private consumption is the final consumption excluding general government. GFCF stands for gross fixed capital formation.
Source: Eurostat.

Starting from (2) we may observe the growth rate of private demand by taking annual changes in investment and consumption. Thus, for *private investment* we take the annual percentage change of the gross fixed capital formation and for *private consumption* the annual percentage change of the private consumption expenditure (PCE). Figure 13 shows the two components of private demand, for Greece.

Figure 13. Components of private demand 1996-2018 (annual changes)



Note: The series depicted are in real values. **Source:** Datastream; authors' calculations.

So, changes on private demand may be approximated as shown below:

$$\%\Delta yoy(Private\ demand) = k\%\Delta yoy(GFCF) + (1-k)\%\Delta yoy(PCE) \qquad (3)$$

Where, k is the ratio of GFCF to total private demand and $(1-k)$ is the ratio of private consumption to total private demand. In a similar concept, we only consider financial flows to the non-financial sector of the Greek economy. We do so by taking into account net flows of bank credit to Greek NFCs as a share of Private Demand as reflected in (4):

Credit impulse = %y-o-yΔ(Net flows of bank credit)/Private Demand (4)

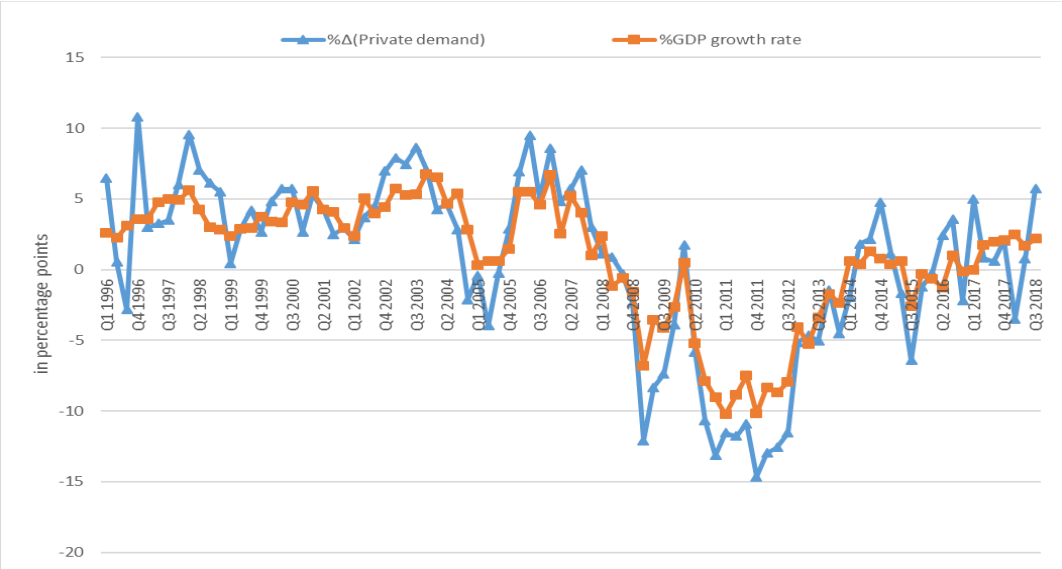
We examine the effects of bank and market financing both on the percentage annual growth rate of private demand and, separately, on its investment component. This is an issue of particular interest to the Greek economy, as investment expenditure is a significant contributor to GDP growth and has multiplier effects on long-term growth, as it leads to permanent rises of the production capacity.

Also, in a similar way, we construct the market financing variable of interest, which we call '*market impulse*', with which we examine the effects of equity and debt securities both combined and separately:

Market impulse = %y-o-yΔ(Net issuance of securities)/Private Demand (5)

The series in our sample are in quarterly frequency for the period 2001Q1 to 2018Q1. As indicators of economic activity, we have collected data for gross fixed capital formation, private consumption and GDP from Datastream. Financial activity reflects flows of Greek banks' credit to NFCs as well as issuances of new equity and debt securities by Greek NFCs. All financial variables are net of redemptions.

Figure 14. Economic activity in Greece 1996-2018



Note: The series depicted are in real values. **Source:** Datastream; authors' calculations.

As shown in Figure 14, our measure of economic activity in Greece closely follows the real GDP growth rate. The deviation between the two relates mostly to the public sector's contribution to economic activity. As the focus of our research is the private sector this deviation is not a problem. On the contrary, it provides a considerable degree of comfort as we do not deal with the direct effects of the Greek sovereign debt crisis, nor have we to touch on complex issues such as fiscal multipliers.

Our basic model examines the effects of bank and market financing to changes in private demand and its components. Again, we form a vector autoregressive model (VAR) in which we treat all variables as endogenous taking into consideration in our empirical setup structural features. In particular, a known limitation of VARs is that they provide weak structural inference and, thus, make it difficult to assess the effects of policy interventions. Incorporating structural features in vector autoregressive models is both robust in its estimation and policy-relevant (Sims and Zha, 1995). Therefore, we use a SVAR model to examine the effects of bank credit and market financing on private economic activity in Greece. More specifically, we impose a structure on the model's relationships based on assumptions related to the sequence of effects expected between our variables (Dimelis et al., 2017). *First,* we assume that market financing is exogenous to bank financing as it depends on broader market conditions. *Second,* we assume that bank credit is exogenous to domestic economic activity. *Third,* we make domestic economic activity dependent on both market and bank financing.

In order to produce structural shocks, we transform the unrestricted VAR model by conditioning the responses of private demand and its components to the endogenous factorization of the rest of the variables. To describe the structural factorization consider the following: let $A(L)y_t = u_t$, denote the reduced-form VAR setup from the previous section for each endogenous variable examined. Then, the innovations from this setup are:

$$B(L)y_t = e_t, Ee_te_t' = \Sigma \qquad \text{and} \qquad Ee_te_{t+s}' = 0, \forall s \neq 0$$

$$\text{Where } B(L)y_t = A_0^{-1}A(L) \text{and } e_t = A_0^{-1}u_t.$$

For the estimation of the impulse response functions we incorporate the following structural restrictions:

$u_1 = C(1)*e_1 + C(2)*e_3$

$u_2 = C(3)*e_2 + C(4)*e_3$

$u_3 = C(5)*e_1 + C(6)*e_2 + C(7)*e_3$

We use the following notations for the residuals estimated by the VAR:

e_1, for bank credit (credit impulse),

e_2, for market financing (market impulse),

e_3, for economic activity (%yoyΔ(private demand), %yoyΔ (GFCF), %yoyΔ(PCE))

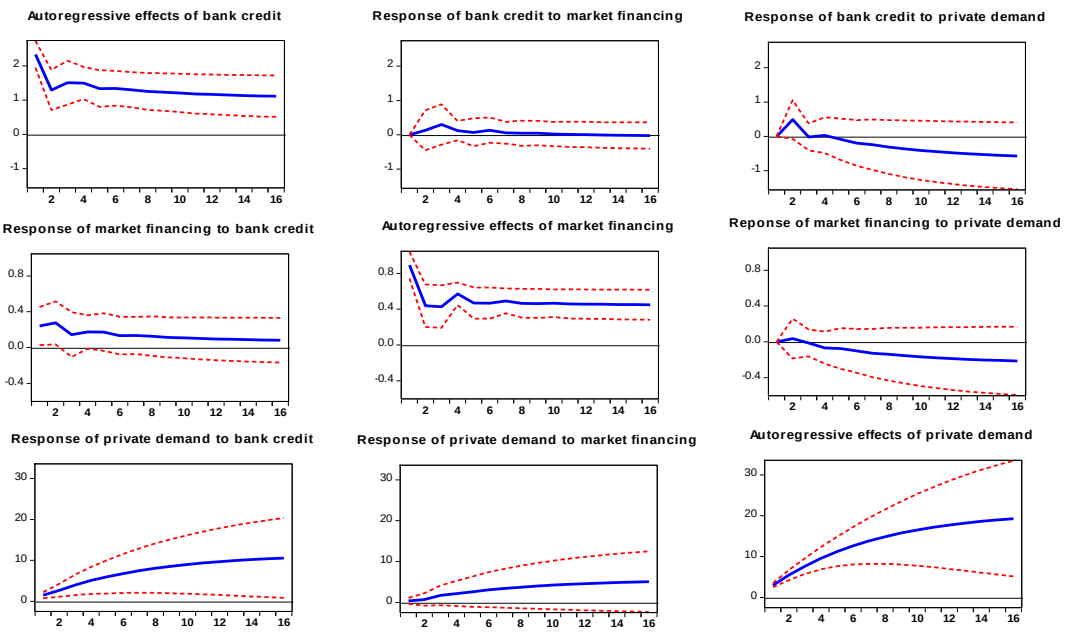
Thus, the first shock stems from bank credit and describes the feedback from economic activity to credit on top of the latter's autoregressive effects. Similarly, in the second shock we assume that investors' decisions shaping market financing while reflecting domestic economic activity are exogenous based on broader market conditions. Finally, in the third shock a broader structure is anticipated to be reflected by economic activity, as it relates to bank credit, market financing and other factors captured by its own lag structure.

4.2 Findings

The first relationship we explore is the one between financing (bank and market) sources and changes in private demand. So, we first choose the lag structure of our model relying on information criteria such as the Akaike (AIC), Bayesian (SIC) and Hannan-Quinn (HQ). As our data are in quarterly frequency the finding that inserting two lags in each equation provides sufficient information is reasonable. This implies that movements of the variables of our model exercise effects on each dependent variable within a horizon of one semester.

We rely on the output of the impulse response functions (IRFs) to draw evidence for and quantify the effects of bank and market financing on economic activity (private demand). These IRFs are shown in Figure 15 and measure the accumulated impact of a shock in one of the system's variables on each dependent variable for a period of 16 quarters, i.e. four calendar years.

Figure 15. Impulse responses of bank credit, market financing and private demand



Note: The figures show the accumulated response of each variable in a horizon of 16 quarters (i.e. four calendar years) to a one standard deviation shock stemming from the rest of the variables in the system.

We find that both (a) bank credit, measured as the change in credit flows of one quarter vis-à-vis the respective quarter of the previous year as a ratio to private demand and (b) market financing measured in a similar fashion, are positively and significantly related to changes in private demand.[87] In particular, a shock on credit impulse equal to one standard deviation (i.e. a 2.7 p.p. annual change in net flows of credit as a ratio to total private demand) results to a rise of 10.5 p.p. in private demand, aggregated during a horizon of four years after the

[87]Note that we have also employed the definition of credit and market impulses, as ratios to GDP; the results of the respective estimations are very similar to the ones reported here.

shock. That means that the reduction of credit has had sizeable effects on private demand. Although translating the development in net credit flows into total credit provision is not straightforward, this result indicates that the credit contraction since 2010 weakened private demand and, as a consequence, deepened the recession.

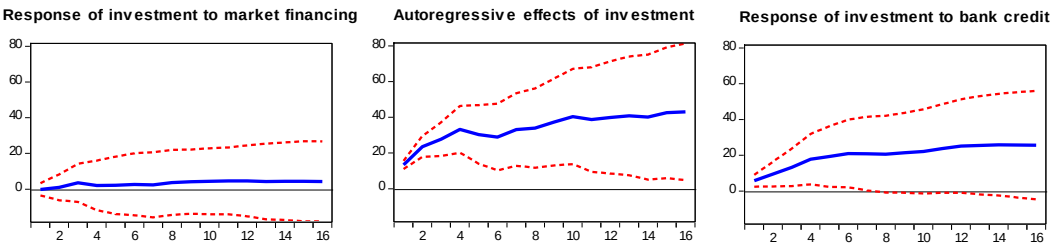
A similar weakening of economic activity is found to have resulted from the lack of market financing for Greek NFCs. Specifically, market financing is found to exercise effects on private demand which are comparable to those exercised by bank credit, i.e. a one standard deviation shock (equal to 0.89 p.p.) on market financing produces a 5.1p.p. change in private demand after four years, although with reduced statistical significance. But as the Greek economy has been predominantly bank-based with respect to its funding sources, the historical effects of market financing on economic activity have been less pronounced than those of bank credit.

Additionally, we find that there is a feedback loop between economic activity and bank credit. The pass-through of the change of net bank credit flows, as captured by the credit impulse, to a change in private demand is found to be almost one-to-one after two quarters. This means that banks take into account the direction of economic activity when they supply credit to the economy. A positive/negative change in private demand results to an equally sized positive/negative effect on flows of bank credit as a ratio to private demand.

Therefore, credit contraction led to a deepening of the recession during the crisis period, whereas this also fed into credit provision by further weakening credit. As a result, a self-feeding chain of interactions between bank credit and economic activity has worked in the direction of intensifying the economic conditions underlying the Greek crisis. At the same time market financing could not provide a remedy to this vicious circle as it has been much smaller in volume than bank credit.

However, a restriction to our results in relation to market financing is that we have taken into account only the domestic bond issuance. Large Greek NFCs, mainly industrial companies with export orientation, have managed to tap the international bond market for more than €8.5 bn since 2013. These amounts have been used mainly for paying back expensive bank loans, as the bond issuance came at a gradually decreasing yield benefitting from the overall trends in the European corporate bond market. Therefore, the effects of market financing may eventually be amplified for the Greek economy, should this trend continue. There is scope to wait for such a development if we consider (a) the ongoing initiative about establishing a true Capital Market Union in the EU and (b) the support provided by ECB's quantitative easing.

Figure 16. Impulse responses of bank credit, market financing and investment



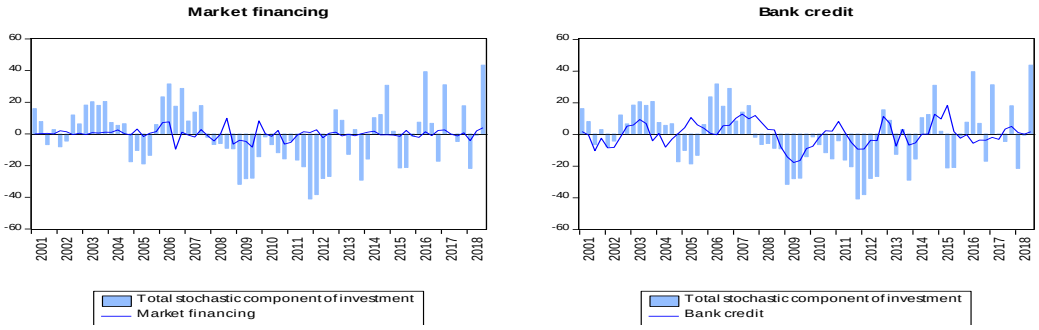
Note: The figures above show the accumulated response of private investment to a one standard deviation shock in market financing and bank credit within a horizon of 16 quarters (i.e. 4 calendar years).

In order to explore further the mechanism of the effects exercised by financing on economic activity in Greece, we have examined separately the effects exercised by bank credit and market funding to private sector investment. The variable used for capturing investment is the year-on-year change of gross fixed capital formation in real terms. Therefore, we have formed a separate VAR to examine the effects exercised on private investment by bank credit and market financing. Figure 16 illustrates the IRFs estimated from this VAR.

Overall, these findings indicate that the effects of bank credit and market financing on private investment are more pronounced than the ones exercised on private demand. Recalling that the latter contains an investment and a consumption component, we may provide a possible interpretation of the mechanism through which finance affects Greek economic activity: mainly through investment. As expected, our results show that the weakening of bank credit during the crisis intensified the recession by reducing investment.

The historical decomposition of the stochastic component of private investment, i.e. y-o-y %Δ(GFCF) illustrated in Figure 17, confirms this intuitive result. Especially, during the periods 2009Q1-2010Q1, 2013Q4-2014Q1 and in 2016Q4 negative bank credit flows are shown to explain the contraction in investment. On top of this effect, the negative flow of market financing provides an additional explanation to the contraction of investment in 2008Q4-2009Q3 and 2011Q1-2011Q3. Another interesting aspect of this finding is that bank credit and market financing, if directed towards productive investment, would not only impact significantly the growth of the Greek economy but also the desired structural quality.

Figure 17. Historical decomposition of the stochastic component of y-o-y %Δ(GFCF)



4.3 Out-of-sample: The Covid-19 shock

Based on the estimations presented in Section 3.3, we form anticipations for the effect the Covid shock may have on economic activity, as channeled by bank credit and measured by private demand. So, if we expect a contraction of bank credit by 5%, due to new NPLs net of the effect of increased bank liquidity, this will result to a contractionary effect on private demand equal to 10%, spread in 4 years after the shock. By assuming that private demand

will remain, as percentage of GDP, close to the level of 2019 (78%), the credit contraction may lead, *ceteris paribus*, to a contraction of around 8% of GDP, distributed across 4 years.

On the other hand, the Covid period has some particularities. Several countries around the world have proceeded with government support measures, that aim to provide an official channel of funding to the private sector of the economy. In Greece, this role has been played by liquidity provision, in the form of 'repayable advances' and guarantees to corporates and self-employed professionals, affected by the pandemic. These measures are estimated to be around €7.5 bn, or around 4% of the anticipated GDP figure for 2020.[88] Therefore, if this funding to the Greek private sector has the same consequences on economic activity, as bank credit, then it could almost entirely offset the negative consequences the rise in NPLs will have on bank credit, taking into account the increased bank liquidity (i.e. liquidity by the central bank and deposits).

However, the horizon of the measures plays a very important role. Indeed, they may have a very important effect in the short run, but, due to the fact the rise in NPLs has a more persistent effect on bank credit, these measures should last for at least the horizon needed for bank credit to be able to support economic activity.

Finally, a note of caution: as the above results are based on some basic assumptions, such as the structure of economic activity, before the eruption of the pandemic, changes in the structure of the economy could affect them. Thus, a risk related to these results comes from potential structural effects of the pandemic on the Greek private sector; for example, a surge in defaults following the end of moratoria on loan repayment (ESRB, 2021) that will affect the structure of the Greek economy.

5. Concluding remarks and policy implications

Greece entered the global financial crisis with a large reliance on public sector borrowing and spending. After all, the Greek public debt was the main origin of the Greek crisis, which was triggered by the broad re-pricing of risks across the globe. Although Greek banks (the most crucial source of financing for the Greek economy) were initially considered to be resilient to shocks as their fundamentals were in good shape, eventually they did not escape the crisis, which was exacerbated by their lending policies. The direct impairments of their balance sheets as a result of the sovereign debt crisis and the ensuing deterioration in the quality of their loans were disastrous. During the crisis period both the official sector and the central bank provided backstops to the capital and liquidity problems of Greek banks. According to our findings this valuable support only partially counteracted the effects of the high NPLs to the Greek banks' ability to fund the economy.

We have documented the existence of feedback loops between primarily bank credit and secondarily market financing with private demand and even more importantly investment, thus uncovering the nexus between financing and economic activity in Greece. In brief our

[88] See bottom panel of table 3.6 (page 67) of the Explanatory Report of the 2021 Greek State Budget.

findings indicate that while in the pre-crisis period financing of the economy (mainly in the form of bank credit) resulted in lifting real growth rates, in the post-crisis period the lack of credit accentuated the recession.

At present, the main problem of the Greek banking sector is dealing with NPLs (30% of total loans vs. 3% in the euro area in 2020). The problem is expected to be exacerbated by the COVID-19 crisis. Our results indicate that the resolution of NPLs is important for curing the balance sheets of Greek banks and making them more resilient to potential shocks. Only then will banks be able to finance economic activity again and contribute to a more sustainable growth model, especially if they improve the allocation of funds between production and consumption.

Several lessons can be learnt from the crisis.

First, as Greece relies predominantly on bank credit, direct market financing has a long way to go before it can replace the banking sector as the primary source of funding for the economy. Several European initiatives, with that of the Capital Market Union being the most important, are under way in order to enlarge and deepen market financing of the real economy. At present market financing has benefitted greatly by the asset purchase programmes of the ECB, but this should be considered as a temporary and not a structural condition. During the Covid-19 economic turbulence, the role of central banks' balance sheet policies has proven very important, in order to reverse the freeze of market financing of low-rated non-financial corporations; still, this incidence underlines that market financing is subject to abrupt changes. For all the above reasons, the policy maker can expect that the Greek economy in the medium-term will continue to rely predominantly on bank credit for financing economic activity and should aim for a broadening of the funding sources in the long term, along with initiatives for rendering market financing more resilient to shocks. In this respect the partial return of deposits has been beneficial. Hence, the completion of the European Banking Union with a European Deposit Insurance Scheme together with the recently established confidence in the market would be further reassuring.

Second, banks should address the debilitating problem of bad loans to be able to provide a healthy stream of funding to the Greek economy. As we have documented, the deterioration in the quality of assets of Greek banks is a significant factor that reduces credit availability. Our results suggest that solving the NPL problem is a precondition for banks to start providing new credit and, thus, contribute to future economic growth. Currently a partial solution provided by the Ministry of Finance (the 'Hercules' Asset Protection Scheme) is already functioning, but the problem remains. Moreover, initiatives for resolving the legacy NPLs of the Greek banking system should not be of a 'one-off' form. The anticipation that a new generation of NPLs will be brewed by the Covid-19 shock, puts weight on establishing a more permanent tool to tackle the problem. To this end, recently the Bank of Greece proposed the establishment of an asset management company, which could also take into account the weak capital position (due to deferred tax credit) of Greek banks. Actually, a related solution (networks of bad banks) has also been proposed at the European level.

Third, as the Greek banking sector cannot be immune to the fundamental conditions faced either as part of the Greek economic landscape or as part of the broader global financial system, it should follow more long-sighted credit policies. In particular, providing credit to the economy through lending mainly to households may have been the most important development in Greek banks' balance sheets before the crisis, but at the same time it did not strengthen the resilience of the Greek economy. If a healthier and more sustainable productive and export-oriented economic model is to be promoted in the future by an appropriate allocation of funds, banks should expand credit to productive investments rather than to consumption or housing.

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Chapter 8. Greek Economic Growth: Past and Future

Nikolaos Leounakis[89] and Plutarchos Sakellaris[90]*

Abstract

We decompose Greek economic performance over the last sixty years into the contributions of productivity, capital accumulation, and labor growth. Recent Greek economic history is a succession of long periods of boom with long periods of stagnation or depression. The decisive factor in either booms or slumps has been total factor productivity (TFP) growth. In particular, bad performance of TFP is the main culprit for the fourteen-year recession from 1980 to 1993 as well as for the recent depression. This suggests that action on reversing the shortfall in productivity should be the most important focus for policy makers now. We argue that the crisis has led to permanent loss of output. In projections, we show that the economy needs to grow at average rates of about 3.5% over the next five years to be able to recover in 2026 the standard of living enjoyed in 2007, its peak historical level.

JEL classification: E32, N10, O40

Keywords: Greek economic growth; Growth accounting; Financial crisis; Total Factor Productivity

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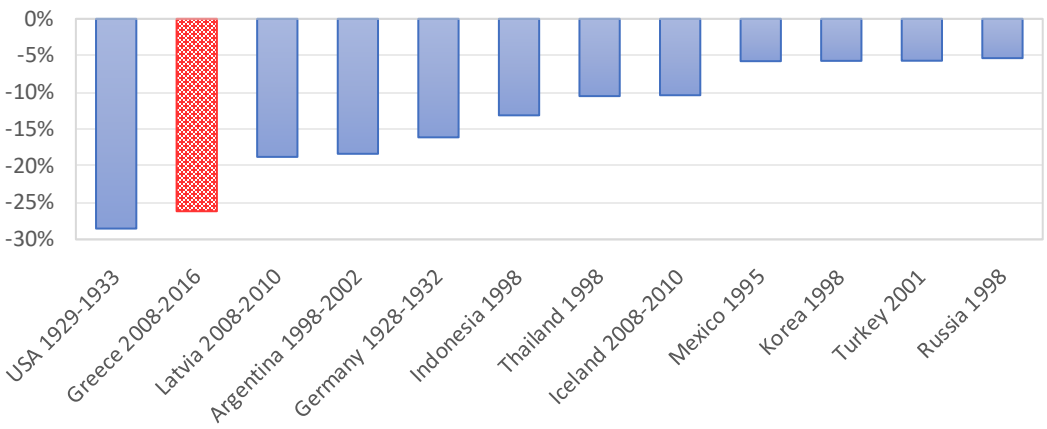
1. Introduction

Economic performance in Greece since 2008 has been dismal. As Figure 1 shows, the drop in economic activity is comparable in magnitude to that of the Great Depression in the USA, yet lasting much longer. This period is unique when compared to anything that happened in the Greek economy all the way back to 1960. However, as Figure 2 aptly shows, it may be considered a dramatic episode of economic depression in a 50- year history of very volatile growth. This history is a succession of long periods of boom with long periods of stagnation or depression. This highly volatile macroeconomic environment has been generated by unsustainable policies that led to two boom-bust cycles since 1960.

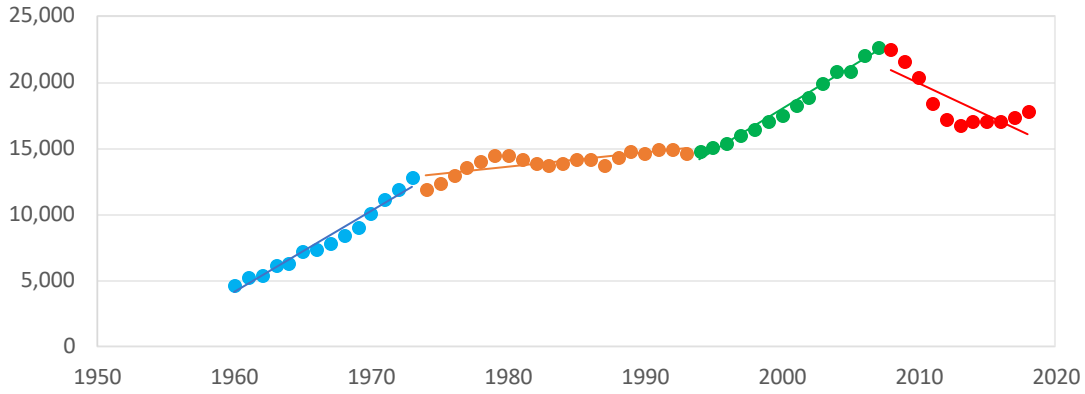
Figure 1. Real GDP Growth in Crisis (from peak to first recovery year)



Source: IMF, Angus Maddison Historical Statistics of the World Economy, Authors' calculations
The figure compares the contraction in Greek GDP during the crisis with contractions experienced historically in other major crises.

In this paper, we aim at five goals. First, we provide consistent annual data on Greek economic growth and its decomposition into the contributions of capital, labor and Total Factor Productivity (TFP) for the years 1960 to 2017. We employ the standard growth accounting framework using capital stocks and total hours worked as the capital and labor factors respectively. Second, we augment our analysis using capital and labor services as productive inputs. This framework is theoretically more appropriate. However, data limitations confine the analysis to the years 1997 to 2017. Third, we contrast the two methodologies to uncover any differences in the implied decomposition of growth. Fourth, we include capacity utilization in our analysis in order to account for any procyclical effects that a variable utilization rate might have on our TFP estimates. Fifth, we classify different periods of economic growth using the "eyeball metric" (as in Figure 2) and statistical techniques.

Figure 2. GDP per Capita



Source: Authors' calculations
Great Expansion (1960 – 1973), Long Stagnation (1974 – 1993), Recovery (1994 – 2007) and Great Depression (2008-2017)

Starting with the fifth goal, our statistical tests indicate two structural breaks in the time series for GDP per Capita: 1974 and 2008. Visual inspection of the time series, however, indicates that 1994 may be considered a third break point. Given the (relatively) short time series and the power of the statistical test, we argue for considering four separate episodes in Greek economic growth since 1960: 1) the *Great Expansion* (1960 – 1973), 2) the *Long Stagnation* (1974 – 1993), 3) the *Recovery* (1994 – 2007), and 4) the *Great Depression* (2008-2017). Regarding the "*Long Stagnation*" period, one might subdivide it further into a) the *Moderate Expansion* (1974 – 1979) and b) the *Great Recession* (1980 – 1993)[91].

How does this economic performance decompose into the contributions of TFP, capital stock and total hours worked? We find that the stunning average GDP growth rate of 8.87% over the period 1960-1973 was due to TFP and capital input contributing by 7.38% and 2.32% respectively. The "*Great Expansion*" was mostly a phenomenon of rapid catch-up in economic efficiency and secondarily of unusually high capital accumulation. Of course, the latter was to a large extent driven by the former[92].

From 1974 to 1979 GDP growth slowed down to 3.28%, a good performance compared to later periods but markedly worse than the preceding fourteen years and a prelude to the future. This was a result of TFP growing at the lower pace of 0.44%, 6.94 percentage points lower than in the "*Great Expansion*" period. Despite the dramatic drop in TFP growth, capital accumulation continued surprisingly strong. In both of these periods, labor input's influence was practically minimal (-0.71% and 0.36%). Over the period 1980-1993 the Greek economy sank into a fourteen-year-long recession, as the GDP rate of change plunged to 0.75%. Capital accumulation slowed down dramatically, now contributing 0.84% to GDP growth while TFP

[91] Gogos et al (2014) also provide evidence of a slowdown after 1974 and a great recession until 1994, followed by a recovery. They do not test statistically for breaks. They rely on a dynamic general equilibrium model and find that TFP is crucial in accounting for growth patterns.

[92] For an insightful analysis of the political and economic forces behind the periods of "Great Expansion" and "Long Stagnation" in Greece, see Alogoskoufis (1995).

subtracted from growth (-0.58%). The situation was partially offset by an improvement in labor input (0.50%).

During the period 1994-2007 the economy recovered partially. The growth rate of output averaged 3.62% as all three inputs improved (0.71%, 1.21% and 1.71% for labor, capital and TFP respectively). Beginning in 2008, the combined effect of financial and sovereign crises took its toll on the Greek economy. During the "*Great Depression*" of 2008-2017, GDP dropped at an annual rate of 2.82% on average. This was due to labor input decreases (-1.26% per annum) and TFP decreases (-1.56% per annum), while net capital formation dropped to the lowest average level of all periods since 1960 (+0.00% per annum).

Our results indicate that the decisive factor of influence on economic growth during the last fifty-seven years has been TFP. Its contribution to growth in output varies from 18% to 83% over the periods 1961-1973, 1974-1979 and 1994-2007. Furthermore, the performance of TFP proves to have been the main culprit for the fourteen-year recession from 1980 to1993 as well as for the current depression. Contrary to widespread belief that the credit boom in the eurozone periphery was used to finance unproductive sectors and investments, we show that TFP growth was very healthy before the crisis that started in 2008. During 1997 to 2007, annual TFP growth averaged 1.80% (standard methodology) or 1.71% (alternative methodology mentioned in the following paragraph). Annual results are contained in Appendix A.

We repeated the growth accounting exercise using capital and labor services as productive inputs instead. This methodology is theoretically superior to the one using stocks. As a result of accounting for changes in the quality of labor and capital, TFP growth is now measured to be slower. The empirical results point to some differences but not large ones. Depending on the period, TFP growth differs by 7%-16% when quality changes are accounted for. The qualitative conclusions do not change.

As a final attempt to refine our results further, we repeated the growth accounting decomposition including variable capacity utilization as a growth factor. As expected, capacity utilization displays a pattern of procyclical variability, so that its inclusion makes TFP slightly less procyclical than before but without materially affecting our conclusions.

In section 3, we focus on the period of the Greek Depression from 2008 to 2017. The financial crisis has had lasting effects on output. We ask the question: which parts of the productive process have been impaired the most? Knowing the answer is important for designing and implementing policies for eventual recovery. Using Solow's growth accounting methodology, as did Hall (2014), we find that output in 2017 is almost 50% below its counterfactual trend. This counterfactual trend in output and its components of total factor productivity, capital, capacity utilization and labor is calculated by projecting forward the historical growth experience of 1974 to 2007. The shortfall in productivity growth is the biggest culprit, accounting for 32% of the observed deficit. The next two most influential components are employment and the contribution of capital accounting respectively for 23% and 19% of the observed shortfall. Attempting to answer the question in the beginning of this paragraph, it

seems necessary to implement policies to boost productivity growth in the medium term and, in parallel, to promote employment and investment.

In section 4, we turn to a discussion about future economic growth and the potential for growth of the Greek economy. First, we establish that the loss in output due to the crisis is permanent. We follow the literature that tests for the existence of unit root in historical output time series (Nelson and Plosser, 1982; Campbell and Mankiw, 1987; Cerra and Saxena, 2005a, 2005b and 2008). Indeed, we find evidence for the existence of unit root in the (log) level of Greek output. This implies that output lost should be forgotten. The policy effort now should be to grow as fast as possible from a new, and lower, base level. The best-case scenario is for the Greek economy to reach average growth rates of Average Labor Productivity (ALP) equal to those it attained during the 1974 to 2007 period. This period includes both a boom and a slump in economic activity and excludes the "growth miracle" of the 1960s and the "Great Depression" of the last 10 years, both extreme economic episodes. During the thirty-three-year period of 1973 to 2007, ALP grew on average at 1.38% per annum (p.a.). We deem that this growth rate may be attainable in the future under a program of ambitious and focused economic reform.[93] The task is not easy. To give an indication, income per capita would have to grow to an average annual rate of 3.5 % from 2019 to 2024 for standards of living to recuperate in 2026 the peak that they had attained in 2007. Such growth rates currently look unlikely unless there is a drastic and effective shift in the mix of policy towards growth.

The paper contains several appendices.

2. The sources of growth: 1960 to 2017

Figure 2 depicts the evolution of GDP per capita since 1960. One can discern four distinct periods of growth. A period of explosive growth spans the years 1960-1973, during which GDP per capita grew at an average rate of 8.42%. We call this the "Long Expansion". Then came the period of the "Long Stagnation," when GDP per capita grew at 0.70%. This period lasted from 1974 to 1993. Beginning in 1994 the economy recovered, and until 2007 per capita GDP grew at 3.22% annually. This was a "Recovery" period. Finally, in 2008, Greece entered a "Great Depression" period during which per capita GDP declined at a dramatic rate of -2.56%.

We use Solow's growth accounting framework to decompose the rate of change of output into the respective contributions of TFP and the other inputs. The results are shown in Table 1.

[93] The specification of such a program is beyond the scope of this paper and the subject of other papers in this volume.

Table 1. Growth Decomposition with Capital Stocks and Total Hours Worked

	GDP	Labour Input	Labour Input breaks into: Total Employment	Average Hours Worked	Net Capital Stock	TFP
1961-1973	8.87%	-0.71%	-0.38%	-0.33%	2.32%	7.38%
1974-1979	3.28%	0.36%	0.32%	0.03%	2.48%	0.44%
1980-1993	0.75%	0.50%	0.49%	0.00%	0.84%	-0.58%
1994-2007	3.62%	0.71%	0.78%	-0.07%	1.21%	1.71%
2008-2017	-2.82%	-1.26%	-1.18%	-0.08%	0.00%	-1.56%

Source: Authors' calculations

The calculations are based on Solow's growth accounting formula: $\frac{\dot{Y}}{Y} = \mathbf{g_t} + \mathbf{S_{K,t}} * \frac{\dot{K}}{K} + \mathbf{S_{L,t}} * \frac{\dot{L}}{L}$, according to which the growth in GDP is decomposed into the contributions of TFP, capital input and labor input respectively. See appendix A1 for more information.

During the 1960s and until 1973 GDP growth averaged 8.87% annually thanks to strong TFP growth and capital accumulation. A period of tapered growth started after the first oil shock and lasted for 6 years, during which growth slowed down to 3.28%.The main culprit was the drastic reduction in TFP growth (averaging 0.44% annually). In 1980, Greece entered a prolonged slump that lasted for fourteen years. Capital accumulation rates fell dramatically to 0.84% on average, and TFP was substantially lower at the end of the period than in the beginning. The situation was partially offset by an improvement in labor input, whose growth has a positive, though small, contribution of 0.49% to GDP growth. During the period 1994-2007 the economy recovered as GDP grew at 3.62% per year. All three inputs contributed to this recovery and TFP grew annually at a rate of 1.71%, the highest rate since 1973. Finally, in 2008, after 14 consecutive years of growth, the Greek economy went into a long downward slide as a result of the global financial crisis and its own sovereign debt and banking crisis. GDP fell by an average of 2.82% annually until 2017. Unemployment rose and total employment and TFP fell dramatically. Appendix A.2 contains the growth decomposition analysis using capital and labor services; the two methodologies give substantially similar results.

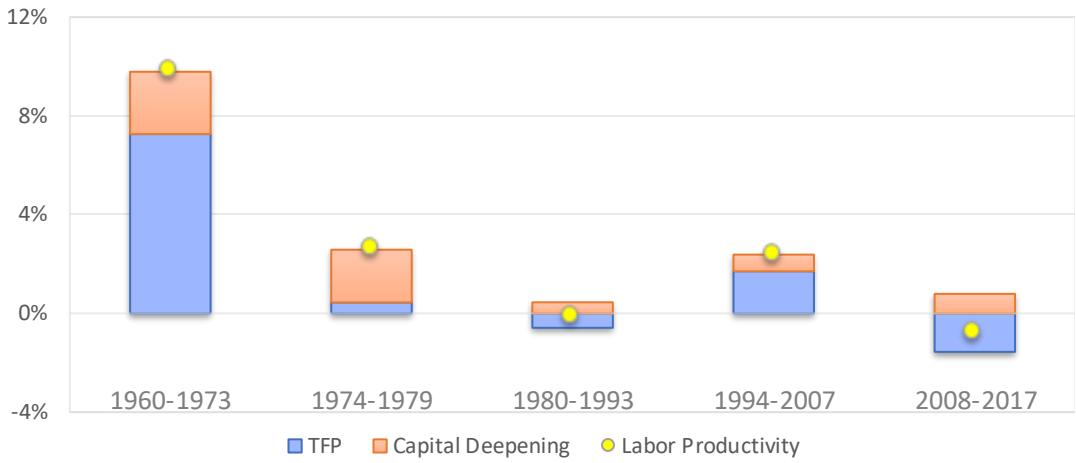
Figure 3 tells the same story from a different perspective. It contains the decomposition of labor productivity into the contributions of capital deepening[94] and TFP, the results of which are included in Table 2. It is clear that TFP growth in 1961-1973 is what sustained the rapid growth of labor productivity at 9.79%, while on the other hand, the slowdown that followed

[94] Labor productivity is computed as the ratio of total product to total hours worked. Capital deepening is the ratio of capital stock to total hours worked.

during 1974-1979 can be ascribed to a dramatic slowdown of TFP growth, as it dropped from 7.26% to 0.44%.

The 14-year slump that ensued saw labor productivity decline at 0.13% on average per year as a result of TFP and capital deepening contributing by -0.58% and 0.45% respectively. During the recovery period that started in 1994, labor productivity rose at 2.38% as capital deepening and TFP improved (0.67% and 1.71% respectively). Finally, from 2008 to 2017 labor productivity declined at a rate of -0.77% and TFP plunged at the rate of -1.56%. Capital, however, deepened as a result of total hours worked decreasing.

Figure 3. Contributions to Labor Productivity Growth



Source: Authors' calculations

The calculations are based on the formula: $\Delta \mathrm{Ln} \frac{Y_t}{L_t} = g_t + S_{K,t} * \Delta \mathrm{Ln} \frac{K_t}{L_t}$, according to which the growth in labor productivity equals the contributions of TFP and capital deepening.

Table 2. Labor Productivity Decomposition

	1961-1973	1974-1979	1980-1993	1994-2007	2008-2017
Labor Productivity	9.79%	2.58%	-0.13%	2.38%	-0.77%
Capital Deepening	2.52%	2.13%	0.45%	0.67%	0.79%
TFP	7.26%	0.44%	-0.58%	1.71%	-1.56%

Source: Authors' calculations

Our breakdown of the data into separate growth periods was motivated by casual inspection of the figures and results presented before. Using a formal statistical test of break points in the time series of growth rates of GDP per capita, we arrive at a similar classification. We use procedures developed by Bai and Perron in a series of papers (1998, 2000, 2003) to determine the number and dates of possible structural breaks. Their methodology has the advantage of allowing multiple break points to be determined endogenously. The Bai-Perron test determined two breakpoints for the growth rate of GDP per capita: in 1974 and 2008. Table 3 contains the results of the same test for the growth rates of labor productivity and TFP. We first investigated the stationarity of these series using the Augmented Dickey Fuller (ADF) test

and unit root tests that allow for the possibility of a structural break (Perron, 1997). For more details on these tests, see Appendix B.

Table 3. Breakpoint Tests

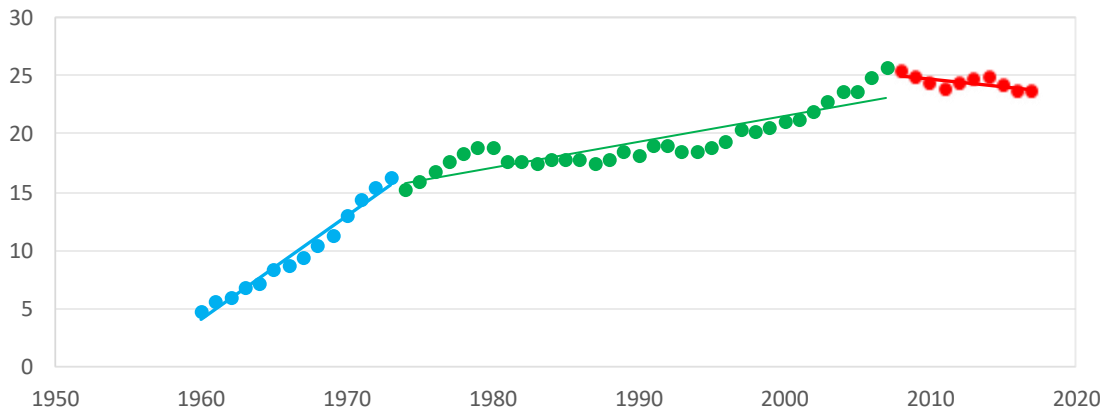
	ADF Test	Unit Root with Break	Bai-Perron		
			sequential	global	information criteria
GDP per Capita	Stationarity	stationarity with break in 1974	break in 1974 break in 2008	rejects the null of no breaks, global optimizers for two breaks: 1974, 2008	break in 1974 break in 2008
Labor Productivity	Stationarity	stationarity with break in 1973	break in 1974	rejects the null of no breaks, global optimizers for one break: 1974, 2008	break in 1974
TFP	Stationarity	stationarity with break in 1974	break in 1972	rejects the null of no breaks, global optimizers for one break: 1972	break in 1972

Source: Authors' calculations

We note that the Bai-Perron tests identify breaks in 1974 and 2008 for GDP per capita; in 1974 and 2008 for Labor Productivity; and slightly earlier in 1972 for TFP. Based on these results, figures 3, 4, 5 and 6 depict labor productivity (levels and growth rates) and TFP growth rates, each with the structural breaks and corresponding trend lines.

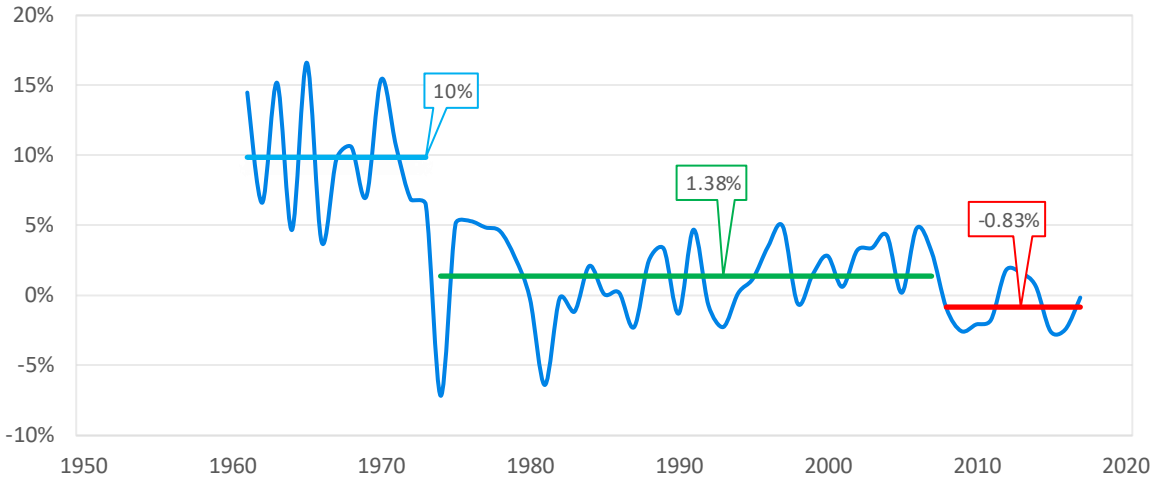
We repeated the growth accounting exercise using capital and labor services as productive inputs instead. This methodology is theoretically superior to the one using stocks. As a result of accounting for changes in the quality of labor and capital, TFP growth is now measured to be slower. The empirical results point to some differences but not large ones. Depending on the period, TFP growth differs by 7%-16% when quality changes are accounted for. The qualitative conclusions do not change.

Figure 4. Labor Productivity



Source: Authors' calculations

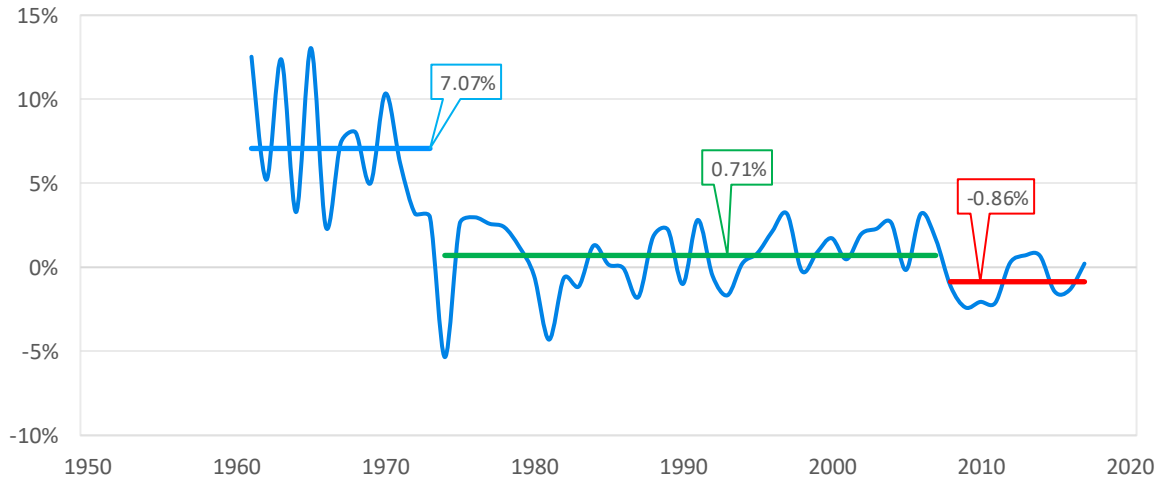
Figure 5. Labor Productivity Growth Rate



Source: Authors' calculations

It is sensible to claim that an important part of the variability in TFP is measurement error due to lack of correction for capacity utilization. We therefore extend our model following King and Rebelo (1999) to account for the effects of variable utilization in the capital input. The results in Table 4 indicate that utilization helped output growth with a small, positive contribution during 1961-1973 and 1994-2007, while it also added to the slowdown during the other periods with similarly small but negative rates of change. Accordingly, the procyclicality of TFP, and thus its effect on growth, is now slightly dampened; however, TFP remains the main explanatory factor of changes in output growth under all periods. Table 5 extends the results of Table 2 accounting for variable utilization, and leads to the same conclusions. The analysis in the rest of the paper will be based on the results of the decomposition with capital stocks and total hours worked, also taking into account the correction for capacity utilization.

Figure 6. TFP Growth Rate



Source: Authors' calculations

Table 4. Growth Decomposition with Capital Stocks, Total Hours Worked, and Capacity Utilization

	GDP	Labour Input	Labour Input breaks into: Total Employment	Average Hours Worked	Net Capital Stock	Capacity Utilization	TFP
1961-1973	8.87%	-0.71%	-0.38%	-0.33%	2.32%	0.19%	7.07%
1974-1979	3.28%	0.36%	0.32%	0.03%	2.48%	-0.63%	1.07%
1980-1993	0.75%	0.50%	0.49%	0.00%	0.84%	-0.35%	-0.23%
1994-2007	3.62%	0.71%	0.78%	-0.07%	1.21%	0.22%	1.49%
2008-2017	-2.82%	-1.26%	-1.18%	-0.08%	0.00%	-0.70%	-0.86%

Source: Authors' calculations

The calculations are based on the decomposition equation of King and Rebelo (1999):

$\frac{\dot{Y}}{Y} = \mathbf{g_t} + \mathbf{S_{K,t}} * \frac{\dot{K}}{K} + \mathbf{S_{L,t}} * \frac{\dot{L}}{L} + \frac{\mathbf{S_{K,t}}}{\mathbf{S_{L,t}}+\xi} * (\mathbf{g_t} - \mathbf{S_{L,t}} * \frac{\dot{K}}{K} + \mathbf{S_{L,t}} * \frac{\dot{L}}{L})$, where the last term expresses capacity utilization and ξ is the elasticity of the marginal depreciation rate of capital with respect to the level of utilization. See appendix A1 for more information.

Table 5. Labor Productivity Decomposition

	1961-1973	1974-1979	1980-1993	1994-2007	2008-2017
Labor Productivity	9.79%	2.58%	-0.13%	2.38%	-0.77%
Capital Deepening	2.52%	2.13%	0.45%	0.67%	0.79%
Capacity Utilization	0.19%	-0.63%	-0.35%	0.22%	-0.70%
TFP	7.07%	1.07%	-0.23%	1.49%	-0.86%

Source: Authors' calculations

We have seen in this section that the decisive factor of influence on economic growth during the last fifty-seven years has been TFP. Most importantly, high output growth was accompanied by high TFP growth and similarly for periods of low growth. In particular, the performance of TFP proves to have been the main culprit for the fourteen-year recession from 1980 to1993 as well as for the recent depression. Contrary to widespread belief that the credit boom in the eurozone periphery was used to finance unproductive sectors and investments, we show that TFP growth was very healthy before the crisis that started in 2008; during 1997 to 2007, annual TFP growth averaged 1.49% (standard methodology) or 1.71% (alternative methodology using capital and labor services). Annual results are contained in Appendix A.

3. The Greek Depression: Shortfall of Output

In this section, we focus on the period of the Greek Depression, running from 2008 to 2017. We investigate the lasting effects of the financial crisis on several macroeconomic variables. We ask the question: which parts of the productive process have been impaired the most? Knowing the answer is important for designing and implementing policies for eventual recovery.

We follow Hall (2014) and decompose output growth into the contributions of TFP, capital and labor input and capacity utilization using Solow's growth accounting formula. Labor input (H), measured as total hours annually worked, is further decomposed into the effects of population (P) growth, labor force (LF) participation, employment (E) rate and average hours worked:

$$\boldsymbol{H = P * \frac{LF}{P} * \frac{E}{LF} * \frac{H}{E}}$$

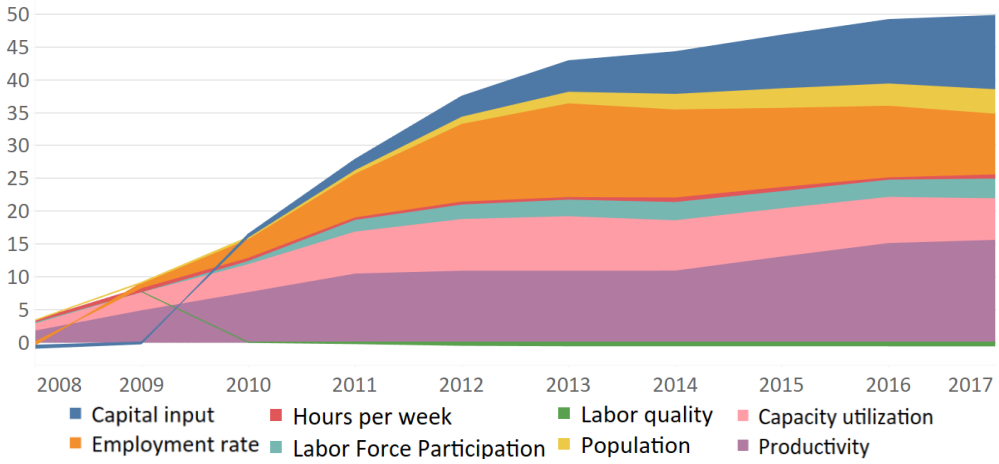
Working with growth rates, we calculate actual contributions to GDP growth and then counterfactual contributions by assuming that the variables grow under two scenarios. In the first scenario, the trend growth rate for each variable is maintained at their 1974-2007 average rate, whereas in the second scenario it is maintained at their 1994-2007 average rate. We subtract actual from counterfactual values to obtain the shortfall in growth for the output as well as for each productive factor. Tables 6 and 7, and the corresponding Figures 7 and 8, contain the results of the analysis.

Table 6. Components of the Shortfall of Output Two, Five and Ten Years into the Depression (1974-2007 trend)

Year(s)	*Output =*	*Productivity +*	*Capital input +*	*Capacity Utilization +*	*Population +*	*Labor-Force Participation +*	*Employment rate +*	*Hours per week +*	*Labor quality*
2008	2.4	1.8	-0.4	1.1	0.0	0.2	-0.5	0.2	0.0
2009	6.4	3.1	0.2	1.7	0.1	-0.2	1.2	0.4	0.0
2010	7.6	2.8	0.7	1.5	0.1	0.5	2.1	-0.1	0.0
2011	11.2	2.8	1.1	2.1	0.3	1.3	3.8	-0.1	-0.2
2012	9.4	0.4	1.5	1.5	0.6	0.4	5.2	0.1	-0.3
2013	5.3	0.0	1.6	0.4	0.7	0.3	2.4	-0.1	-0.1
2014	1.4	0.0	1.7	-0.6	0.6	0.2	-0.9	0.3	0.0
2015	2.5	2.2	1.7	-0.3	0.6	-0.2	-1.4	-0.1	0.0
2016	2.4	2.1	1.6	-0.3	0.4	0.0	-1.1	-0.3	0.0
2017	0.6	0.5	1.5	-0.7	0.3	0.4	-1.7	0.3	0.0
2007 through 2010	16.4	7.7	0.5	4.3	0.2	0.5	2.8	0.5	0.0
2007 through 2013	42.3	11.0	4.6	8.3	1.8	2.5	14.3	0.4	-0.6
2007 through 2017	49.2	15.7	11.1	6.3	3.7	3.0	9.2	0.6	-0.6

Source: Authors' calculations

Figure 7
Components of Shortfall (1974-2007 trend)



Source: Authors' calculations

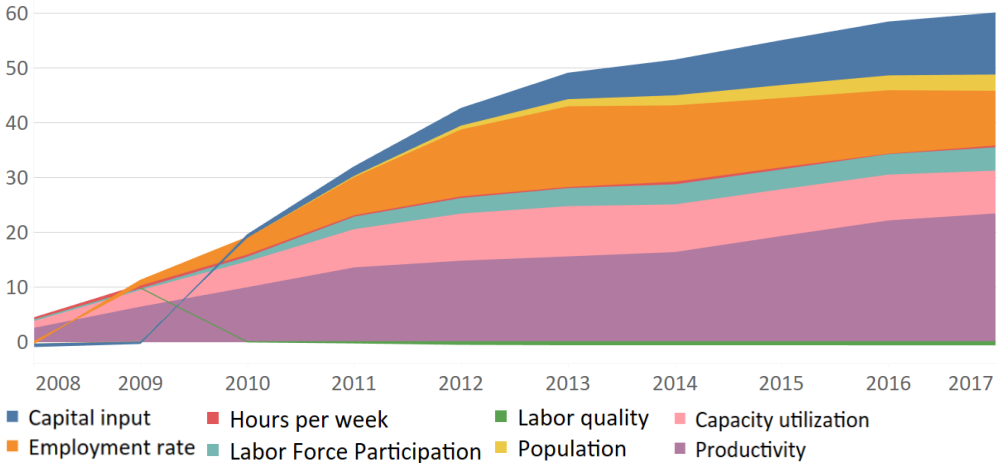
The shortfall for each factor is first calculated yearly as the counterfactual % change based on the 1974-2007 trend minus the actual % change. For the chart, we aggregate the previous results up to a given year in order to obtain the cumulative shortfall for that year. For example, 2011 figures show the cumulative shortfall over 2008, 2009, 2010, and 2011.

Table 7. Components of the Shortfall of Output Two, Five and Ten Years into the Depression (1994-2007) trend

Year(s)	*Output =*	*Productivity +*	*Capital input +*	*Capacity Utilization +*	*Population +*	*Labor-Force Participation +*	*Employment rate +*	*Hours per week +*	*Labor quality*
2008	3.5	2.6	-0.4	1.2	0.0	0.3	-0.4	0.2	0.0
2009	7.4	3.9	0.2	1.8	0.0	0.0	1.3	0.4	0.0
2010	8.6	3.5	0.7	1.7	0.1	0.6	2.2	-0.1	0.0
2011	12.2	3.6	1.1	2.3	0.2	1.4	3.9	-0.1	-0.2
2012	10.4	1.2	1.5	1.6	0.5	0.6	5.3	0.0	-0.3
2013	6.4	0.8	1.6	0.6	0.6	0.5	2.5	-0.1	-0.1
2014	2.4	0.8	1.7	-0.5	0.5	0.4	-0.8	0.3	0.0
2015	3.6	2.9	1.7	-0.2	0.5	0.0	-1.3	-0.1	0.0
2016	3.4	2.8	1.6	-0.2	0.3	0.1	-1.1	-0.3	0.0
2017	1.6	1.3	1.5	-0.5	0.3	0.5	-1.6	0.2	0.0
2007 through 2010	19.5	10.0	0.4	4.7	0.0	0.9	3.1	0.4	0.0
2007 through 2013	48.4	15.7	4.6	9.2	1.3	3.3	14.7	0.2	-0.5
2007 through 2017	59.4	23.5	11.1	7.8	3.0	4.3	10.0	0.3	-0.6

Source: Authors' calculations

Figure 8
Components of Shortfall (1994-2007 trend)



Source: Authors' calculations

The shortfall for each factor is first calculated yearly as the counterfactual % change based on the 1994-2007 trend minus the actual % change. For the chart, we aggregate the previous results up to a given year in order to obtain the cumulative shortfall for that year. For example, 2011 figures show the cumulative shortfall over 2008, 2009, 2010, and 2011.

For each year, the Tables provide the incremental shortfall of output and each of its components relative to the respective counterfactual trend. The last three lines show the cumulative shortfall for output and each of its components over two, five and ten years into the Greek Depression. The 1994-2007 period saw higher growth rates for most of the variables, so that the shortfall in Table 7 is higher than that in Table 6 over the same periods. Both Tables show that in the first three years (2007 to 2010), the shortfall in output (16.4% below the 1974-2007 trend or 19.5% below the 1994-2007 trend), was mostly driven by bad performance of productivity. The second most important factor was capacity utilization and the third was the employment rate (mirroring the increase in the unemployment rate). The shortfall in capital accumulation, labor force participation rate, and average hours worked was marginal.

In the following three years, the shortfall in output grew much worse, to 42.3% or 48.4% when cumulated from 2007 to 2013. This period contains the two worst years of the Greek Depression in terms of growth: 2011 and 2012. Productivity continued to be the most important element of the shortfall (11% and 15.7%). The dramatic increase in the unemployment rate between 2010 and 2013 raised the contribution of the employment rate in the shortfall (to 14.3% and 14.7%). During these three years capacity utilization continued to worsen, while capital stock accumulation fell substantially leading to a rising, though still small, contribution of capital in the shortfall.

When the next four years (2014 to 2017) are taken into account, output shortfall grows only by a smaller amount (to 49.2% and 59.4%). This was because GDP growth showed signs of

improvement in 2014 and again in 2017. Note that these two years productivity growth also improved. In addition, the employment rate grew higher than its historical trend, so its contribution to the shortfall decreased (to 9.2% and 10%). The contribution of capacity utilization to the shortfall also decreased as, starting in 2014, it grew at a small but positive rate. Labor quality too had a small role in reducing the shortfall. Capital stock continued to deteriorate, being 11.1% lower than its historical trends, while population also decreased thus adding to the widening gap.

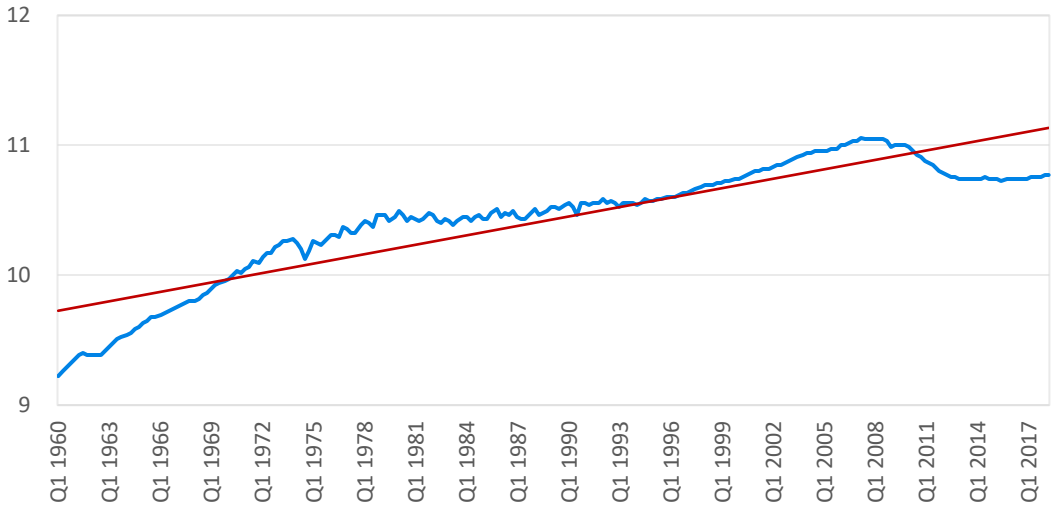
Overall, for the 10-year period of the Greek Depression, we can say that productivity was the biggest driver of the poor output performance, accounting for more than one third of the total shortfall. It was followed by the capital stock, employment rate and capacity utilization, all of which performed badly. Except for labor quality, all other factors played a small, negative role. Attempting to give an answer to the question we posed at the beginning of this section, it is clear that policy action on improving productivity should be the most important focus for policy makers now.

4. The Future

In this section, we consider possible permanent effects of the financial crisis on Greek standards of living. Several authors (e.g. Nelson and Plosser, 1982; Campbell and Mankiw, 1987) have provided evidence for the USA that deviations from trend output growth are permanent. This means that a demand or other shock causing a decline in output does not tend to be followed by a rebound during the recovery phase that brings output back on its initial, long-term track. Technically, there is a unit root in the time series of output, so that the latter is not mean reverting, pointing to the importance of real stochastic innovations in understanding long-term movements in output. More recent work by Cerra and Saxena (2005a, 2005b and 2008) has shown how financial and political crises in different countries have led to permanent losses of output.

To test the unit-root hypothesis for the case of Greece, we performed a series of Augmented Dickey-Fuller (ADF) and Phillips-Perron unit root tests on the log of quarterly, seasonally adjusted, real GDP series beginning in 1960. Furthermore, to account for the possibility of having a false unit root on account of a structural break, we test for non-stationarity while taking into account the possibility of a break in the series. All tests indicate that the null hypothesis of a unit root in the log levels of real output cannot be rejected at the 5% significance level. Figure 9 shows the long oscillations of (log) output around a linear trend.

Figure 9. Quarterly log GDP



Source: Authors' calculations
Quarterly, seasonally adjusted, real GDP data are obtained from the OECD. The figure shows long oscillations around a linear trend

Having established that the loss in output due to the crisis is permanent. we turn to a discussion about future economic growth and the potential for growth of the Greek economy. We project forward the path of GDP per capita for two scenarios: a *Great Recovery* and a *No Crisis* scenario. For our calculations, we use the formula:

$$\frac{\boldsymbol{Y}}{\boldsymbol{N}} = \frac{\boldsymbol{Y}}{\boldsymbol{H}} * \frac{\boldsymbol{H}}{\boldsymbol{E}} * \frac{\boldsymbol{E}}{\boldsymbol{L}} * \frac{\boldsymbol{L}}{\boldsymbol{WAP}} * \frac{\boldsymbol{WAP}}{\boldsymbol{N}}$$

Where, $\frac{Y}{N}$ is GDP per capita, $\frac{Y}{H}$ is labor productivity, $\frac{H}{E}$ are average hours worked, $\frac{E}{L}$ is the employment rate, $\frac{L}{WAP}$ is the labor force participation rate and $\frac{WAP}{N}$ is the proportion of working age to total population. We employ OECD's forecasts of population and working age population (15-74 years) to 2030. We assume that average hours worked and labor force participation rate remain constant.

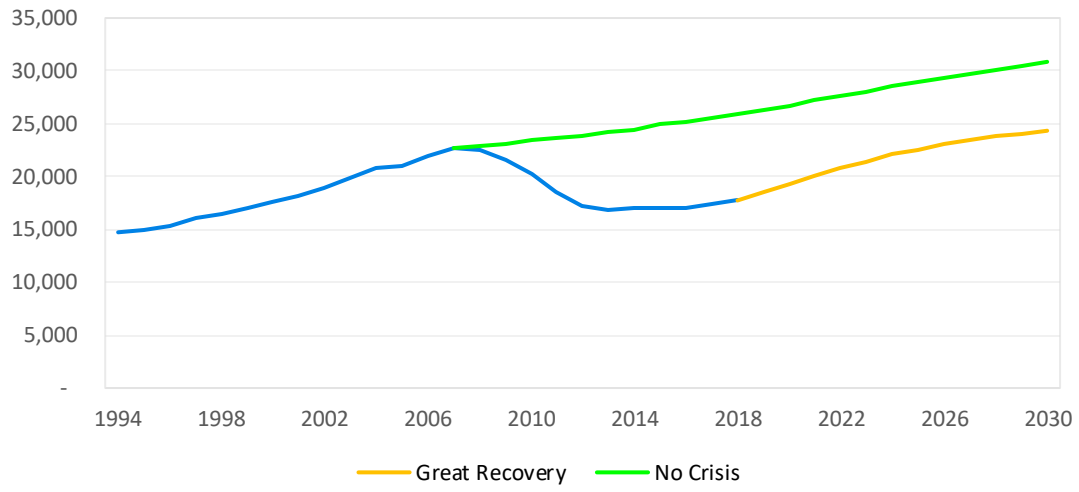
The *No Crisis* scenario is a counterfactual that indicates what the level of standards of living in Greece might have been had there been no crisis. The key driving variable here is average labor productivity, which is assumed to grow at 1.38% p.a. (its average rate between 1974 and 2007). These assumptions are applied from 2008 forward. In the *No Crisis* scenario, starting from 2007, the unemployment rate is held constant to its 2007 level of 8%.

Alas, the performance of the Greek economy in the ten years after 2007 has not been as in the *No* Crisis scenario. We move on to the task of projecting forward from the standpoint of where the economy stood in 2017. The best-case scenario is for the Greek economy to reach average growth rates of Average Labor Productivity (ALP) equal to those it attained during the 1974 to 2007 period. This period includes both a boom and a slump in economic activity and excludes the "growth miracle" of the 1960s and the "Great Depression" of the last 10

years, both extreme economic episodes. During the thirty-three-year period of 1973 to 2007, ALP grew on average at 1.38% per annum (p.a.). We deem that this growth rate may be attainable in the future under a program of ambitious and focused economic reform. In the *Great Recovery* scenario, the unemployment rate is assumed to go down to 8% (its 2007 level) from its current level by 2027 starting in 2019. After that, it remains constant. We use OECD's forecast for 2018 Real GDP and unemployment rate (€ 190,610 million and 0.20 respectively).

As may be seen in Figure 10, the task of growth for the Greek economy ahead is not easy. To give an indication, income per capita would have to grow at an average annual rate of 3.5 % between 2019 and 2024 for standards of living to recuperate in 2026 the peak that they had attained in 2007. Such growth rates currently look unlikely unless there is a drastic and effective shift in the mix of policy towards growth.

Figure 10. GDP per Capita Projection



Source: OECD, own calculations

For both scenarios, ALP growth assumed at 1.38% (its 1974 to 2007 average). **Great Recovery**: Reduction of unemployment rate to 8% from current level by 2027 starting in 2019. **No Crisis**: unemployment rate is held constant to 2007 level of 8%. We use OECD's forecast for 2018 Real GDP and unemployment rate (€ 190,610 million and 0.20 respectively).

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Appendix

A1. Methodology and Data

Growth accounting decomposes the growth of gross domestic product into components related to the accumulation of productive inputs and a residual term called Total Factor Productivity or Solow residual, in honor of Nobel laureate Robert Solow, who developed this idea (1957). Growth accounting decomposition does not explain but can help in understanding the forces that drive growth, such as institutions, the rule of law, and sound policies. The framework employs a standard neoclassical production function:

$$\boldsymbol{Y = F(A, K, L)} \qquad \textbf{(1)}$$

where aggregate output *Y* is a function of capital input *K*, labor input *L* and total factor productivity, *A*. Differentiating with respect to time and then dividing by Y we get the growth rate of total output as:

$$\frac{\dot{Y}}{Y} = g + \frac{F_K * K}{Y} * \frac{\dot{K}}{K} + \frac{F_L * L}{Y} * \frac{\dot{L}}{L} \qquad \textbf{(2)}$$

where F_K and F_L are the marginal products of capital and labor respectively and g = $\frac{F_A * A}{Y} * \frac{\dot{A}}{A}$ is the Solow residual. This is the part of economic growth that cannot be explained by the contributions of production inputs, and is interpreted as growth of total factor productivity. Assuming perfect competition in output and factor markets, the price of capital (U_K) is equal to the marginal product of capital and the wage (W) is equal to that of labor. It then follows that: $S_K = \frac{U_K * K}{Y}$ and $S_L = \frac{W * L}{Y}$ are the respective shares of each factor's remuneration in total product. The growth of output then equals the weighted sum of the growth rates of production inputs and that of the Solow residual:

$$\frac{\dot{Y}}{Y} = \mathbf{g_t} + \mathbf{S_{K,t}} * \frac{\dot{K}}{K} + \mathbf{S_{L,t}} * \frac{\dot{L}}{L} \qquad \textbf{(3)}$$

The data we use was drawn mainly from the OECD and Eurostat. Detailed sources are provided at the end of this document in Appendix C. We note that 2010 was chosen as the base year and our calculations and results are in year-average prices.

Series on total investment were taken from the OECD and were available from 1960 onwards. Data on GDP were also available from 1960 and we extended it back to 1951 using data from the Penn World Table. Assuming that the flow of investment is equally distributed over the period, we calculate net capital stock and consumption of fixed capital in base-year average prices using the following equations:

Net Capital Stock (end of period): $\boldsymbol{Stock^t_{end} = Stock^t_{begin} + I_t - \delta * (Stock^t_{begin} + \frac{I_t}{2})}$
(4)

Consumption of Fixed Capital: $\boldsymbol{\delta(Stock^t_{begin} + \frac{I_t}{2})}$
(5)

In equation (4) we apply the perpetual inventory method, which denotes that at the end of the period, the net capital stock equals the stock at the beginning of that period plus investment minus the consumption of fixed capital. The aggregate depreciation rate (δ) was assumed to be constant and chosen to match the capital and labor services analysis[95].

The input of labor is measured by total hours worked, i.e. total employment times average hours actually worked in a year. As for the labor share we used the compensation of labor divided by gross value added, after accounting for the income of self-employed. The share of capital is computed as 1 minus that of labor.

A2. Decomposition Using Capital and Labor Services

From a theoretical point of view, capital and labor services are considered more appropriate for productivity analysis as they take into account compositional changes in employment and stock of capital. In this section we perform the growth accounting exercise using capital and labor services as inputs. Eurostat and the OECD provide us with enough data to perform such a task for the years 1997-2017[96]. This is, admittedly, a very limited time period. Still, comparing the results from the two methods during the years 1997-2017 is a good check of robustness.

Capital stock is not considered the best proxy to account for the contribution of the existing capital assets to aggregate production. There are three main problems with using the (net) capital stock as the capital input. The first problem is that, as a stock, it is inconsistent with other variables, such as total hours worked, that enter the production function as flows. Another problem when using capital stock is that it does not account for heterogeneity in capital assets. The third problem is that capital stock does not capture correctly the contribution of more productive assets which may have short asset lives and low price, since assets are weighted by their market value when computing the capital stock and therefore expensive assets with longer service lives are assumed to contribute more. One should keep in mind that the problem of heterogeneity of labor inputs arises also when measuring labor input by total hours. Specifically, using total hours worked as the labor input does not take into account important compositional changes, such as those in education level and the participation of women.

The modern approach is to consider the flow of productive services which originate from the stock of physical assets in a given time period. These are considered more appropriate to enter the production function as capital input. The same holds for labor services. The theory of measuring capital services was developed by Dale Jorgenson (1963, 1967, 1969 etc.) and other authors in the 1960s and since then, the literature has grown, and detailed guidelines

[95] Details are provided in section 4.

[96] We concluded that no reliable data could be used to decompose growth before 1997.

have been published. The methodology we follow and that we describe in detail in Appendix A is the one outlined by the OECD (2009).

Table 8 contains the results split in two separate periods: 1997-2007 (which is a subset of the "Recovery") and 2008-2017. Looking at this new data we can observe that, over both examined periods, compositional changes in the number of total hours worked have had a small, positive influence on growth (0.19% and 0.21%). Quality changes in the productive capital stock seem to have had a similarly small effect (0.07% and -0.20%). As a result, when we compare these findings with those in Table 1 (which, for convenience, are also given in Table 9 below, averaged over corresponding periods) we notice that, moving from capital and labor services to capital stocks and total hours worked overestimates the contribution of TFP by 24.14% in the first period and underestimates it by 8.24% in the second period. In other words, the two methodologies do not result in substantially different decompositions.

Table 8

Growth Decomposition With Capital and Labor Services

			Labour Input breaks into:				Capital Services break into:		
	GDP	Labour Input	Total Employment	Average Hours	Labour Composition	Capital Services	Net/Productive capital Stock	Quality Effect	TFP
1997-2007	3.99%	0.99%	0.89%	-0.09%	0.19%	1.54%	1.47%	0.07%	1.45%
2008-2017	-2.82%	-1.03%	-1.18%	-0.06%	0.21%	-0.08%	0.12%	-0.20%	-1.70%

Source: Authors' calculations

Table 9

Growth Decomposition with Capital Stocks and Total Hours Worked

			Labour Input breaks into:			
	GDP	Labour Input	Total Employment	Average Hours	Net Capital Stock	TFP
1997-2007	3.99%	0.80%	0.89%	-0.09%	1.38%	1.80%
2008-2017	-2.82%	-1.26%	-1.18%	-0.08%	0.00%	-1.56%

Source: Authors' calculations

A3. Estimation of Capital and Labor services

We present here the basic methodology followed for decomposing economic growth. First, we discuss the theory that underlies our calculations and then we provide annual results.

A3.1 Capital Stocks

Our estimation begins by computing the gross fixed capital stock. This is the accumulated stock of past investments corrected for retirement using an age-retirement pattern. It is called gross because consumption of fixed capital has not yet been deducted, thus ignoring asset decay. Once the gross fixed capital stock is computed, we can estimate the net fixed capital stock by applying an age-price profile that depicts an asset's loss in value over time. So the net capital stock is the stock of assets surviving from past periods that is corrected for depreciation, i.e. consumption of fixed capital. When a geometric age-price profile is used, i.e. a constant rate of depreciation is assumed, it can be shown that this can act as a good approximation to a combined age-price/retirement profile (OECD 2009). What this means is that we can derive the net capital stock without first having to estimate the gross capital stock.

We saw that equation (4) is the perpetual inventory identity which allows us to construct time series on net capital stock. However, in the absence of full time series of investment, we need to estimate the initial capital stock in year 1951. We do so by following a methodology similar to that of Kehoe and Prescott (2007). According to that, the initial value of the capital stock K_{1951} must satisfy that:

$$\frac{K_{1951}}{Y_{1951}} = \frac{1}{15} * \sum_{t=1952}^{1966} \frac{Kt}{Yt} \quad ,$$

(6)

where Yt is the value of real output in time t, so the ratio of capital stock to the initial product should equal the average of that ratio over the next fifteen years[97]. It is important to note that our investment series from the OECD go as back as 1960 only, so for the years 1951-1959 we assume that investment grew at the rate of real GDP.

Before moving on to calculating capital services, we make one final remark: the stock series generated by equation 4 is expressed in units of new assets. This means that the capital stock is measured in new asset prices that are observable in the market. This is important when calculating the rate of change of the stock of capital: with investment series by type of asset, it can be shown that the rate of change of total capital stock equals the sum of rates of change of all asset stocks, each weighted with relative market prices. This is different from the aggregation scheme that we use for the rate of change of capital services, in which relative rental prices are required instead. We will see that this also makes a difference for the shares of capital input in total product used in equation (3), when these are calculated in the case of capital stocks and in the case of capital services.

[97] Various methods exist in the literature, like for example the steady-state approach. In general, each method comes with advantages and disadvantages, but choosing one over the other becomes less important when the initial year is chosen to be as far back in time as possible. It can then be shown that the resulting series from all methods over the examined period converge. This is the reason why we chose 1951 as our initial year, which is sufficiently long before the period we want to examine.

A3.2 Capital Services

We proceed by identifying 6 groups of assets. These are: dwellings, other buildings and structures, transport equipment, other machinery and equipment, intangible fixed assets and cultivated assets. The intermediate step towards calculating the flow of capital services from these assets is the estimation of the productive stock. This is derived similarly to the net capital stock, when one applies an age-efficiency profile in the place of the age-price profile described earlier. The age-efficiency profile depicts an asset's loss in productive efficiency over time and thus the productive stock is the stock of assets surviving from past periods that is corrected for its loss in productive efficiency. The flow of capital services for a group of assets is considered to be proportional to the productive stock of that group of assets. Again, in the case of geometric rates the age-efficiency profile can be used as an approximation to a combined age-efficiency/retirement profile. Using geometric rates also comes with the advantage that the age-efficiency and age-price profiles are identical and as a result the productive stock is the same as the net capital stock. We can therefore use equations 4, 5 and 6 to calculate the end-of-period, net capital stock for each asset group and this will also be equal to that asset's productive stock.

The depreciation rates for each type of asset are collected from the EUKLEMS (Timmer et al, 2007), which in turn bases its calculations to BEA depreciation rates by Fraumeni (1997). Across all industries, EUKLEMS uses a range of depreciation rates for each type of asset. We made sure that the rates we used did not exceed those ranges. The aggregate depreciation rate used in the case of capital stocks earlier was derived using the formula:

$$\boldsymbol{\delta} = \frac{\sum_t \boldsymbol{\delta}_t}{\mathbf{t}} \quad \text{, where:} \quad \boldsymbol{\delta}_t = \frac{\sum_{i=1}^{6} \boldsymbol{\delta}_i * (\mathbf{Stock}_{i,begin}^t + \frac{I_i^t}{2})}{\sum_{i=1}^{6} \mathbf{Stock}_{i,begin}^t} \qquad \textbf{(7)}$$

As explained in footnote 5, we want the generated stock series to depend as little as possible on the initial capital stock and, consequently, on the method with which that was calculated. This is the reason why we did not take into account the first few observations generated by equation 4. However, skipping years like that is not possible in the present case due to limited data. We therefore decided to choose the depreciation rates so that the total initial capital stock in 1995 is as close as possible to the 1995 capital stock calculated in section 2 where the aggregate depreciation rate was used. So, although capital stock series from 1997 onwards remain highly dependent on the value of the initial stock, we can be sure that the target value we set for the 1995 capital stock is "correct" given the depreciation rates and the analysis with capital stocks discussed above.

The next step is to calculate the price of capital services or rental price. This is done using information on the real rate of return to capital, the depreciation rate and the rate of revaluation. We opted for the endogenous, ex post approach with regard to the real rate of return. According to that, internal rates of return are computed by imposing the condition that the estimated value of capital services exactly corresponds to gross operating surplus plus the capital element of gross mixed income. The total user costs for a particular asset type are then computed as the productive stock of that asset times its rental price.

Assuming that the flow of capital services from capital asset *i* moves in proportion with the corresponding, mid-year productive stock, we can compute the rate of change of capital services ΔLnBt as a Törnqvist index:

$$\Delta \mathbf{LnB_t} = \sum_{\mathbf{i=1}}^{\mathbf{6}} \bar{s}_{i,t} * \mathbf{\Delta LnK_{i,t}} \quad , \qquad \textbf{(8)}$$

where

$$\bar{\boldsymbol{s}}_{i,t} = \frac{\mathbf{s_{i,t}+s_{i,t-1}}}{\mathbf{2}} \qquad \text{and} \qquad \mathbf{s_{i,t}} = \frac{\mathbf{U_{i,t}*K_{i,t}}}{\sum_{\mathbf{i=1}}^{\mathbf{6}} \mathbf{U_{i,t}*K_{i,t}}}$$

We use Ui,t to denote the rental price of asset type *i* in time *t* and Ki,t is the corresponding productive stock, so that Ui,t * Ki,t are the user costs for that asset. Equation (8) tells us that the rate of change of capital services equals the weighted sum of rates of change of the productive stocks for each asset group, where the weights are the shares in user costs.

A3.3 Labor Services

Labor input should take into account changes in total employment and average hours actually worked as well as compositional changes, such as those in education level and participation of women. For the period 1997-2016, we divide total employment by gender and three levels of educational attainment: a) pre-primary, primary and lower secondary education (levels 0-2 according to ISCED), b) upper secondary and post-secondary non-tertiary education (levels 3 and 4) and c) first and second stage of tertiary education (levels 5 and 6). That gives us a total of 6 groups of workers and our input will be the total hours worked by each group. Aggregating across hours worked by each group to get a measure of labor input change is similar to aggregating across assets like we did in the previous section. Assigning weights, however, should be somewhat easier since the price of labor is observable in the market in the form of wages, unlike rental price of capital which we had to compute. Similarly as in equation (6), the rate of change labor input is given by:

$$\mathbf{\Delta LnL_t} = \sum_{\mathbf{j=1}}^{\mathbf{6}} \overline{\mathbf{s_{j,t}}} * \mathbf{\Delta LnH_{j,t}} \qquad \textbf{(9)}$$

where:

$$\bar{\mathbf{s}}_{\mathbf{j,t}} = \frac{\mathbf{s_{j,t}+s_{j,t-1}}}{\mathbf{2}} \qquad \text{and} \qquad \mathbf{s_{j,t}} = \frac{\frac{\mathbf{w_{j,t}}}{\bar{\mathbf{w}}_{\mathbf{t}}}*\mathbf{H_{j,t}}}{\sum_{\mathbf{j=1}}^{\mathbf{6}} \frac{\mathbf{w_{j,t}}}{\bar{\mathbf{w}}_{\mathbf{t}}}*\mathbf{H_{j,t}}}$$

We express mean hourly earnings of workers' group j in time t relative to the average earnings for each gender in time t with $\frac{w_{j,t}}{\bar{w}_t}$ and total hours worked by the same group with $H_{j,t}$. Due to data limitations we use relative wages which are assumed constant over periods of time[98]. This doesn't change that $w_{j,t} * H_{j,t}$ expresses the compensation of workers' group j in time t so that equation (7) denotes that the rate of change of total labor input is given by the

[98] This kind of assumption is not new. See Scarpetta et al. (2000) and Schreyer et al (2003) who also hold earnings relative-to-average constant and Timmer et al. (WIOD 2012) who hold earnings relative to those of medium-skill workers constant.

weighted sum of the rates of change of total hours worked by each group, with shares in total labor compensation acting as weights.

Regarding the data needed to construct labor services, we resorted to Eurostat. However, no data of hours worked by educational attainment was available, so we had to cross-classify between data on full-time/part-time employment by educational attainment and sex and data on average number of weekly hours actually worked by full-time/part-time type of employment and sex. In essence, this type of "concordance" makes the simplifying assumption that, on average, all persons working part-time (full-time respectively) worked the same number of hours regardless of their educational level. This enables us to acquire series of total weekly hours worked by men and women of different educational level (which in this exercise is a proxy for skill). Finally, EUROSTAT time series on average working hours begin in 1983, so for the years 1970-1982 we complement with data from the OECD database. The rate of change for the total, skill-adjusted number of weekly hours worked that serves as our labor input is constructed through the weighting scheme of equation (9). The required data on earnings by sex and educational attainment is provided by Eurostat for the years 2006 and 2010.

A3.4 Input Shares

We saw in equation (3) that when perfect competition is assumed, then each factor is paid with its marginal product. So, the marginal product of labor will be equal to the labor wage and the marginal product of capital will be equal to the rental price of capital. We can then calculate the respective shares of labor and capital in time t as:

$$\mathbf{S_{L,t}} = \frac{1}{2}\left(\frac{w_t * L_t}{w_t * L_t + \sum_{i=1}^{6} U_{i,t} * K_{i,t}} + \frac{w_{t-1} * L_{t-1}}{w_{t-1} * L_{t-1} + \sum_{i=1}^{6} U_{i,t-1} * K_{i,t-1}}\right) \quad \textbf{(10)}$$

$$\mathbf{S_{K,t}} = \frac{1}{2}\left(\frac{\sum_{i=1}^{6} U_{i,t} * K_{i,t}}{w_t * L_t + \sum_{i=1}^{6} U_{i,t} * K_{i,t}} + \frac{\sum_{i=1}^{6} U_{i,t-1} * K_{i,t-1}}{w_{t-1} * L_{t-1} + \sum_{i=1}^{6} U_{i,t-1} * K_{i,t-1}}\right),$$

(11)

where $w_t * L_t$ is the total remuneration of labor in time t, which includes the compensation of both employees and self-employed) and $w_{t-1} * L_{t-1}$ are the total user costs of capital in time t. The sum of the remuneration of capital and labor should equal gross value added[99].

[99] The reader is reminded that the endogenous, ex-post rate of return for every period was computed by equating gross operating surplus plus capital related taxes on production to the total user costs of capital.

A4 Capacity Utilization

We have seen how our estimated productivity is procyclical and can explain a large part of the observed variation in GDP over time. Basu and Kimbal (1997) have argued that such a procyclicality may also result from measurement error. In particular, they argue that if other procyclical inputs are systematically mismeasured or omitted, this will translate into a biased estimate for TFP. To account for variable capital utilization, we implement the decomposition of King and Rebelo (1999) and incorporate capital utilization in a Cobb-Douglas production function as follows:

$$\boldsymbol{Y = F(A,K,L) = \mathrm{A_t} * F(\mathrm{z_t} * \mathrm{K_t}, \mathrm{L_t})\ \mathrm{L_t} = \mathrm{A_t} * F(\mathrm{z_t} * \mathrm{K_t}, \mathrm{L_t})\ \mathrm{L_t} = \mathrm{A_t} * (\mathrm{z_t} * \mathrm{K_t})^{1-a} * \mathrm{L_t}^{a}}$$

(12)

Where $\mathbf{z_t}$ denotes the rate of utilization. We also assume that a variable utilization of capital affects the formation of capital through the relation:

$$\boldsymbol{Stock_{end}^{t} = Stock_{begin}^{t} + I_t - \delta(\mathrm{z_t}) * (Stock_{begin}^{t} + \frac{I_t}{2})}$$

(13)

Where $\boldsymbol{\delta}$ is a convex, increasing function of the utilization rate. Profit maximization with optimal utilization rate implies that the representative firm equates the marginal benefit of higher utilization with the marginal cost. It can then be shown that:

$$\frac{\dot{Y}}{Y} = \mathrm{g_t} + \mathrm{S_{K,t}} * \frac{\dot{K}}{K} + \mathrm{S_{L,t}} * \frac{\dot{L}}{L} + \frac{\mathrm{S_{K,t}}}{\mathrm{S_{L,t}} + \xi} * (\mathrm{g_t} - \mathrm{S_{L,t}} * \frac{\dot{K}}{K} + \mathrm{S_{L,t}} * \frac{\dot{L}}{L})$$

(14)

Where the last term expresses capacity utilization and ξ is the elasticity of the marginal depreciation rate of capital with respect to the level of utilization:

$$\xi = \frac{z * \delta''(z)}{\delta'(z)} > 0$$

Most studies use a ξ between 0 and 2, mostly based on Basu and Kimball (1997) who found a 95% confidence interval between these values. With a higher value for ξ the effects of capital utilization diminish and TFP becomes more procyclical, as shown below. For our calculations, we use a value of 0.5 for ξ.

Table 10
TFP estimates for different values of ξ

	ξ=0.1	ξ=0.5	ξ=1	ξ=1.5	ξ=2	Without correction for utilization
1961-1973	7.00%	7.07%	7.12%	7.15%	7.17%	7.26%
1974-1979	1.30%	1.07%	0.91%	0.82%	0.76%	0.44%
1980-1993	-0.11%	-0.23%	-0.32%	-0.37%	-0.41%	-0.58%
1994-2007	1.41%	1.49%	1.54%	1.56%	1.60%	1.71%
2008-2017	-0.61%	-0.86%	-1.03%	-1.14%	-1.21%	-1.56%

A5 Annual Results

Table 11

Growth Decomposition with Capital Stocks, Hours Worked and Capacity Utilization

			Labour Input breaks into:				
	GDP	Labour Input	Total Employment	Average Hours	Net Capital Stock	Capacity Utilization	TFP
1961	14.44%	-0.04%	0.33%	-0.37%	1.13%	0.81%	12.53%
1962	5.08%	-1.17%	-0.81%	-0.36%	1.22%	-0.18%	5.21%
1963	13.07%	-1.47%	-1.11%	-0.35%	1.16%	1.00%	12.38%
1964	2.86%	-1.34%	-1.00%	-0.34%	1.43%	-0.51%	3.29%
1965	15.29%	-0.86%	-0.53%	-0.34%	1.84%	1.27%	13.04%
1966	2.42%	-1.00%	-0.67%	-0.33%	1.86%	-0.83%	2.39%
1967	7.96%	-1.24%	-0.90%	-0.33%	1.48%	0.33%	7.39%
1968	8.79%	-1.25%	-0.91%	-0.34%	1.84%	0.18%	8.03%
1969	6.26%	-0.56%	-0.23%	-0.33%	2.31%	-0.48%	5.00%
1970	13.06%	-1.31%	-0.06%	-1.24%	2.63%	1.41%	10.34%
1971	11.05%	0.19%	0.16%	0.02%	3.80%	0.89%	6.17%
1972	7.45%	0.30%	0.26%	0.04%	4.79%	-0.82%	3.18%
1973	7.63%	0.53%	0.50%	0.03%	4.67%	-0.55%	2.98%
1974	-7.00%	0.08%	0.05%	0.03%	2.13%	-3.87%	-5.35%
1975	5.28%	0.08%	0.05%	0.03%	2.37%	0.23%	2.60%
1976	6.64%	0.63%	0.60%	0.03%	2.43%	0.60%	2.97%
1977	5.77%	0.45%	0.42%	0.03%	2.63%	0.10%	2.59%
1978	5.08%	0.26%	0.22%	0.04%	2.68%	-0.24%	2.39%
1979	3.89%	0.65%	0.61%	0.04%	2.60%	-0.58%	1.22%
1980	1.22%	0.78%	0.76%	0.02%	1.72%	-0.78%	-0.50%
1981	-1.52%	2.83%	2.83%	0.00%	1.26%	-1.30%	-4.31%
1982	-1.29%	-0.61%	-0.60%	-0.01%	1.03%	-1.06%	-0.64%
1983	-0.78%	0.21%	0.28%	-0.07%	1.10%	-0.95%	-1.14%
1984	1.85%	-0.14%	-0.13%	-0.01%	0.56%	0.14%	1.29%
1985	2.56%	1.43%	1.46%	-0.03%	0.75%	0.22%	0.16%
1986	0.55%	0.21%	0.20%	0.01%	0.72%	-0.32%	-0.05%
1987	-2.25%	0.01%	-0.05%	0.06%	0.56%	-1.04%	-1.78%
1988	4.06%	0.85%	0.93%	-0.07%	0.59%	0.81%	1.81%
1989	3.82%	0.27%	0.21%	0.06%	0.68%	0.64%	2.23%
1990	0.11%	0.84%	0.77%	0.06%	0.72%	-0.45%	-0.99%
1991	2.92%	-0.98%	-1.02%	0.03%	0.80%	0.29%	2.82%
1992	0.74%	0.81%	0.81%	0.00%	0.69%	-0.24%	-0.52%
1993	-1.48%	0.44%	0.46%	-0.02%	0.57%	-0.82%	-1.66%
1994	1.94%	0.98%	1.03%	-0.05%	0.46%	0.27%	0.22%
1995	2.15%	0.52%	0.50%	0.01%	0.52%	0.28%	0.83%
1996	2.82%	-0.36%	-0.32%	-0.03%	0.70%	0.35%	2.12%
1997	4.54%	-0.21%	-0.18%	-0.04%	0.74%	0.82%	3.19%
1998	3.79%	2.52%	2.54%	-0.03%	1.25%	0.25%	-0.22%
1999	3.16%	0.96%	0.26%	0.70%	1.37%	-0.02%	0.85%
2000	3.87%	0.58%	0.85%	-0.27%	1.36%	0.19%	1.73%
2001	4.11%	1.95%	1.74%	0.21%	1.46%	0.22%	0.48%
2002	4.03%	0.45%	0.76%	-0.31%	1.32%	0.27%	1.98%
2003	5.72%	1.31%	1.15%	0.16%	1.63%	0.50%	2.28%
2004	5.09%	0.45%	0.58%	-0.13%	1.63%	0.35%	2.66%
2005	0.60%	0.24%	0.47%	-0.23%	1.07%	-0.55%	-0.16%
2006	5.69%	0.53%	1.13%	-0.61%	1.47%	0.50%	3.18%
2007	3.24%	0.07%	0.48%	-0.41%	1.88%	-0.39%	1.68%
2008	-0.30%	0.37%	0.59%	-0.22%	1.60%	-1.15%	-1.12%
2009	-4.31%	-1.12%	-0.72%	-0.39%	0.92%	-1.72%	-2.39%
2010	-5.51%	-2.21%	-2.32%	0.10%	0.35%	-1.59%	-2.06%
2011	-9.13%	-4.77%	-4.85%	0.09%	-0.05%	-2.19%	-2.12%
2012	-7.30%	-5.63%	-5.54%	-0.09%	-0.40%	-1.54%	0.27%
2013	-3.24%	-2.95%	-3.00%	0.05%	-0.51%	-0.49%	0.71%
2014	0.74%	0.04%	0.35%	-0.31%	-0.56%	0.57%	0.69%
2015	-0.40%	1.33%	1.27%	0.06%	-0.54%	0.25%	-1.45%
2016	-0.23%	1.34%	1.09%	0.25%	-0.47%	0.26%	-1.35%
2017	1.51%	1.00%	1.29%	-0.29%	-0.35%	0.64%	0.22%

Table 12

Growth Decomposition with Capital and Labor Services

	GDP	Labour Input	Labour Input breaks into:			Capital Services	Capital Services break into:		TFP
			Total Employment	Average Hours	Labour Composition		Net/Productive capital Stock	Quality Effect	
1997	4.54%	-0.09%	-0.18%	-0.04%	0.12%	0.31%	0.93%	-0.62%	4.32%
1998	3.79%	2.86%	2.54%	-0.03%	0.35%	1.03%	1.23%	-0.20%	-0.10%
1999	3.16%	1.09%	0.26%	0.70%	0.13%	1.66%	1.56%	0.10%	0.41%
2000	3.87%	0.59%	0.85%	-0.27%	0.01%	1.70%	1.59%	0.11%	1.59%
2001	4.11%	2.04%	1.74%	0.21%	0.08%	1.75%	1.62%	0.13%	0.33%
2002	4.03%	0.69%	0.76%	-0.31%	0.24%	1.83%	1.54%	0.29%	1.51%
2003	5.72%	1.46%	1.15%	0.16%	0.14%	1.90%	1.58%	0.32%	2.37%
2004	5.09%	1.17%	0.58%	-0.13%	0.72%	1.89%	1.73%	0.15%	2.03%
2005	0.60%	0.21%	0.47%	-0.23%	-0.03%	1.32%	1.37%	-0.05%	-0.93%
2006	5.69%	0.70%	1.13%	-0.61%	0.18%	1.38%	1.32%	0.07%	3.61%
2007	3.24%	0.19%	0.48%	-0.41%	0.12%	2.23%	1.77%	0.46%	0.83%
2008	-0.30%	0.53%	0.59%	-0.22%	0.16%	2.13%	1.70%	0.43%	-2.96%
2009	-4.31%	-1.14%	-0.72%	-0.39%	-0.02%	1.24%	1.13%	0.11%	-4.41%
2010	-5.51%	-1.97%	-2.32%	0.10%	0.25%	0.45%	0.54%	-0.09%	-3.99%
2011	-9.13%	-4.43%	-4.85%	0.09%	0.34%	-0.22%	0.09%	-0.30%	-4.48%
2012	-7.30%	-5.33%	-5.52%	-0.09%	0.27%	-0.90%	-0.27%	-0.63%	-1.07%
2013	-3.24%	-2.46%	-2.99%	0.05%	0.48%	-1.12%	-0.45%	-0.66%	0.33%
2014	0.74%	0.01%	0.35%	-0.31%	-0.02%	-0.89%	-0.47%	-0.42%	1.61%
2015	-0.40%	1.42%	1.27%	0.06%	0.09%	-0.64%	-0.44%	-0.20%	-1.18%
2016	-0.23%	1.80%	1.09%	0.32%	0.38%	-0.52%	-0.37%	-0.16%	-1.50%
2017	1.51%	1.25%	1.29%	-0.23%	0.19%	-0.35%	-0.25%	-0.10%	0.61%

We note at this point that in Table 7 we decompose the rate of change of labor input into the rate of change of total hours and that of labor composition (ΔLnFt) using:

$$\mathbf{\Delta LnF_t = \Delta LnL_t - \Delta LnH_t} \qquad \textbf{(15)}$$

Equation 15 tells us that the rate of change of labor composition equals the rate of change of labor input minus that of total hours worked. In the same way, we decompose the growth of capital services into the growth of productive stock (which in our case is the same as net capital stock) and that of quality of capital (Q):

$$\mathbf{\Delta LnQ_t = \Delta LnB_t - \Delta LnK_t} \qquad \textbf{(16)}$$

B1. Unit Root Tests

The Augmented Dickey-Fuller test constructs a parametric correction for higher than first order lag correlation by assuming that the series follows an AR(*p*) process and adding lagged *p* difference terms of the dependent variable *y* to the right-hand side of the test regression:

$$\boldsymbol{\Delta_{y_t} = a * y_{t-1} + x'_t * \delta + \beta_1 * \Delta_{y_{t-1}} + \beta_2 * \Delta_{y_{t-2}} + \cdots + p * \Delta_{y_{t-p}} + v_t}$$

(17)

We tested three different versions of the above specification, namely an equation that includes a) a constant, b) a constant and a linear time trend, and c) one that has neither. The optimal number of lags was chosen based on the Schwarz Info criterion.

Phillips and Perron (1988) propose an alternative method of controlling for serial correlation when testing for a unit root. Their method estimates a non-augmented AR(1) Dickey-Fuller equation and modifies the *t*-statistic of the a coefficient so that serial correlation does not affect the asymptotic distribution of the test statistic. The Phillips-Perron test is based on the statistic:

$$\boldsymbol{z_a = t_a * \left(\frac{\gamma_0}{f_0}\right)^{1/2} - \frac{T*(f_0-\gamma_0)*(se(\hat{a}))}{2*f_0^{\frac{1}{2}}*s}} \quad \textbf{(18)}$$

where $\hat{a}$ is the estimate, and t_a the *t*-statistic of a, $se(\hat{a})$ is the coefficient standard error, and s is the standard error of the test regression. In addition, γ_0 is a consistent estimate of the error variance in the simple Dickey-Fuller equation, and f_0 is an estimator of the residual spectrum at frequency zero.

Again, we test classifications that include a constant, a constant and a linear time trend, or neither.

B2. Unit Root Tests with a break

Structural change occurs in many time series for any number of reasons, including economic crises, changes in institutional arrangements, policy changes and regime shifts. Perron (1989) points out that conventional unit root tests are biased toward a false unit root null when the data are trend stationary with a structural break. Accordingly, we want to test for non-stationarity while taking into account the possibility of a break in the series. Two models exist in the literature which differ in their treatment of the break dynamics: the innovational outlier (IO) model assumes that the break occurs gradually, with the breaks following the same dynamic path as the innovations; and the additive outlier (AO) model assumes the breaks occur immediately. The tests based on these models evaluate the null hypothesis that the series follow a unit root process, possibly with a break, against a trend stationary with break alternative. For the IO model, we consider the following general null hypothesis:

$$\boldsymbol{y_t = y_{t-1} + \beta + \psi(L) * (\theta * D_t(T_b) + \gamma DU_t(T_b) + \varepsilon_t)} \quad \textbf{(19)}$$

where: - $DU_t(T_b)$ is an intercept break variable that takes the value of 0 for all dates prior to the break, and 1 thereafter: $DU_t(T_b) = 1\ (t \geq T_b)$,

- $DT_t(T_b)$ is a one-time break dummy variable which takes the value of 1 only on the break date and 0 otherwise,

- ε_t are i.i.d. innovations,

- and $\psi(L)$ is a lag polynomial representing the dynamics of the stationary and invertible ARMA error process.

The break variables enter the model with the same dynamics as the innovations. For the AO model, $\psi(L)$ is excluded so that the full impact of the break variables occurs immediately. For our alternative hypothesis, we assume a trend stationary model with breaks in the intercept and trend:

$$\boldsymbol{y_t = y_{t-1} + \beta t + \psi(L) * (\theta * DU_t(T_b) + \gamma DT_t(T_b) + \varepsilon_t)} \quad \textbf{(20)}$$

where: $DT_t(T_b)$ is a trend break variable that takes the value of 0 for all dates prior to the break, and is a break date re-based trend for all subsequent dates: $D_t(T_b) = 1\ (t \geq T_b) * (t - T_b + 1)$. The breaks again follow the innovation dynamics.

We consider different specifications that control for: a) an intercept break, b) an intercept and trend break, and c) only a change in trend. The break date is endogenously determined by minimizing the Dickey-Fuller t-statistic. The idea is to select the date providing the most evidence against the null hypothesis of a unit root and in favor of the breaking trend alternative hypothesis.

B3. Structural Break Tests

As our primary tool to detect breaks we use procedures developed by Bai and Perron. Their methodology has the advantage of allowing multiple break points to be determined endogenously, however it "precludes integrated variables (with an auto-regressive unit root)" (2000, p.10). Consequently, we look for a break in growth rates of variables that are found to be stationary. We carry out the following three procedures: i) a sequential test of L+1 breaks vs the alternative of L breaks, ii) a test of globally optimized breaks against the null of no breaks and iii) global information criteria to select the number of breaks.

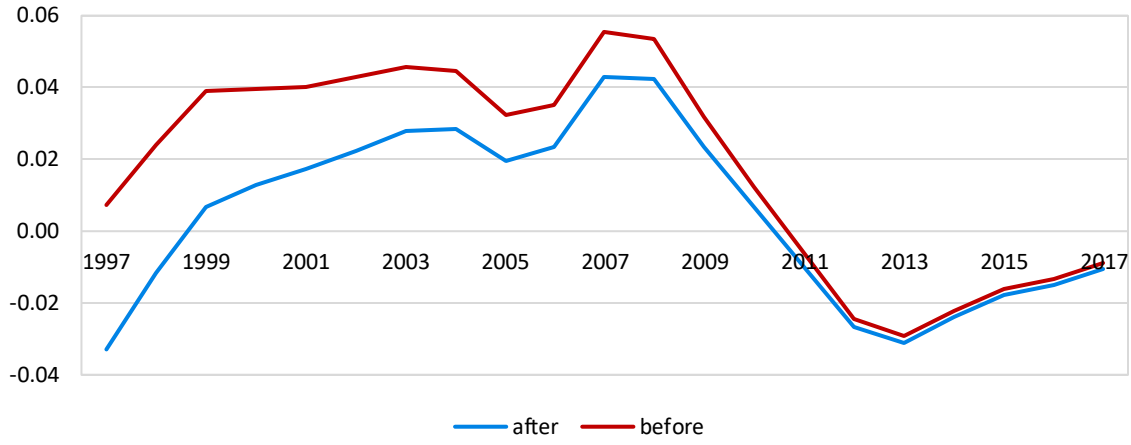
C. Robustness checks for capital services

In this section we examine the robustness of our constructed measure of capital services by repeating the calculations based on some alternative assumptions.

We begin by examining the effect on the growth rates of capital services by an increase in initial capital stocks. We raise the initial stocks of all assets by 50% and the results are depicted in the following figure:

Figure 11

Capital services growth rates before and after a 50% increase in initial stocks



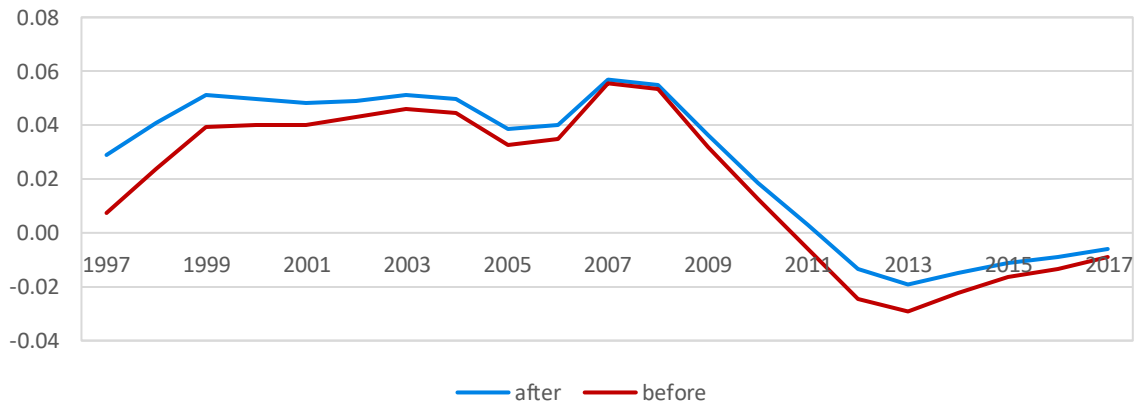
Source: Authors' calculations

Raising the capital stocks of all assets results in a decrease in capital services growth rates by 1.44% on average in comparison with our initial findings. The distance between the two curves is larger at the beginning and narrows towards the end of the period we examine.

Next, we consider the effects of a 25% decrease on the depreciation rates of all assets. The results are shown in the next figure:

Figure 12

Capital services rate of change before and after a 25% decrease in all depreciation rates



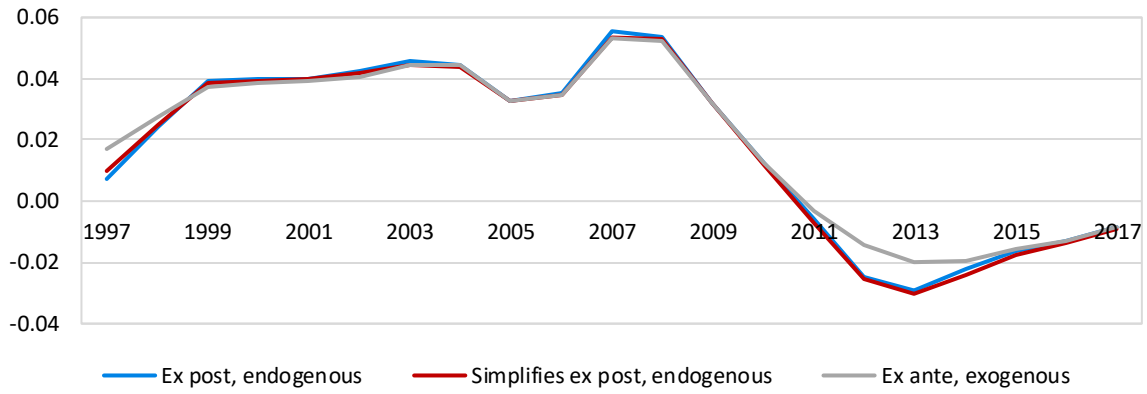
Source: Authors' calculations

The decreased depreciation rates cause our estimates to deviate by 0.77% on average.

We will now present the results of estimating capital services when different approaches in the estimation of rates of return to capital are used. In section 2.1 we explained the

assumption of the endogenous, ex post approach that we followed. We now consider two more: the endogenous, simplified approach and the exogenous, ex ante approach. The endogenous, simplified approach rests on the assumption that real holding gains or losses are zero for each type of asset. Such an assumption will be reasonable if the asset price changes are not too far from general price changes. According to the exogenous, ex-ante approach the rate of return is chosen from financial market data so as best to express economic agents' expectations about the required return from investment. In this case equality between the value of capital services and gross operating surplus plus the capital element of gross mixed is not expected. Following the methodology of the Conference Board, the exogenous rate of return is computed as the maximum between the Central Bank's Discount Window, the Government Bond Yield and the Lending Rate. Series on the last two components are collected from the Bank of Greece Statistical Database, while for the Discount Window we resorted to the ECB. The results, shown below, indicate that our measures are robust to these considerations:

Figure 13
Tornqvist Indices



Source: Authors' calculations

D. Calculations of output shortfall in the Greek Depression

The calculations in Tables 6 and 7 and Figures 7 and 8 embody the basic identity:

Output growth = productivity growth + capital contribution + labor contribution.

In turn, *capital contribution = capital share × change in log per capita input*

and *labor contribution = labor share × change in log labor input.*

Finally,

Change in log labor input = change in log population + change in log participation rate + change in log employment rate + change in log hours per week + change in log labor quality

Figures 7 and 8 in the main text show the cumulative contribution of each component to total output shortfall by year.

E. Data Sources

Code	Variable
A1	Gross domestic product (nominal)
A2	GDP deflator
A3	Gross operating surplus and gross mixed income
A4	Consumer price index
A5	Total dependent employment
A6	Total self-employed
A7	Total employment, Full-time, Part-time employment
A8	Earnings
A9	Compensation of employees
A10	Gross value added
A11	Other taxes less other subsidies on production
A12	Gross fixed capital formation by type of asset
A13	Gross fixed capital formation, deflators
A14	Average Hours Actually Worked

The data was collected from:

A1, A2, A3, A9, A10, A11, A12, A13 : http://www.oecd-ilibrary.org/ ➔ Statistics ➔ Databases ➔ OECD National Accounts Statistics ➔ Aggregate National Accounts ➔ Gross Domestic Product

A5, A6, A7: http://www.oecd-ilibrary.org/ ➔ Statistics ➔ Databases ➔ OECD Economic Outlook: Statistics and Projections ➔ OECD Economic Outlook No.102

A4: http://www.oecd-ilibrary.org/ ➔ Statistics ➔ Databases ➔ OECD Factbook Statistics ➔ OECD Factbook

A8: http://epp.eurostat.ec.europa.eu/portal/page/portal/eurostat/home/ ➔Statistics Database ➔
Population and Social Conditions ➔Labor Market ➔ Earnings ➔Structure of Earnings Survey 2006, 2010

A7: http://epp.eurostat.ec.europa.eu/portal/page/portal/eurostat/home/ ➔Statistics Database ➔
Population and Social Conditions ➔Labor Market ➔ Employment and Unemployment ➔ LFS series - Detailed annual survey results ➔ Full-time and part-time employment - LFS series ➔ Full-time and part-time employment by sex, age and highest level of education attained

A14: http://epp.eurostat.ec.europa.eu/portal/page/portal/eurostat/home/ ➔Statistics Database ➔ Population and Social Conditions ➔ Labor Market ➔ LFS series - Detailed annual survey results ➔Working time - LFS series ➔ Average number of actual weekly hours of work in main job, by sex, professional status, full-time/part-time and economic activity

Chapter 9. Income inequality and re-distribution: from crisis to recovery

Eirini Andriopoulou[100], Eleni Kanavitsa[101] and Panos Tsakloglou[102]

Abstract

This chapter provides a detailed picture of the evolution of the level and the structure of inequality during the period 2007-2016, in which Greece faced one of the most severe debt crises among developed countries. The aim is to examine how changes in overall income distribution affected inequality between and within different socioeconomic groups and thus indirectly how the burden of fiscal consolidation was shared across population groups. The findings are linked with economic developments and policy choices of the period in question. The results show that inequality rose at the beginning and the peak of the crisis, but the magnitude of the change varies across different indices. The recorded increases are larger when the indices used are relatively more sensitive to changes close to the bottom of the income distribution. The increase in unemployment played the most substantial role for the decrease in income of a large share of the population, in combination with the absence of an adequate safety net. Inequality "within population groups" was far more important in shaping aggregate inequality than inequality "between population groups". The contribution of disparities between educational groups to aggregate inequality declined while that of disparities between different occupational groups rose.

JEL Numbers: D31, I31

Keywords: Greek crisis, inequality, decomposition analysis

Acknowledgements: The research of Eleni Kanavitsa was co-financed by Greece and the EU (ESF) through the Operational Programme "Human Resources Development, Education and Lifelong Learning" (project "Strengthening Human Resources Research Potential via Doctorate Research", (MIS-5000432).

The views expressed in the article are those of the authors and should not be attributed to the Council of Economic Advisors.

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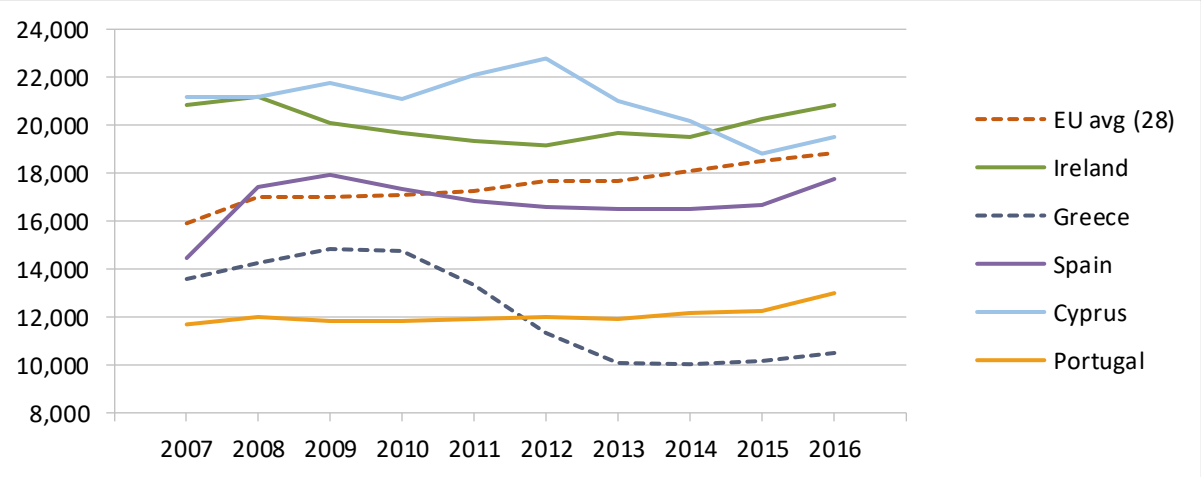
1. Introduction

Greece was hit severely by the financial crisis of 2008, suffering a cumulative GDP per capita decline of 26% from 2007 to 2013[103]. The extremely high public debt and deficit of 2009 put the country into a defaulting financial position that led to the first fiscal adjustment program, as financial assistance provided by the European Commission, the International Monetary Union and the European Central Bank. Along with the great decrease in GDP per capita, Greece faced the largest decline in mean equivalized household income between 2007-2013 compared to the other countries that also received financial support[104], as shown in Graph 1.

Graph 1. Mean equivalized net income in PPS, 2007-2016



Data source: EUROSTAT, EU-SILC 2008-2017 (Incomes 2007-2016).
Note: The values of EU avg refer to EU avg 27(2007-2013) for the years 2007-2009 and to EU avg 28 for the years 2010-2016 expressed in Euros.

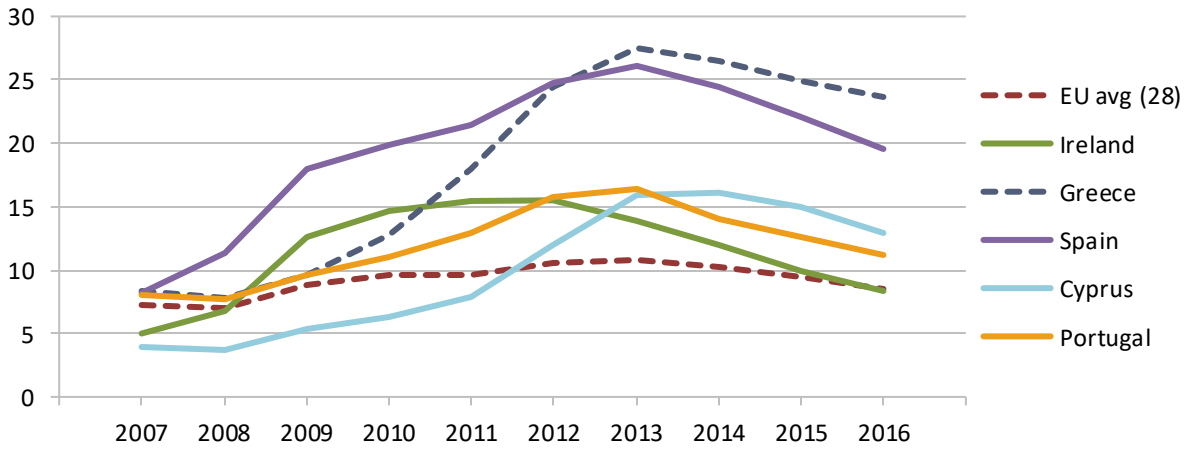
Cingano (2014) points out that despite the increase of average real household income in all countries for the last 20 years before the onset of the crisis, the post-crisis picture altered a lot; the average real household income remained unchanged or fell in most countries, with Spain, Ireland, Iceland and Greece having the greatest decrease by more than 3.5% per year. Cumulatively the disposable income in Greece felt by 42% between 2009 and 2014 and therefore the drop was much larger than the fall in GDP per capita, although the decline started with a two-year lag (Andriopoulou et al. 2019).

The decline in household income is mainly attributed to the decrease of labor income caused by the high rate of job losses. Unemployment rate in Greece was very close to the EU average in 2007 (7.7% vs. 6.8%), while the first three years of the crisis, the unemployment rate

[103] See http://ec.europa.eu/economy_finance/ameco/user/serie/ResultSerie.cfm
[104] See https://ec.europa.eu/info/financial-assistance-euro-area-countries_en

increased in almost all EU countries. However, in Greece, the increase was enormous (20 percentage point) reaching 27.5% in 2013, as shown in Graph 2. The unemployment rate in Greece exceeded the already highest unemployment rate of Spain and remained the highest among programme countries since then. However, after 2013, unemployment rate in Greece started declining, following the trend in the rest of EU countries. Both features, the increase of unemployment rate and decrease of household income are very often being the main drivers of rising income inequality (OECD 2011; Eurofound 2017; Ridao-Cano and Bodewig 2018).

Graph 2. Unemployment rate (in %), 2007-2016



Data source: EUROSTAT, LFS 2007-2016.

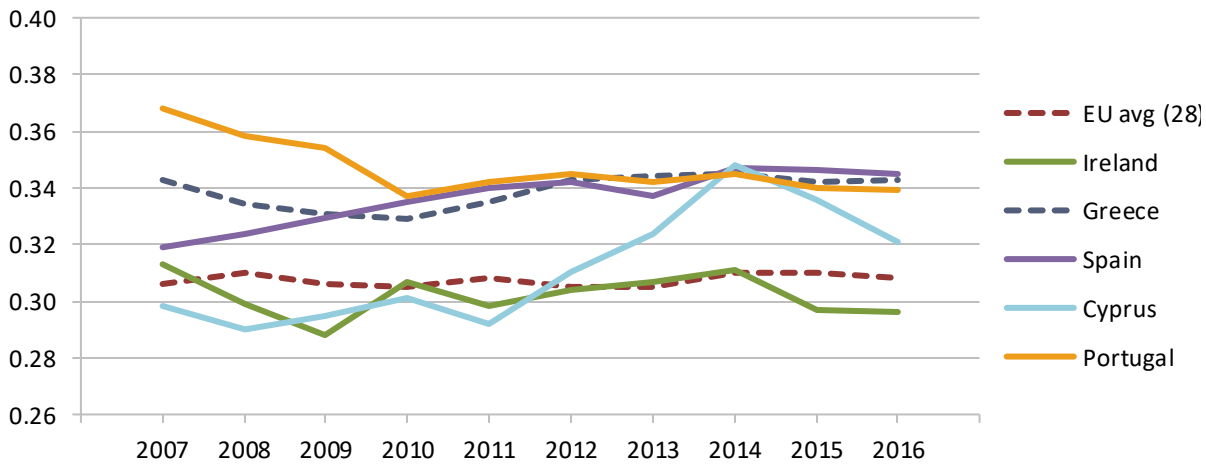
As Graph 3 indicates, the trend of the Gini coefficient[105] has been positive for all countries that implemented consolidation measures, with Greece experiencing an increase in income inequality within the first three years of the crisis and then being stabilized, while Cyprus faced the greatest increase between 2011 and 2015, when it started being reduced.

The positive relationship between inequality and fiscal consolidation is verified by the literature and particularly for expenditure-based consolidation episodes with causality going to both ways. Brinca et al. (2021) find that countries with higher income inequality experience significant stronger declines in output following decreases in government consumption. Agnello and Sousa (2014) prove that income inequality significantly rises during periods of fiscal consolidation, while fiscal policy that is driven by spending cuts seems to have more severe impact for income distribution. Heimberger (2020) also identifies a strong positive link between the size and duration of the austerity and the effects on inequality. On the contrary,

[105] The Gini coefficient is one of the most commonly used inequality indices taking values from 0 to 1, while the highest its value the more inequality indicated.

Fabrizio and Flamini (2015) support that the progressivity of consolidation efforts depends on the specific composition and design of measures. Moreover, Furceri et al. (2015) underline that the benefits of fiscal adjustments should be weighed against their likely distributional impact as they find that typical fiscal consolidations lead to an increase in income inequality on the order of 0.2–1.0 units (corresponding to a Gini index point) in the short and medium term.

Graph 3. Gini Index, 2007-2016



Data source: EUROSTAT, EU-SILC 2008-2017 (Incomes 2007-2016).
Note: The values of EU avg refer to EU avg 27(2007-2013) for the years 2007-2009 and to EU avg 28 for the years 2010-2016.

There is a number of empirical studies that examine the distributional impacts of the consolidation measures in Greece, using several data sources such as the Household Budget Survey and focusing only the short-term impacts of the consolidation measures mainly due to the time lag in data access. They conclude that some policies were progressive, but other have caused regressive effects in the income distribution.

Matsaganis and Leventi (2013) demonstrate that changes in inequality were less severe at the beginning of the crisis and that some austerity policies appear to have had a progressive effect, despite the fact that in relative terms, the poor seem to have contributed more to the government's fiscal consolidation effort than the rich. These early findings suggest that income inequality did not change in 2010-2011 but it increased significantly in 2012, and got worsen as the recession deepened, driven primarily by the steep rise in unemployment. In a later study, comparing the distributional implications of the crisis in Greece, Spain, Italy and Portugal from 2009 to 2013, the authors indicate that poverty and inequality in Greece have risen to alarming levels compared to the other countries (Matsaganis and Leventi 2014a). Despite the fact that the main driver of growing inequality is the recession, especially rising unemployment, rather than austerity per se, the implemented policies as well as the

automatic stabilizers in place seem to fail in addressing the increasing poverty and inequality trends (Matsaganis and Leventi 2014b; Andriopoulou et al. 2018).

Another aspect of inequality in this period is studied by Kaplanoglou and Rapanos (2018) using consumption data. They identify the weakening of the middle class as the driving factor of the increasing inequality consumption trend and alert that families with children massively moved to the lower-end of the welfare distribution. Moreover, they underline that the indirect tax hikes exacerbated consumption inequality. The fact that the crisis did not impact uniformly the whole population and often worsened the situation for the population sub-groups that were more vulnerable to poverty and inequality even before the crisis (such as the unemployed, temporary and part-time workers, single parent families and non-EU migrants) has been verified by many studies, as well as the emergence of new risk groups (households with more than one unemployed, persistent unemployed, working poor and the youth) (Mitrakos 2015; Andriopoulou et al. 2018; Giannitsis and Zografakis 2018).

The purpose of this study is to examine the evolution of the level and the structure of inequality in Greece for a larger period than the previous studies, in the decade 2007-2016, and also link the findings with economic developments and policies. In addition, we are particularly interested in examining the changes in inequality across and between different population groups, therefore we split the population using five different criteria: a) the occupational status of household head, b) the presence of at least one unemployed member in the household, c) to the age of the population member, d) the household type and e) the educational status of household head. In periods of rapid changes, as the one under examination, apart from incomes, the composition of population also changes, therefore we first present the changes in different population shares and the relative mean income of the above-mentioned groups (section 3.1). In section 3.2.1, we analyze the evolution of inequality in the total population using four different inequality indices, while then using only one of them, we examine the evolution of inequality in each population group. Subsequently, we measure the inequality "between" and "within" groups and then we focus only on the "between" groups component of inequality (section 3.2.2). Finally, we perform a trend decomposition analysis (section 3.2.3), in which we try to examine to what extent changes in aggregate inequality can be attributed to changes in inequality within group, to changes in the population share or to changes in the relative mean income.

2. Data and Methods

The data used in the analysis come from the Greek data set of the Survey of Income and Living Conditions (SILC) of the Hellenic Statistical Authority for the period 2008-2017 (corresponding to incomes with one-year time lag, thus 2007-2016). The official poverty and inequality statistics at national and European level are derived from the data of this harmonized cross-

national longitudinal survey that runs in all European Member-States. It is a truly rich data set providing detailed information on income, employment, health, education, housing, migration, social transfers and social participation, as well as socio-demographic characteristics of the participating households and their members.

Our analysis is based on the "disposable monetary household income", which is the sum of monetary incomes of all household members (members living under the same roof) from all income sources after the subtraction of direct taxes and social insurance contributions. The economies of scales and the differences in needs of households with differences in size and composition should be taken into consideration. Thus, household incomes are standardized using the household equivalence scales used by OECD[106] and Eurostat. These scales assign a weight of 1.0 to the household head, 0.3 to each household member aged below 14 and 0.5 to the remaining household members[107].

Changes in the level of aggregate inequality are measured using four indices. The Gini index, the Mean Log Deviation (MLD, also known as the Second Theil index) and two members of the Atkinson family of inequality indices for inequality aversion parameters 0.25 and 0.75 (ATK0,25 and ATK0.75, respectively). Each index of inequality corresponds to a different Social Welfare Function and is relatively more sensitive to changes in different parts of the income distribution[108]. The Gini index is the most popular index and is relatively more sensitive to changes in the middle of the income distribution, the ATK0.25 is more sensitive to changes close to the top of the distribution, while the ATK0.75 and the MLD are more sensitive to changes close to the bottom of the distribution (Lambert 2002; Cowell 2011). This practically means that when a decrease in income occurs to an individual that is "poor", i.e., close to the bottom of the income distribution, the ATK0.25 and the MLD register a greater increase in inequality than the Gini and ATK0.25 indices. Further, MLD is "strictly additively decomposable"; that is, when the population is partitioned in non-overlapping and exhausting groups using a particular criterion (demographic, occupational, etc.), it allows the identification of the contribution of each population group to aggregate inequality as well as the identification of the contribution of disparities between population groups to aggregate inequality (Shorrocks 1980; Anand 1983; Tsakloglou 1993). Hence, MLD is used for the analysis of the structure of inequality and trend decomposition that we present in Section 3.2. The trend decomposition analysis or the "*shift-share analysis of inequality*" (Tsakloglou 1993) tries to explain how much of the overall change in inequality is attributed to changes in

[106] See http://www.oecd.org/economy/growth/OECD-Note-EquivalenceScales.pdf

[107] For example, if a family with two children under 14 has an income of 21,000 euros per year, this income corresponds to 21,000/2.1=10,000 equivalized disposable income, where 2.1 is the equivalent scale of the household (1+0.5+2*0.3). In practice this means that each one of the four household members has an income equivalent to a person that lives alone and earns 10,000 euros.

[108] All indices satisfy the standard axioms of inequality measurement (symmetry, mean independence, population invariance and the principle of transfers).

inequality within population groups, in changes in population shares and in relative mean incomes between two periods.

Following the practice of the Luxembourg Income Study (LIS) database, we applied "top and bottom coding" to our samples removing households with equivalized incomes less than 1% and more than ten times the mean equivalized income of the corresponding distribution. Almost all the observations removed - less than 1% of the sample in most years – were located to the bottom end of the distribution and were negative or zero incomes.

3. Results

3.1 Changes in population shares and relative mean income

In order to identify potential driving forces of inequality changes is important to discuss changes in population shares as well as in relative incomes of several population groups during the period of examination. As mentioned earlier, we decompose aggregate inequality by non-overlapping and exhausting groups using five criteria. The first group consists of eight categories identifying the occupational status of household head. Those eight categories include employers (i.e., self-employed with employees), self-employed without employees in the agricultural sector, self-employed without employees outside agriculture, private sector employees, public sector employees, unemployed, pensioners and "other" (i.e., inactive individuals like domestic careers, students, persons in military service etc.). However, due to the sharp increase in unemployment that may affect not only the household head but any other member, we create the second examined population group which is based on the existence of unemployed members in the household. This population group consists of two sub-groups, those individuals living in households with no unemployed members and those living in households with at least one (irrespective of whether the unemployed is the household head or not). The third partitioned criterion we apply is based on the age of population members. Three categories are formed: "youth" being persons up to 17 years of age, working-age persons (18-65) and elderly (65 or over). Given the demographic issue that Greece faces with, according to Eurostat, a negative population growth of 2.3%[109] during the decade we examine, inequality levels for different age groups may have changed over time. According to ELSTAT, the decline in population is probably consequent of population ageing along with the high number of net emigrants that occurred during the crisis. The great majority of the emigrants were working age individuals, mainly young and relatively well educated. The changes in the household composition are also taken into consideration by splitting the population into seven different household types: one-person households or couples with both members aged below 65, one-person households and couples with at least

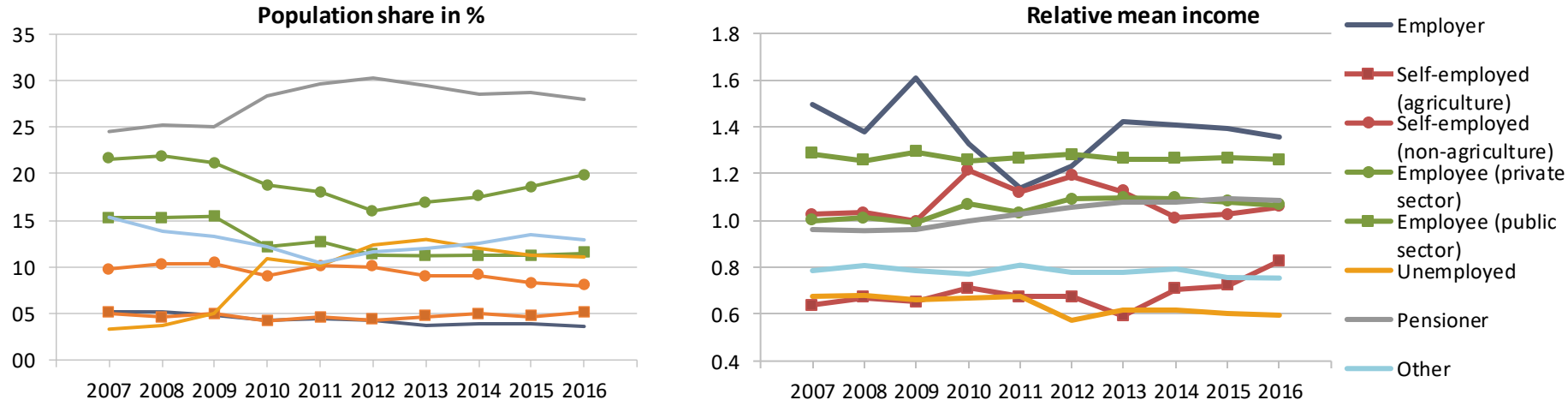
[109] https://ec.europa.eu/eurostat/databrowser/view/demo_gind/default/table?lang=en

one member aged 65 or above, couples with “one or two” and “three or more” dependent children and no other household members, mono-parental households and other household types “with” or “without” dependent children. The last criterion we apply is according to the educational level of household head. We generate seven sub-groups based on whether the household head has or has not completed primary education, has attained either low-, upper- or post-secondary education and then whether she has tertiary education completed.

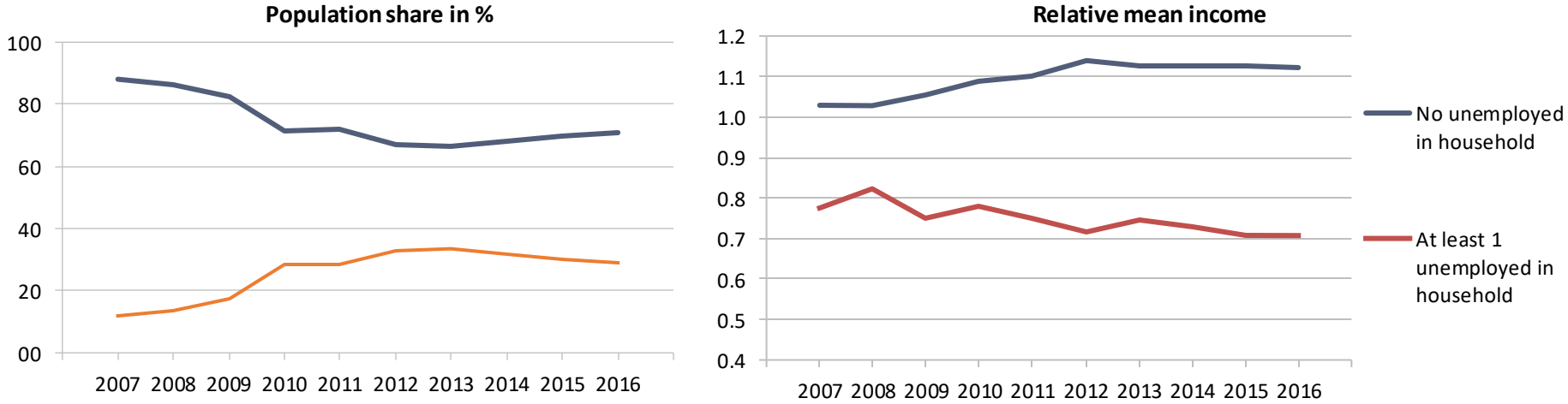
The set of Graphs 4i-4v represents the evolution of changes in population shares and relative mean incomes according to each partitioned criterion. Starting with the occupational status of household head (Graph 4i), we see the sharp increase by 6% in the share of individuals living in households with unemployed head between 2009-2010 reaching its highest point in 2013 (13%), when also the unemployment rate got its highest values since the beginning of the crisis. This shift is also in line with the decrease in the share of persons living in households with head being working in private or public sector between 2007 and 2013. Yet, the share increased substantially between 2013 and 2016 for the private sector employees (reaching 19.9% in 2016), and slightly for public sector employees (11.5%), in line with the negative trend of the aggregate unemployment rate, as discussed in Section 1.

On the other hand, several people who were close to retirement chose to exist the labor market and take early retirement during the crisis, rising even more the already high share of individuals living in households headed by pensioners from 24.5% in 2007 to 30% in 2012 and then to be marginally reduced to 28% in 2016. Unlike what is often publicly discussed, the relative income position of pensioners rose during the crisis; despite the decline of income in real terms.

Graph 4i. Population share and relative mean income according to the occupational status of household head



Graph 4ii. Population share and relative mean income according to number of unemployed household members



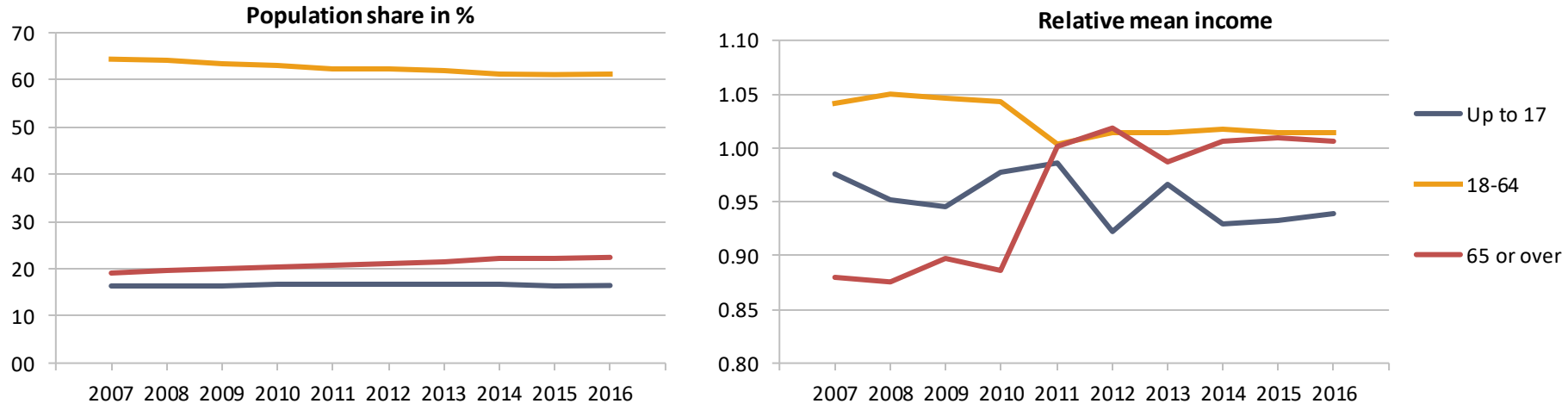
As illustrated in Graph 4ii, while the share of people who were living in households with unemployed members was relatively low in 2007 (12%), this percent almost tripled in 2013, with one out of three individuals in Greece living in households with at least one unemployed member (33%) and declined to 29.2% in 2016. In addition, the relative income position of this group worsened from 78% in 2007 to 75% in 2013 and further to 71% of the average national income in 2015 and 2016.

The decline in working age population discussed above is confirmed when we look at the share of population aged 18-64 showing a decreasing trend throughout the examination period (Graph 4iii). On the other hand, the share of elderly is getting increased, while the share of youth is stable at quite low levels (around 16%) throughout the decade. Interestingly, the aforementioned increase in the relative income position of pensioners is even more remarkable when we look at their position compared to the other age groups. In 2007, on average the elderly had incomes 12% lower than the population mean, while since 2011 their incomes are continuously around the national average income level (+/-1%). On contrary, the relative income position of young is constantly below the national average despite the relatively high fluctuation.

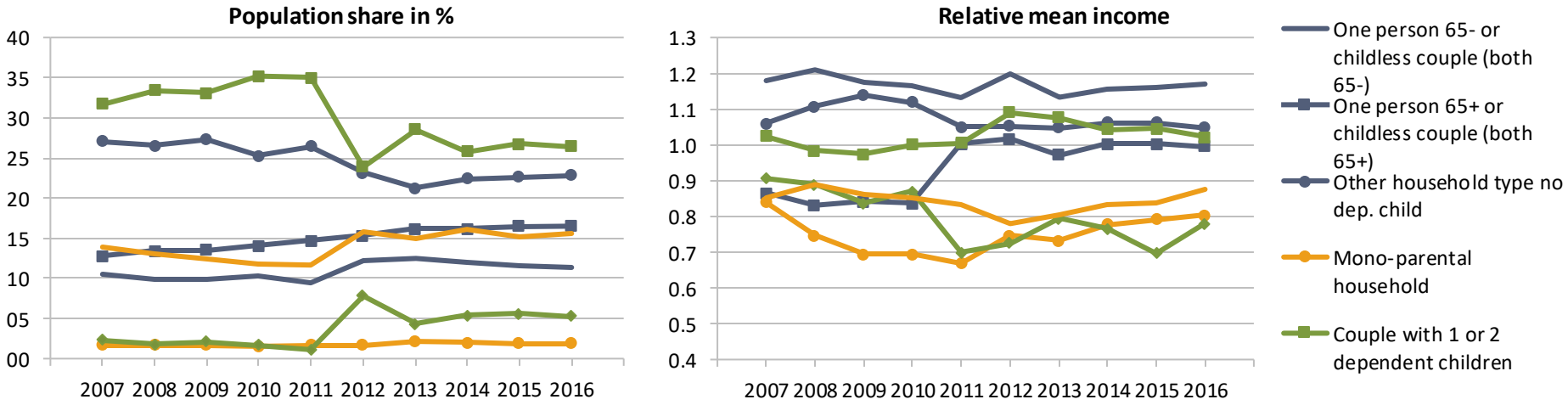
In overall, the population share of the different household types did not change considerably between 2007-2011 (Graph 4iv). Between 2011-2013, there was a significant decline in households with one or two dependent children and an increase in larger families with more than three dependent children. However, after 2013, the population shares are again being almost stabilized. In accordance with earlier findings, the relative income position of the elderly individuals living alone improved substantially. On the other hand, the relatively small but vulnerable groups of mono-parental households and, especially, those having more than three children appear being affected relatively more by the crisis, since their relative income position deteriorates, possibly due to a disproportional effect of unemployment on these household types.

As shown in Graph 4v, most individuals in Greece live in households whose head has attained the upper-secondary education with this share being risen from 29.4% in 2007 to 32.6% in 2016. It is encouraging that the share of those living in households with highly educated head is getting higher throughout the period, while at the same time, the corresponding percentage of those living in households with head who has completed the primary education has declined by 8% between 2007 to 2016. Despite the high share of individuals living in households whose head has attained the upper-secondary education, their relative income position has been constantly below the national mean. As may be expected, the incomes of persons whose household head has tertiary education completed were 50% higher in the pre-crisis period, however this percent declined during the crisis, reaching 35% of the national average in 2016.

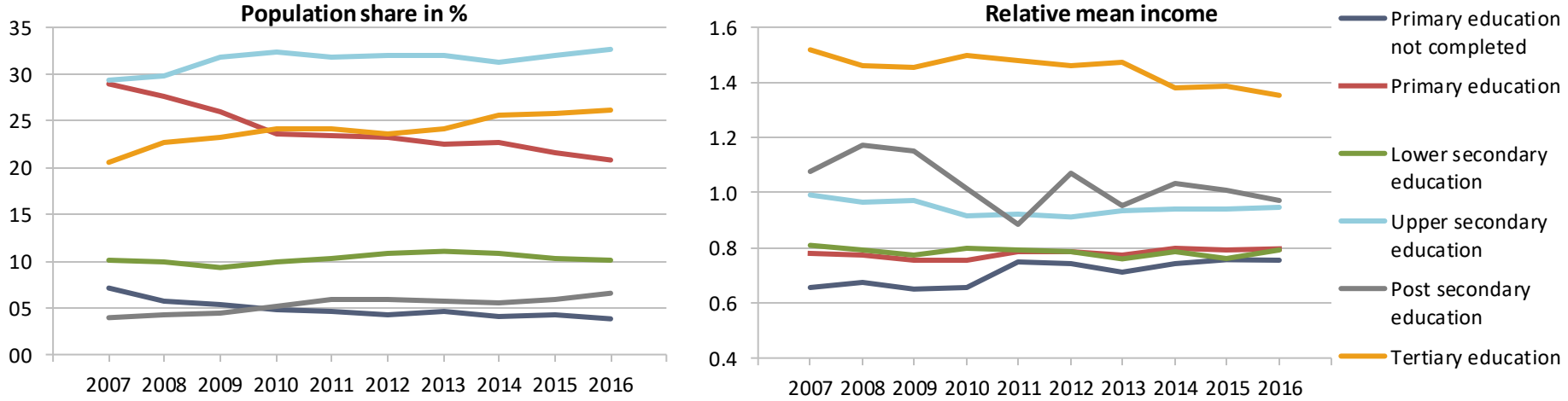
Graph 4iii. Population share and relative mean income according to the age of population member



Graph 4iv. Population share and relative mean income according to different household types



Graph 4v. Population share and relative mean income according to the educational level of household head

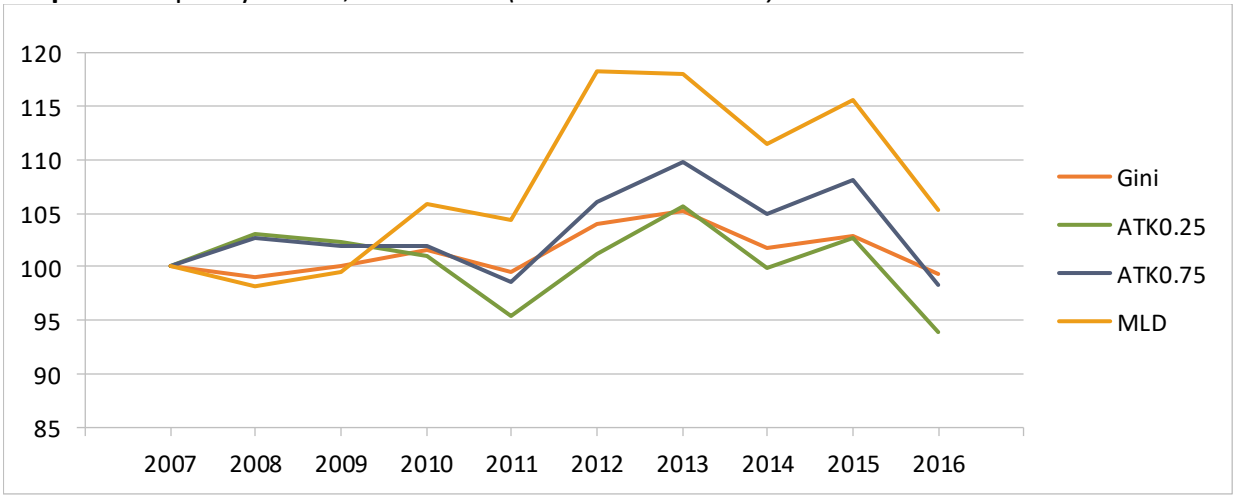


Data source: ELSTAT, SILC 2008-2017 (Incomes 2007-2016).

3.2 Evolution of Inequality trends and structure

In the first part of this section, we discuss the evolution of the four inequality indices used in this study, as mentioned in section 2. The results are illustrated in Graph 5. The four indices are standardized to 100 for the base year (2007) for comparison purposes. During the first years of the examined period (2007-2010), the changes in the indices were relatively small but not uniform. It seems that the implementation of the first fiscal adjustment program in 2010 has resulted a decline in all indices, with ATK0.25 performing the biggest change. Since this index is sensitive to changes that happen at the top of the income distribution, the increase in taxation may affected rapidly the top incomes compared to the decline in the incomes of the rest of the population. This picture changed completely in the next year (2012) when all indices indicate a sharp increase in inequality probably because of the sharp increase in unemployment and the lack of an adequate social safety net. The following year, all indices continue displaying an increasing trend apart from MLD that registered a very marginal decline. Between 2013 and 2014, all indices declined probably as a result of a slight reduction in unemployment in 2014 along with well-targeted policies towards the low-income families (a lump sum one-off "social dividend" to the poorest segment of the population, means-tested child benefits). Another jump in all indices occurred between 2014-2015, probably related with the unstable financial situation that the country faced once more, when capital controls in payments and income transfers were imposed. However, the year after, all inequality indices recorded a substantial drop up to 10 percentage points – except the Gini coefficient, for which the decline was modest. Concluding, looking at the whole period of examination (2007-2016), almost all examined inequality indices have returned to their pre-crisis level, while ATK0.25 is even lower than its pre-crisis value. Only MLD remains high but it has been reduced to its 2010's level.

Graph 5. Inequality trends, 2007-2016 *(normalized to 2007)*

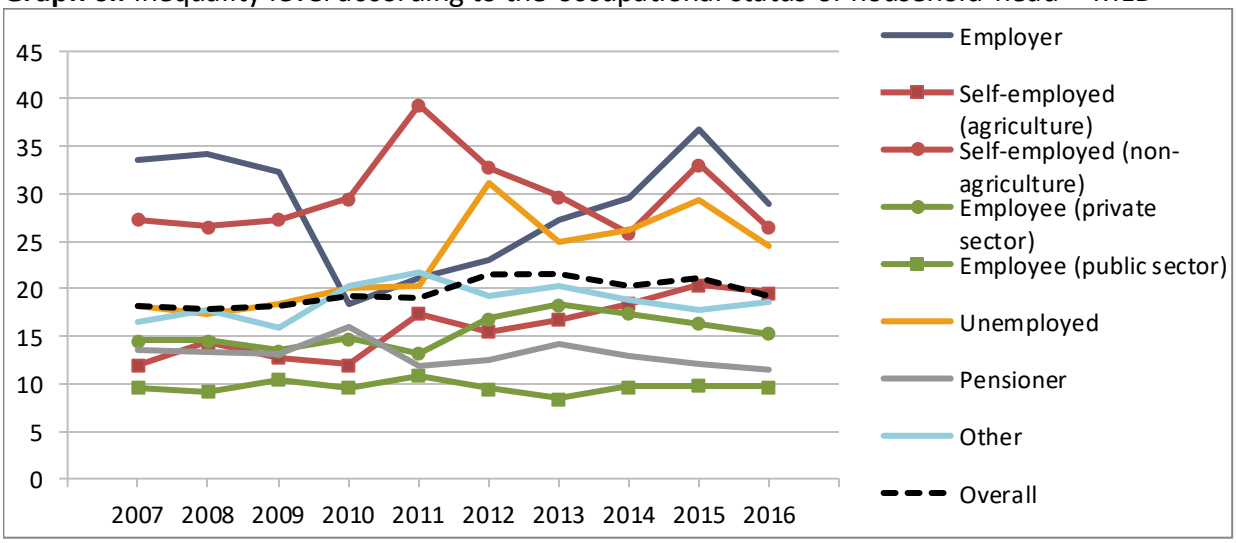


Data source: ELSTAT, SILC 2008-2017 (Incomes 2007-2016).

3.2.1 Inequality evolution by population groups

The evolution of MLD for each one of the categories that population has been partitioned is presented in the set of Graphs 6i-6v. In other words, these trend lines represent the level of inequality existing within each category compared also to the evolution of the aggregate level (black-dash line). In Graph 6i, the evolution among households with different occupational status of head is displayed. The inequality among employers seems to decline considerably in the first years of the crisis, especially between 2009-2010, when its trend started being again positive. The very low coverage rate of unemployed benefits is probably the reason why the inequality among households with unemployed head increased significantly between 2011-2012, when the expansion of the long-term unemployment benefit was introduced[110]. The already high inequality level among self-employed in agricultural sector increased even more the first years of the crisis, before returning almost to the pre-crisis level in 2016. Between 2007-2011, inequality among workers, irrespective of their employment sector (private vs. public), was relatively low and stable. However, after 2011, inequality among private sector employees increased marginally, while among public sector employees decreased. On the one hand, the increase in unemployment has affected mainly the private sector employees while, on the other hand, the cuts in public spending implemented under the fiscal consolidation programme have worked probably as equalizer in the wage distribution of public sector employees.

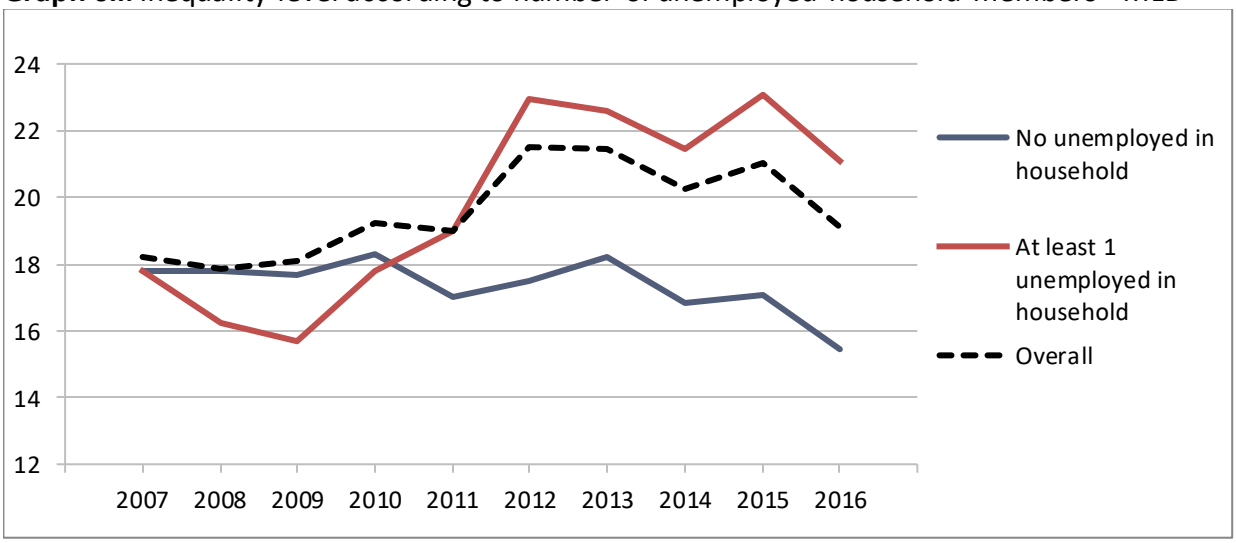
Graph 6i. Inequality level according to the occupational status of household head – MLD



[110] This is the unemployment assistance for older workers, which is paid to long-term unemployed aged 45-65, as eligibility for contributory unemployment insurance expires after 12 months. There is no general unemployment assistance scheme. The annual income threshold in 2009-11 was €5,000 plus €587 for every child. Since 2012, the threshold is €12,000 plus €587 for every child.

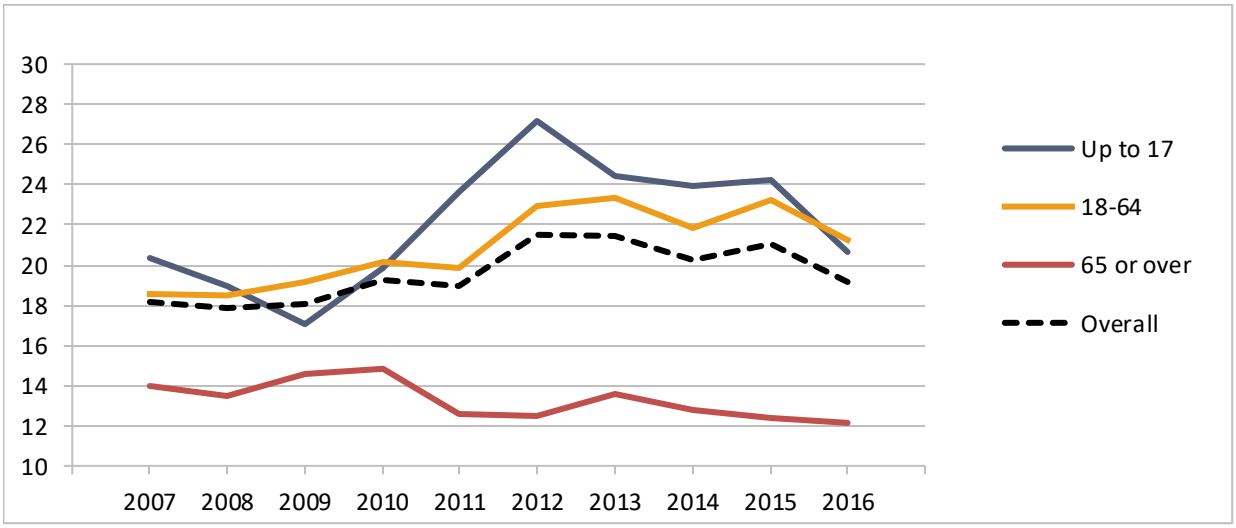
Focusing on the number of unemployed members in households as shown in Graph 6ii, the sharp increase in unemployment clearly determined the positive trend of overall inequality. As discussed earlier, the inequality among households with unemployed members increased about 7%, between 2009-2012 indicating the lack of an effective safety net for the unemployed based either on social insurance or assistance.

Graph 6ii. Inequality level according to number of unemployed household members - MLD



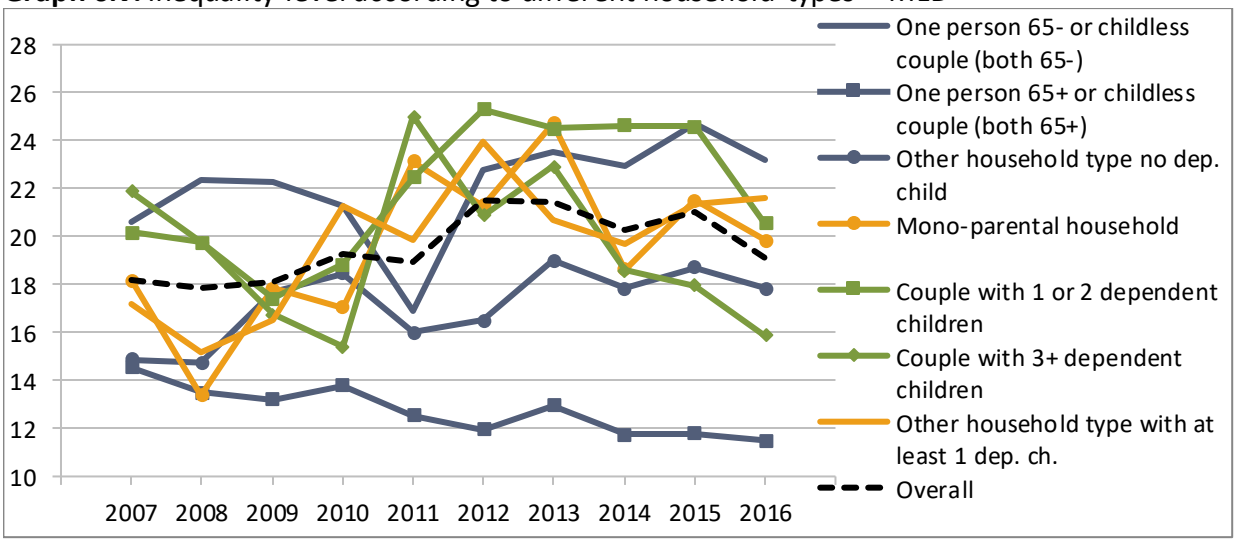
When the population is grouped based on their years of age (Graph 6iii), it is apparent that inequality in minor children increased sharply by 10% within the first three years of the crisis (2009-2012). Further analysis shows that this is due to the job losses of one or both income earners of a large share of households with children. Due to pension cuts implemented in 2010, the inequality among elderly declined by more than 2% between 2010-2011, then it was stabilized between 2011-2012 remaining at this low value since then, with the exception of 2012-2014 when it increased slightly.

Graph 6iii. Inequality level according to the age of population member – MLD



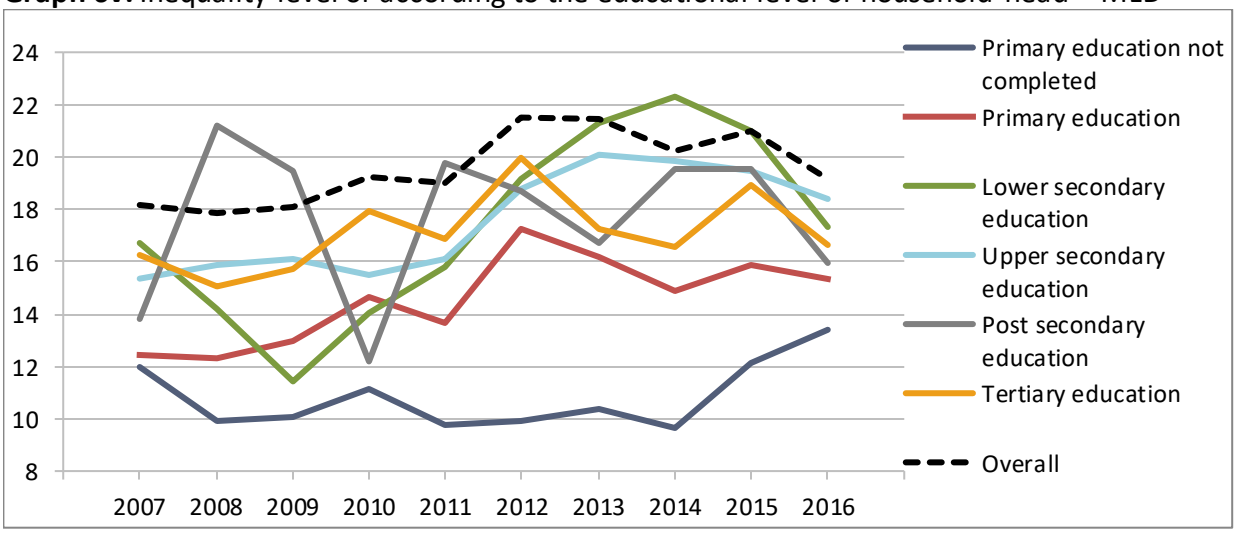
The picture is not so straightforward when the different household composition is being analyzing in Graph 6iv. Despite the various fluctuations in inequality within almost all different household types throughout the decade, the main points of interests are focused on families with or without children, especially between 2010-2013. The introduction of means-tested family benefits in 2013, replacing the previous non-means tested scheme contributed to the reversal of the increasing inequality trends among households with children in the previous period. Relatively younger single-member households or couples without children experienced also quite high levels of inequality during the examined period with an exception of inequality reduction between 2010-2011.

Graph 6iv. Inequality level according to different household types – MLD



Looking at the inequality when the population is split according to the educational level of household head (Graph 6v), our results confirm what the recent literature also finds; the most affected educational group is the secondary level graduates (Filinis et al. 2018). Households whose head has completed any secondary educational lever, either lower-, upper or even post-secondary level, faced the highest increase in inequality since the onset of the crisis up to 2015. Between 2015-2016, inequality within all groups declined with the exception of those households whose head has either primary education completed or not completed at all.

Graph 6v. Inequality level of according to the educational level of household head – MLD

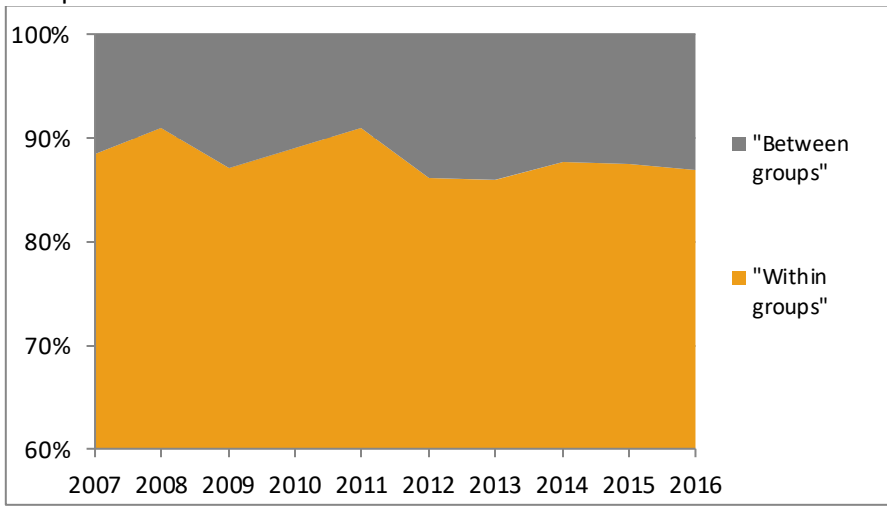


Data source: ELSTAT, SILC 2008-2017 (Incomes 2007-2016).

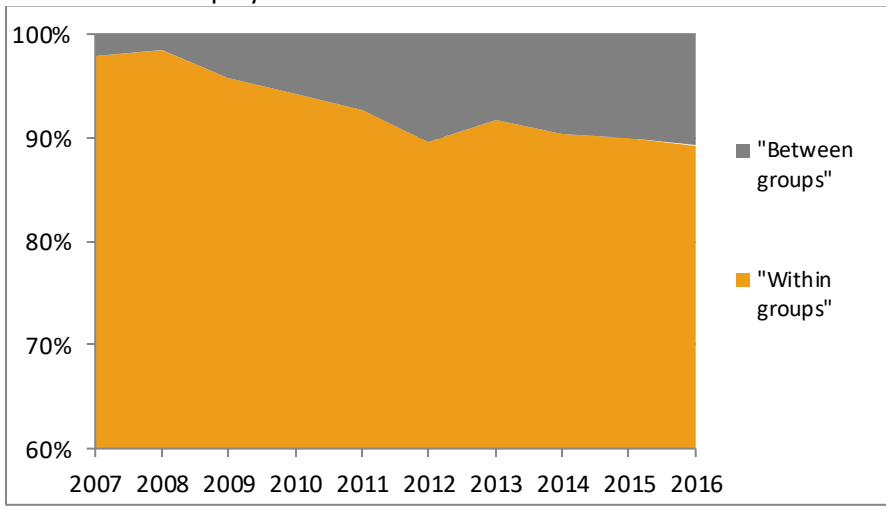
3.2.2. Inequality "between" and "within" groups

After decomposing aggregate inequality into inequality of each group over time, in this section we present the evolution of the "between" and "within" groups components of aggregate inequality (MLD). The "within" groups inequality is equal to the sum of group inequality estimates multiplied by the population share of the corresponding group, while the "between" groups inequality is the value of the inequality index if every population member has income equal to his/her group mean income. As the set of Graphs 7i-7iv indicates, regardless of the population group examined, the "within" groups inequality contributes the most in shaping the aggregate level, with some cases exceeding 90% of the overall level. Only when the applied partitioned criterion is the educational level of household head, the "within" groups inequality has a relatively less contribution to the aggregate level; however, it still contributes more than the "between" groups component.

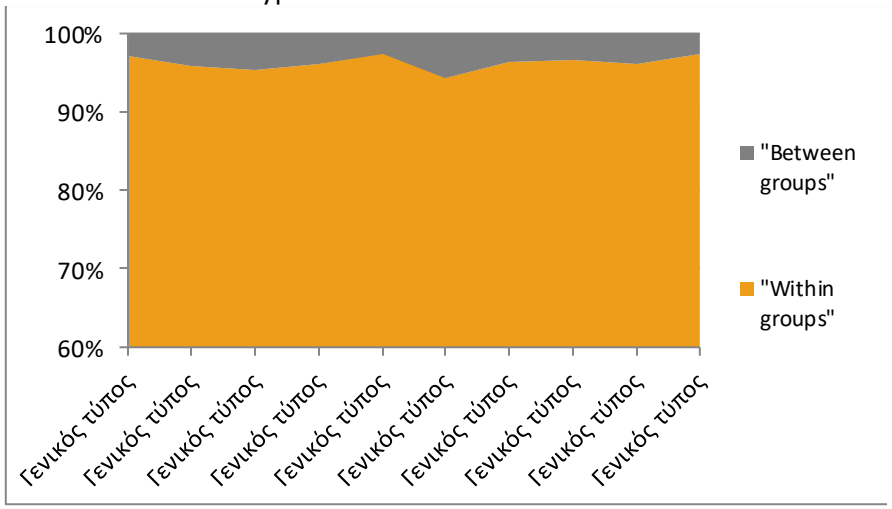
Graph 7i. "Within" and "between" groups inequality according to the occupational status of household head



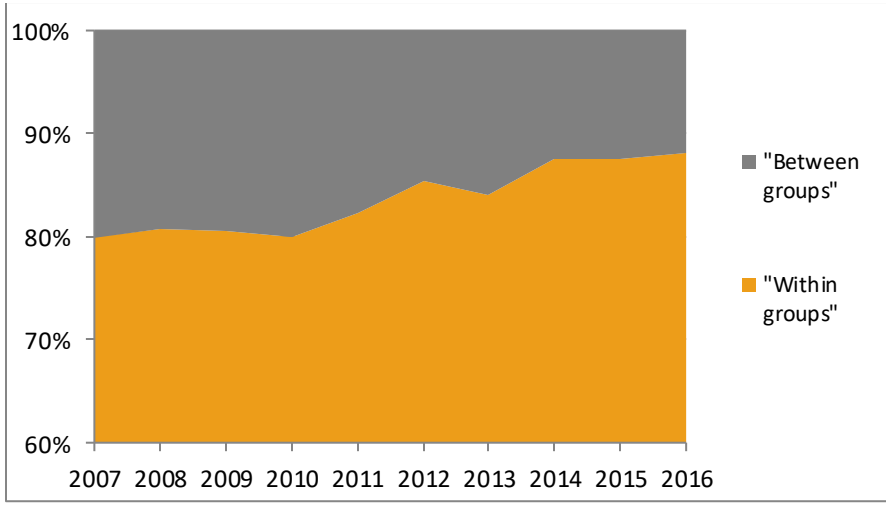
Graph 7ii. "Within" and "Between" groups inequality according to the number of unemployed household members



Graph 7iii. "Within" and between" groups inequality according to different household types



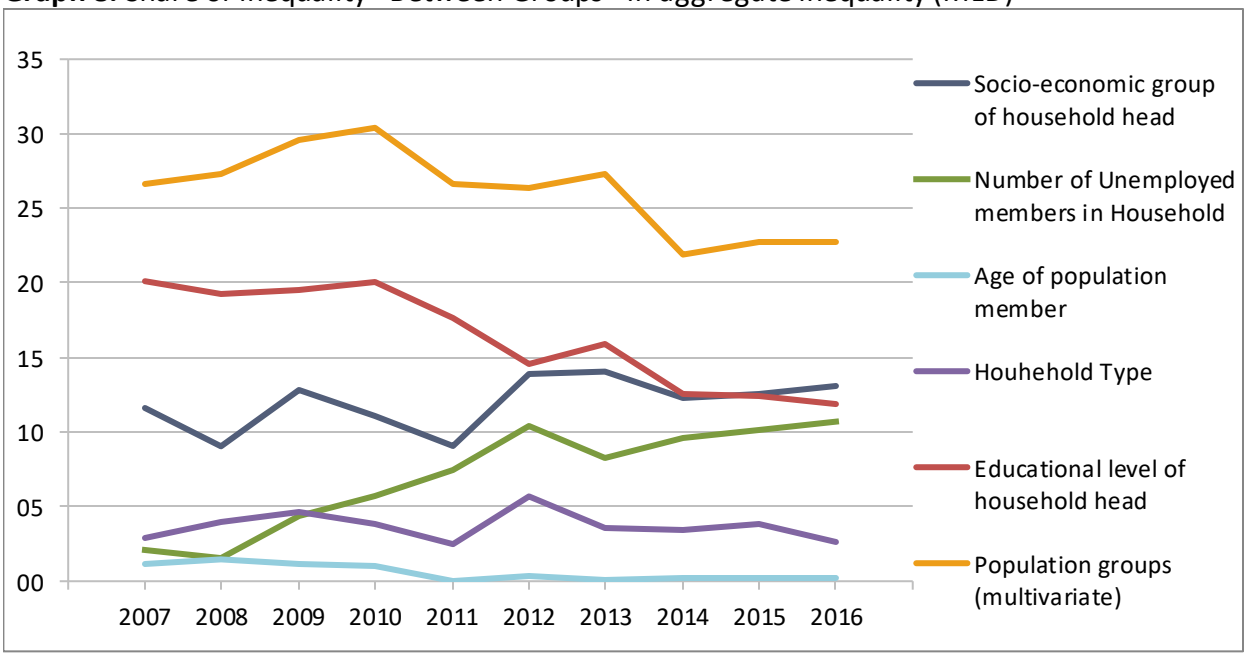
Graph 7iv. "Within" and "between" groups inequality according to the educational level of household head



Data source: ELSTAT, SILC 2008-2017 (Incomes 2007-2016).
Note: The Inequality according to the Age of population members is almost totally attributed to "within" groups for all the examination period.

Despite the fact that aggregate inequality emanates primarily from differences "within groups", it is interesting to elaborate further the evolution of the "between" groups when also the population is grouped into smaller very homogenous groups[111]. In other words, we compute the percentage contribution of the "between" groups inequality to the aggregate inequality change, as it is shown in Graph 8. Even when the population is further grouped into 60 categories, the main result still holds; i.e., the contribution of the "between" groups inequality declines in time especially after the starting of the crisis. This is mainly resulted because one of the groups that consist the multivariate analysis is the educational level of household head that has shown the most remarkable change.

Graph 8. Share of inequality "Between Groups" in aggregate inequality (MLD)



Data source: ELSTAT, SILC 2008-2017 (Incomes 2007-2016).

Note: The "Populations groups" corresponds to a variable that consists of the three more affected partitioned population groups being according to the occupational status and the educational level of household head as well as the different household types.

[111] This type of decomposition is known as "multivariate decomposition" when the categories of two or more groups are combined in order to provide a more detailed analysis. In our case, the multivariate decomposition takes into account the different occupational status and educational level of household head as well as the different household type. Assuming that the educational level of household head consists of three categories (primary, secondary and tertiary), the occupational status of household head of five categories (self-employed, private sector employees, public sector employees, pensioner and other) and the household type of four categories (single adult <65 or couple <65 years of age and childless, single adult >65 or couple >65 years of age and childless, other household type with no children and household with at least 1 child), we compute the "within" and "between" groups inequality among the 60 different combinations that are resulted.

The “between” groups inequality for the different educational level of household head has been reducing in importance since 2010. This means that the high unemployment rate occurred during the crisis, regardless the educational level attained, may have worked as equalizer among the different categories of educational status that household head has attained. This is in accordance with other studies focusing on unemployment during the Greek crisis, which identify that while highly educated individuals experienced substantially lower unemployment rates than the other groups, their contribution to unemployment in 2016 was roughly on par with those with low educational credentials, while the group mostly hit by unemployment was that of middle educational attainment (Filinis et al. 2018). Due to the structure of the Greek economy, it seems that low skilled jobs located primarily to low–added value sectors of the economy were not that severely hit from the crisis, while the demand for middle and high-skilled individuals decreased because of the disinvestment in the economy.

On the other hand, when the number of unemployed members in household is considered, the importance of the “between” groups inequality is constantly increasing throughout the examination period. The same trend is also followed by the contribution of the “between” groups inequality when the partitioned criterion is the different occupational status of household head, which is highly affected by the evolution of the “unemployed” category, which shares increased significantly.

3.2.3 Trend decomposition analysis

In this section, we present a decomposition of the trend in aggregate inequality. Applying a “shift share” analysis of inequality (Tsakloglou, 1993), we examine to what extent the overall changes in aggregate inequality can be attributed (i) to changes in the values of inequality within population groups, (ii) to changes in the population shares of the corresponding groups and (iii) to changes in the relative mean incomes of those various groups. The results are reported in Table 1 analyzing the changes of the MLD between 2007-2013, 2013-2016 and then the whole examination period, 2007-2016.

Table 1. Inequality trend decomposition – MLD (2007-2016)

Characteristic of HH head or HH member	Period	Overall percentage change	Contribution (%) to changes in inequality due to changes in…		
			inequality within group	*population shares*	*relative mean income*
Occupational status of household head	2007-2013	17.9	11.2	28.7	-22.0
	2013-2016	-10.8	-7.4	-3.6	0.2
	2007-2016	**5.1**	2.6	24.9	-22.4
Number of unemployed household members	2007-2013	17.9	7.5	43.8	-33.4
	2013-2016	-10.8	-11.0	-9.7	9.9
	2007-2016	**5.1**	-6.7	38.0	-26.2
Age of population members	2007-2013	17.9	19.9	0.3	-2.3
	2013-2016	-10.8	-10.4	-0.4	0.0
	2007-2016	**5.1**	7.3	0.3	-2.5
Household Type	2007-2013	17.9	16.9	5.9	-4.9
	2013-2016	-10.8	-9.0	1.6	-3.5
	2007-2016	**5.1**	6.3	6.2	-7.3
Educational level of household head	2007-2013	17.9	17.5	-18.6	19.1
	2013-2016	-10.8	-5.6	-6.9	1.8
	2007-2016	**5.1**	11.2	-26.3	20.3

Data source: ELSTAT, SILC 2008-2017 (Incomes 2007-2016).

Regardless of the partitioning criterion used to determine the various population groups, as already discussed, the highest increase in aggregate inequality was reported between 2007 and 2013 (17.9%), when also both the unemployment rate increased sharply and the GDP per capita reduced considerably. On the opposite side, the aggregate inequality reduced by 10.9% during the period of 2013-2016, when the household disposable income started to increase. Finally, the aggregate inequality in 2016 was 5.1% higher than it was before the onset of the crisis in 2007.

Now, when the population is partitioned according to the occupational status of household head, in the first sub-period, the increased inequality level can be mainly attributed to changes in population shares; albeit the increase of the "within" groups inequality contributed positively to

the aggregate level too. However, it is worthy to point out that the negative contribution of the reduction in relative mean incomes for this group is not less important for this period being a bit more than 20%. On the other hand, in the second sub-period, the decline in overall inequality was almost entirely resulted by the decrease in "within" groups inequality. Changes in population shares were strongly inequality-enhancing in the overall period under examination, whereas changes in relative mean incomes of groups played a strong negative role, resulting the modest increase in aggregate inequality reported of around 5%.

When we focus on the number of unemployed members in household, the aforementioned results are even more pronounced. In the first sub-period, the share of households with unemployed members increased dramatically causing further increase in overall inequality. At the same time, the high share of job losses that resulted significant reduction in relative mean incomes contributed negatively in the overall percentage change of inequality. Reversely, the decline in aggregate inequality observed in the second sub-period is mainly attributed to the reduction in the "within" groups inequality together with the negative contribution from changes in population shares. The decline in the relative mean incomes and in the "within" groups inequality that happened in the period 2007-2016 was not large enough to cancel out the great increase in the overall inequality that occurred due to the positive change in population shares of these groups concluding to the final increase in overall inequality.

Looking at the different age groups, we observe that regardless of the examining period, the change, being either positive or negative, is almost entirely attributed to changes in the "within" groups inequality. The picture is similar when the partitioned criterion applied is based on the different household types. The "within" groups inequality appears to be the main contributor to the change of the aggregate inequality level.

Last but not least, when the population is grouped according to the educational level of household head, in the first years of examination, the whole positive change of inequality is attributed to the increase in the "within" groups inequality; however, not because the other two possible factors play a less important role but because their changes are almost equal but at the same time with opposite directions. In the second sub-period though, the negative change in aggregate inequality is resulted by the negative change in both "within" groups inequality and in population shares. On the other hand, despite the significant negative contribution of changes in population shares observed in the entire examination period by 26%, the positive percentage contribution of the changes in "within" groups inequality and in relative mean incomes concluding to the overall positive percentage change of 5%.

4. Conclusions and Policy Implications

In the period under examination, inequality did not follow a uniform pattern, as depicted by all indices employed in our analysis. The implementation of the first fiscal adjustment program resulted in a decline in inequality in 2010. Yet, in the next two years and before the start of the second adjustment programme in 2012, a sharp increase in inequality took place probably because of the sharp increase in unemployment and the lack of an adequate social safety net. The following year, the increasing trend persisted, but inequality declined in 2014 due to the improvement in macroeconomic conditions and the disbursement of the "social dividend". The declining path was reversed in 2015 as a result of the unstable financial situation of the economy. Yet, in the next year, inequality recorded a substantial drop and started a declining path. In total, according to MLD index of inequality, inequality rose by almost 17.9% in the period 2007-2013 and dropped 10.8% between 2013-2018, resulted in a total increase of 5.1% between 2007-2016.

When partitioning the population according to the occupational status of the household head, the groups that faced the highest increases in inequality were the unemployed and self-employed (non-agriculture). As far as the age groups are concerned, the children were more severely hit followed by adults less than 65 years old, while those over 65 improved their relative position and presented a decreasing inequality trend. Inequality clearly increased much more for all types of families with children as compared to other household types.

In total, inequality "within population groups" was far more important in shaping aggregate inequality than inequality "between population groups". The contribution of disparities between educational groups to aggregate inequality declined while that of disparities between occupational groups rose. The multivariate analysis of "between groups" inequality verifies this remarkable change related to the educational groups. The finding could probably be explained by the fact that low skilled jobs located primarily to low–added value sectors of the economy were not severely hit by the crisis, while the demand for middle and high-skilled individuals decreased because of the disinvestment in the economy. This resulted in a diminishing protection offered by education with regards to unemployment and poverty and worked in inequality terms as an equivalizing effect. Finally, the trend decomposition analysis reveals that in some cases the effects of the changes in population shares and relative mean incomes, operated in opposite directions and were larger than the effects due to changes of inequality within groups.

In terms of policy implications, the analysis in this chapter reveals that unemployment was the underlying factor of the increase in inequality during the first period of the crisis, in combination with the absence of a proper social safety net. As Keeley (2015) highlights work is key to reducing inequality and to ensuring that families do not get trapped in poverty, a serious concern in many OECD countries since the start of the financial crisis. To this end, it is important for governments to build the economic conditions for jobs creation, aiming to increasing participation rates, especially for women and the youth in periods of recovery and to prevent job losses and long-

term unemployment by relinking individuals back to the labour market through reskilling, upskilling, profiling and matching programmes.

The current analysis cannot disentangle the policy effect of reforms in each year from the general growth effect. In order to make clear conclusions on which reforms were regressive or progressive, microsimulation techniques should be employed. Nevertheless, given the general macroeconomic environment of the period under examination, some general conclusions can be drawn as far as the role of taxes and social transfers is concerned. Since 2013, when the system of benefits became more targeted, limiting allowances that disproportionately benefit high earners, we observe a gradual decrease in inequality. In particular, the restructuring of family benefits in 2013 and the means-tested social dividends, helped towards this direction. However, the introduction of a guaranteed minimum income scheme was implemented too late[112], and much after the peak of the crisis.

As Koutsogeorgopoulou et al. (2014) underline, the unemployment insurance benefit coverage remained low during the whole period of the crisis, with less than 50% of short-term unemployed receiving it in 2012, down from 65% in 2010, even as unemployment surged. Moreover, the reduction of the minimum wage in 2012 by 22% along with the introduction of the sub-minimum wage for youth[113] resulted in a corresponding 22% reduction in unemployment insurance benefit. In 2012, the eligibility criteria for the unemployment assistance benefit for the long-term unemployed were expanded and the age coverage increased in 2014. Yet, these policy changes, resulted in a limited improvement, as the coverage remained low compared to the extent of the problem. According to Eurostat, 73.5% of the total unemployed were long-term unemployed in 2014 and the figure has stabilized over 70% since then[114].

Complementary to the benefit system is the effect of taxation on inequality trends. In general, taxation changes during the economic adjustment programs were designed from the perspective of yielding the highest possible fiscal revenue and in very few cases their distributional effect was examined in advance. Yet, this does not mean that progressive reforms did not take place also with regards to taxation. A good example is the 2011 reform of personal income taxation that was designed to have the largest fiscal gains, but at the same time, ceteris paribus, achieved the highest decrease in income inequality. On the contrary, the 2013 reform did not yield the expected fiscal results while at the same time reduced the redistributive strength and the progressivity of the Greek tax system (Leventi and Picos 2019).

It should be also highlighted that in the years of rising inequality, progressive reforms took place, but the overall impact of reforms in combination with the worsening macroeconomic conditions

[112] The national rollout of GMI took place in 2017.

[113] The reduction in minimum wage by 22% in 2012 resulted in applying two minimum wages according to the age of workers. On the one hand, the minimum wage was set at €510.95 for employees aged 25 or below and at €586.08 for employees aged above 25.

[114] See: https://ec.europa.eu/eurostat/databrowser/view/une_ltu_a/default/table?lang=en

- mainly the sharp rise in unemployment - led to the opposite than the intended direction. Further, many of the reforms in the benefit system undertaken in 2013 were progressive. Yet, despite this progressivity, inequality in 2013 rose either due to policies that moved in the opposite direction (e.g., the 2013 Personal Income Tax reform) or due to the general macroeconomic effects.

Another issue to rethink about is the role of pensions in redistribution. It is often mentioned in the public discourse that pensioners were more severely hit during the crisis than the rest of the population, while our results show that pensioners improved their relative position despite the large pension cuts. Given that the calculation of pensions before the crisis was based on many different schemes, there is no clear evidence on the degree of reciprocity versus redistribution before the crisis. Giannitsis and Zografakis (2018) highlight that the growing deficits of the social security system were associated with growing inequalities such as, partial and preferential access to subsidized income, low age-related eligibility requirements, access to pensions with asymmetrically low contributions, and other similar phenomena. Yet, during the crisis the pension cuts took place in a progressive way, in the sense that larger pensions were cut proportionally more than smaller pensions, which improved income distribution within the group of pensioners, as indicated by the decreasing within group inequality for this group in our results.

In total, addressing inequalities in a period of severe fiscal consolidation with fast diminishing incomes for the vast majority of the population does not seem an easy task for a government to perform. The limited fiscal space makes it more important to ensure that public spending delivers maximum benefits not only in terms of pecuniary transfers but also with regards to the provision of public services such as education and health care that are particularly important for improving social conditions for the low-income households.

This chapter offers a detailed analysis of the evolution of the level and structure of inequality in the period of the Greek economic crisis. Yet, further analysis is needed in order to isolate the effect of policy measures from the effect of austerity on the economy and the general macroeconomic conditions. In most of the recent reports of International Organizations on the economic impacts of inequality, the discussion focuses on how to make growth more inclusive. From the Greek crisis, a question emerges on whether it is also possible to make fiscal consolidation periods “inclusive” by distributing fairly the burden sharing across different socioeconomic groups.

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Chapter 10. Wage determination in Greece after the Economic Adjustment Programmes

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Abstract

We examine aspects of flexibility in wage determination in Greece after the major labour market reforms of the first two Economic Adjustment Programmes of 2010-2015. We find no evidence of a wage curve; persistent sectoral wage premia and penalties; and only marginal improvements, towards marketisation, in regard to individual wage premia. Although not constituting a formal test of the impact of the labour market reforms on wage determination in the country, our results suggest that the reforms had limited effect in making wage determination in the labour market more flexible and more efficient from an economic point of view. We conjecture that further policy effort is needed to enhance labour market efficiency (and wage flexibility) in the country, possibly via avenues other than the continuing deregulation of employment relations – as past measures and reforms in this regard seem to have been of limited effect.

Keywords: wage curve; wage premia; Economic Adjustment Programmes; flexibility; Greece

Acknowledgements. We are grateful to conference participants at the 2019 Joint Workshop of the Karamanlis Chair in Hellenic and European Studies (Fletcher School, Tufts University) and the Venizelos Chair in Contemporary Greek Studies (Hellenic Observatory, LSE) for useful comments on an earlier work on which this paper builds. All views expressed in this paper are those of the authors and not of their organisations.

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1. Introduction

The Greek crisis, despite having its origins in fiscal and macroeconomic governance problems in the country (and in the Eurozone), was to a large degree propagated by existing structural problems in the Greek labour market. Indeed, a number of inefficiencies and regulatory problems, e.g. lack of flexibility, have long been highlighted by a variety of international organisations (OECD, 2020). The Economic Adjustment Programmes that began being implemented at the early 2010s tried to partly address those problems, most emphatically with the series of labour market reforms that were introduced in 2012, including a drastic decentralisation of collective bargaining, reduction (and statutorisation) of the National Minimum Wage, promotion of working time flexibility, weakening employment protection laws, deregulation of the occupational licensing system, etc.

There is an emerging consensus in the literature (Kakoulidou *et al.*, 2018; Karakitsios, 2018; Georgiadis *et al.*, 2018 and 2020; Monastiriotis and Martelli, 2020; Gatopoulos *et al.*, 2021) that the reforms facilitated some economic adjustment, albeit perhaps with important social costs and negative consequences on aggregate demand (thus propagating the crisis – Economides *et al.*, 2020). In this chapter we examine the extent to which this presumed increase in labour market flexibility – and rationalisation of the labour market – has actually happened.

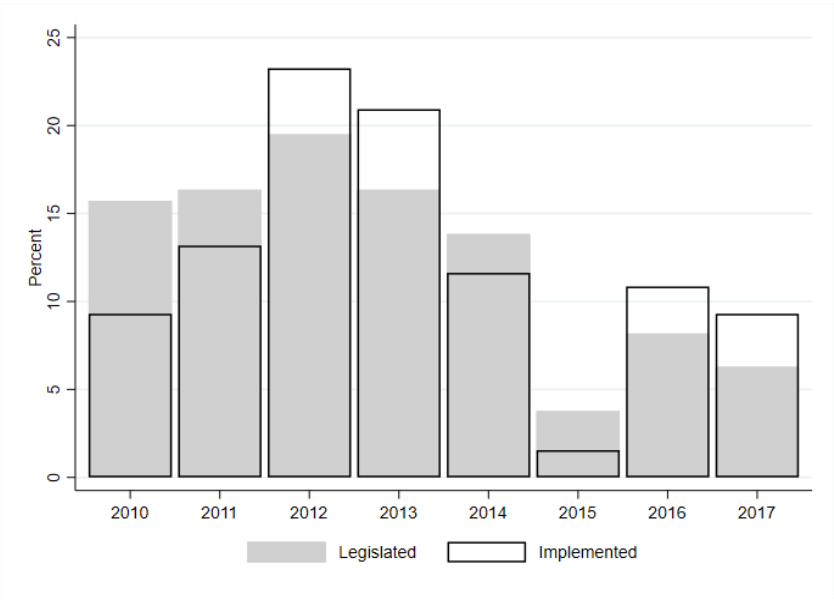
To do so, we examine three aspects of the labour market which are often linked to a well-functioning (efficient and/or flexible) labour market: (a) the so-called wage curve, which depicts the relationship between wages and unemployment; (b) the extend of industry wage premia, which reflect non-equilibrium labour-pricing in the economy (across sectors – often linked to efficiency wages); and (c) the shifts in the returns to education and in various socio-demographic penalties (both showing the extent of sorting/marketisation in the labour market – competitive for education and non-competitive for the socio-demographic variables). We do so for selected years in the period since the start of the country's third Economic Adjustment Programme and until 2019, the year before the eruption of the COVID-19 pandemic – aiming to check if the changes that have occurred with the reforms under the first two Economic Adjustment Programmes produced a demonstrable and lasting effect on the extent of wage flexibility and competitive wage determination in the labour market.

2. Literature on the Greek labour market and a discussion of the 2012/etc reforms

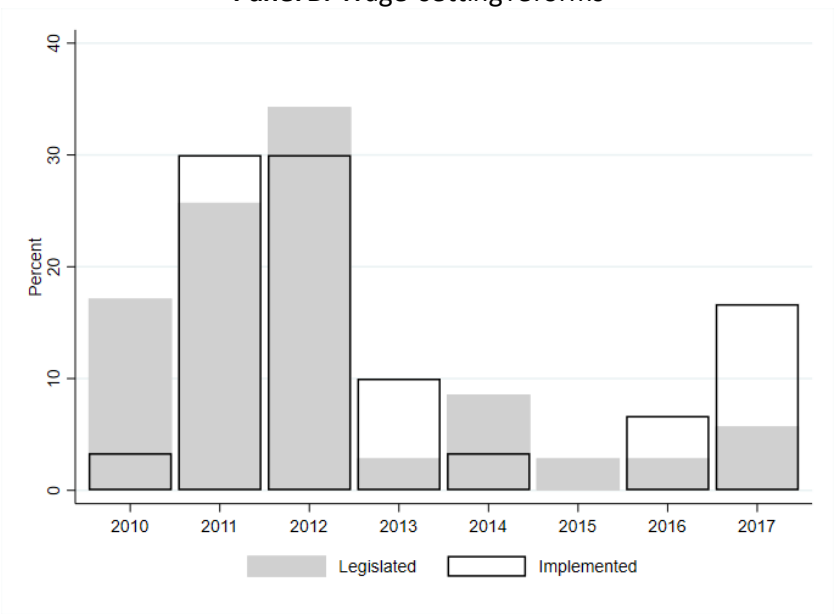
Although 2012 is considered as the year when labour market regulation changed drastically in Greece under the Economic Adjustment Programme(s), it is worth noting that not all labour market reforms were applied at the same time in Greece. LABREF, a database maintained by the Employment Committee of the European Commission, provides information about the timing of those policies. There were 159 labour market-related reforms (Acts) implemented during 2010-2017. Figure 1 (Panel A) shows the legislation and implementation intensity by year. Nearly 67% and 80% of them had been applied by the end 2013 and 2015, respectively.

Figure 1. Legislated and implemented labour market reforms in Greece, 2010-2017.

Panel A: All labour market reforms



Panel B: Wage-setting reforms



Source: LABREF (European Commission).
Notes: Authors' calculations.

Moreover, reforms in LABREF are classified into eight domains: (i) Active Labour Market Policies, (ii) Immigration/Mobility, (iii) Job Protection, (iv) Labour Taxation, (v) Welfare Benefits, (vi) Unemployment Benefits, (vii) Wage Setting, and (viii) Working Time. When the sample of reforms is restricted to the Wage Setting domain alone, the results are even more pronounced (Figure 1; Panel B). By the end of 2013, 80% of wage setting reforms had been legislated, and by the end of 2014, 77% of them had been implemented. For each one of those domains, Table 1 shows the legislation process by year. Overall, 86% of the reforms were legislated by 2015. Especially for the Wage Setting and Working Time domains, 89% and 92%, respectively, of the reforms were already legislated by 2014. At the same time, unemployment was adding up around 5 percentage points each year, exploding from 12% in 2010 to 28% in 2013 (second quarters).

Table 1. Cumulative share of legislated labour market reforms in Greece, 2010-2017.

Policy Domain	2010	2011	2012	2013	2014	2015	2016	2017
Active Labour Market	8.1	10.8	27.0	56.8	78.4	89.2	94.6	100.0
Immigration/Mobility	0.00	0.0	80.0	100.0	100.0	100.0	100.0	100.0
Job Protection	37.5	45.8	62.5	66.7	83.3	83.3	87.5	100.0
Labour Taxation	3.1	31.3	34.4	62.5	71.9	71.9	96.9	100.0
Welfare Benefits	14.3	42.9	42.9	42.9	57.2	71.4	85.7	100.0
Unemployment Benefits	0.0	28.6	57.1	85.7	100.0	100.0	100.0	100.0
Wage Setting	17.1	42.9	77.1	80.0	88.6	91.4	94.3	100.0
Working Time	41.7	50.0	66.7	75.0	91.7	91.7	91.7	100.0
Total	15.7	32.1	51.6	67.9	81.7	85.5	93.7	100.0

Source: LABREF (European Commission).
Notes: Authors' calculations. The total number of reforms in all domains is 159.

Given all this policy activism over a prolonged period of economic and political turbulence, it is of course difficult to determine empirically whether wage responses to local labour market conditions, and labour market adjustment/flexibility more generally, may have shifted due to particular policies that aimed at enhancing wage flexibility. This difficulty is also reflected in the existing empirical literature on the topic, which provides rather indirect – and largely inconclusive – evidence on this. Two studies have attempted to test the effectiveness of the implemented reforms in terms of delivering local wage flexibility, in the wage-curve tradition, providing evidence of a short-lived wage curve *circa* 2011 (Daouli *et al.*, 2014; Cholezas and Kanellopoulos, 2015). Both studies attributed their findings to the wage setting reforms that took place during 2011-2012, i.e. the restructuring of the collective bargaining framework and

the 2012 NMW cut. However, the strong recessionary trends of that period, the numerous reforms being concurrently implemented, and the time required for those reforms to bite did not allow for a clear answer to whether (a) those empirical observations were solely due to the promotion of a reform agenda, and (b) whether restructuring institutions did foster wage flexibility in subsequent periods. In Italy, for example, a wage curve re-emerged after implementing a policy that promoted flexible pay (Devicienti *et al.*, 2008).

In a separate line of research, Christopoulou and Monastiriotis (2018; 2019) have also documented evidence showing limited – if any – rationalisation (reduction of rigidities and inefficiencies) in the labour market: examining the size and sources of sectoral wage premia, they showed that such wage premia – typically associated with the presence of monopolistic rents either in the product market (monopolistic firms) or in the labour market (trade unions) – have not declined on the whole in the four years since the 2012 reforms and, if anything, they "appear to have increased in the least competitive sectors" (Christopoulou and Monastiriotis, 2018, p.1). On the other hand, Cholezas *et al.* (2013) and Christopoulou and Monastiriotis (2014 and 2016) have provided evidence showing that wage-setting in Greece became somewhat more competitive at the individual level in the period after the outbreak of the crisis and the 2012 reforms – with returns to education (the so-called 'college premium') rising and wage penalties associated to (quasi-)fixed socio-demographic characteristics (female, foreign-born, etc) declining – thus pointing to some evidence of rationalisation (reduced inefficiencies and thus higher flexibility) in the labour market.

Building on this literature, in this chapter we aim to provide a more up-to-date assessment of the degree to which changes can be observed in the Greek labour market, towards increased rationalisation and flexibility, that could be associated to reforms implemented over the period of the Economic Adjustment Programmes. In doing this, our purpose is to provide a first assessment of whether the massive restructuring of the institutional framework during the early crisis years (2010-2014) delivered local wage flexibility – and to what extent – in the subsequent period (2015-2019), as well as how other aspects of wage determination (e.g., sectoral and educational premia) changed. We examine these issues sequentially in what follows.

3. Data and methods

Our data source is the Greek quarterly Labour Force Survey, which is the main data source used in the relevant literature. We use the quarterly data series covering 17 consecutive quarters from 2015Q1 to 2019Q1. The LFS contains a wealth of information, at the individual

level, concerning the labour market status of individuals (including unemployment) as well as their wages (for those in salaried employment) and a range of individual (age, gender, place of birth, education, etc), job-related (e.g., firm-size, sector, occupation, etc) and area characteristics (e.g., region of residence). For our wage curve analysis, we use this data to also derive a measure of regional unemployment (consistent with the ILO definition used by the Hellenic Statistical Authority). For this analysis we make use of the longitudinal version of the LFS, which allows to (a) use a continuous wage measure, and (b) control effectively for composition bias and time-invariant unobserved heterogeneity. The basic working sample consists of non-agricultural, private sector salaried workers, aged 15-64 years old and not currently enrolled in any educational programme. Estimated models are variants of the following specification:

$$\log w_{irt} = \alpha_i + \beta \log U_{rt} + X_{irt} + \lambda_r + \lambda_t + u_{irt} \quad (1)$$

where w_{irt} is a continuous measure of the net real hourly pay from main job of individual *i* observed in region *r* at period *t*.[115] Regional unemployment rate is measured by U_{rt}. The X_{irt} vector contains individual determinants of pay, i.e. gender, a second order polynomial in age, nationality, marital status, education, urban status, and work-related characteristics, i.e. industry, occupation, part-time, temporary job and workplace size indicators. Terms α_i, λ_r and λ_t capture individual, region and time fixed effects, respectively. Finally, u_{irt} is a disturbance term.

For our analysis of wage premia and penalties, we use a more parsimonious version of Equation (1), where we set β=0 and estimate the model for specific periods without the inclusion of individual or region/time fixed effects. The full model is instead used for our wage curve analysis, where the focus is on deriving time-sensitive estimates regarding the magnitude of the wage curve, i.e. an indication of how individual wages responded differently over time to the prevailing local labour market conditions. In this case, the parameter of interest is β, which is also referred to as *"the wage curve"*. The existence of the wage curve has been one of the strongest empirical regularities in the international literature, depicting an inverse relationship between levels of individual pay and prevailing local unemployment rates (Blanchflower and Oswald, 1994). According to it, wages will fall by 1% if the unemployment rate rises by 10%, *ceteris paribus*. Efficiency wages, bargaining, and efficient-contract models have been used to explain this link. However, the degree of wage responsiveness also depends on labour market institutions (Freeman and Nickell, 1988).

[115] The national CPI series (2015=100) has been used to deflate net hourly wages. Ideally, regional prices should be used but such data are not available. In their study for Britain, Blanchflower and Oswald (1994) used regional prices but this left their wage curve estimates unchanged.

Hence, the extent to which an institutional restructuring promotes wage flexibility remains an issue to be empirically tested. Given that the period after 2010 has been a reform-intense one for the Greek economy, Greece is a notable to case to examine whether those reforms resulted in increasing wage responsiveness to regional unemployment in a labour market that has been traditionally known to be a heavily regulated one.

Apart from individual characteristics and fixed effects, Equation (1) is augmented with regional linear time trends in order to adequately control for regional wage pressure factors (migration, unobserved labour quality, amenities etc.). Alternatively, a two-step analysis can be used (Bell *et al.*, 2002; Solon *et al.*, 1994). In the first step, a valid wage measure that has been adjusted for individual composition effects is constructed. This is done by estimating a first-stage panel model for each region:

$$\log w_{irt} = \alpha_i + X_{irt} + \lambda_{rt} + v_{irt} \tag{2}$$

where α_i is the individual fixed-effect. In this case parameters are constant over time but vary with region.[116] After estimating Equation (2), $\hat{\lambda}_{rt}$ are used as dependent variables, i.e. the composition corrected regional wages, in the second stage:

$$\hat{\lambda}_{rt} = \gamma \log U_{rt} + \varphi_t + \varphi_r + t\varphi_r + \eta_{rt} \tag{3}$$

In this case region-time cells become the units of analysis. Apart from the regional unemployment rate, models control for time and region fixed effects, regional population and regional linear time trends to capture unobserved time-varying heterogeneity. In Equations (1) and (3) regional unemployment can be considered as strictly exogenous or it can be instrumented using its own past realisations, i.e. one- and two-year lagged values. Instrumental variable techniques are also used in standard wage regressions implemented for the analysis of education premia ('returns to education') as well as other premia and penalties. However, instrumenting for key individual-level variables, such as education or sector of work, and especially doing so in a consistent way across years in repeated cross-sections, is particularly challenging and can introduce a number of unintended biases (Ichino *et al.*, 1999). In our analysis we derive estimates of individual and sectoral wage premia/penalties using Ordinary Least Squares (OLS). As is now established in the literature (Card, 2001; Sajons, 2020), OLS estimates of wage premia can typically be interpreted as

[116] An alternative would be to estimate a cross-sectional model for each time period in the first step, pooling together individuals across regions and controlling for regional fixed effects. In this case, however, the estimated parameters could carry some bias due to likely correlation between individual characteristics and unobserved individual-level heterogeneity.

lower-bound estimates of the true returns and, as long as the bias introduced by unobserved confounding factors does not change significantly over time, they provide an accurate picture of change in temporal comparisons like the ones attempted here.

4. Results

a. Wage curve

We first present results regarding the implications of regional unemployment on how individual wages are determined. Therefore, our results are based on Equation (1). It should be noticed that region refers to the 13 administrative regions identified under the NUTS-2 classification. These results are presented in panel A of Table 2. However, for robustness we use finer breakdowns by splitting two major conurbations in Attica and Northern Greece (15 regions), and by distinguishing between urban and rural areas within each geographical entity (28 regions). These results are shown in panels B and C of Table 2, respectively. It should also be noted that in every case, regional unemployment has been calculated under the respective regional classification. Moreover, regional fixed effects, regional time trends, and clustered standard errors at the regional level also follow the adopted definition of region, i.e. 13, 15 or 28 regions. Also, it should be noticed that all models control for a variety of individual characteristics, i.e. a second order polynomial in age, and controls for gender, marital status, nationality, education, part-time job, whether an individual works in small firm (less than 10 employees), urban status, as well as for industry and occupation indicators.

In general, the results do not favour the existence of a wage curve relationship in Greece after 2015. Consistent with previous studies, individual wages do not seem to respond to changes in regional unemployment. The estimated coefficients of the logged regional unemployment rate are very close to zero and statistically not significant, e.g. in column 3 where we report results according to our richest model specification, or in column 4 where current regional unemployment is treated as endogenous and it is instrumented using its own 1- and 2-year lags. Wherever this is the case, the reported first-stage F-statistics (column 4) are particularly strong, reassuring that the obtained wage curve parameters are not biased due to weak instruments. Moreover, a wage curve relationship is not established under any definition of regions (panels A, B and C).

Table 2. The Greek wage curve: individual-level estimates.

	OLS [1]	OLS [2]	OLS-FE [3]	2SLS-FE [4]
		Panel A: 13 regions		
(Log) regional unemployment	.013 (.018)	.003 (.014)	-.004 (.005)	-.010 (.009)
First-stage F-statistic	-	-	-	132.06
		Panel B: 15 regions		
(Log) regional unemployment	.016 (.020)	-.004 (.016)	-.005 (.007)	-.011 (.008)
First-stage F-statistic	-	-	-	149.76
		Panel C: 28 regions		
(Log) regional unemployment	.012 (.014)	.003 (.012)	-.007 (.006)	-.005 (.012)
First-stage F-statistic	-	-	-	17.22
Individual characteristics	Yes	Yes	Yes	Yes
Individual fixed effects	No	No	Yes	Yes
Time fixed effects	Yes	Yes	Yes	Yes
Region fixed effects	Yes	Yes	Yes	Yes
Regional time trends	No	Yes	Yes	Yes
Observations	99,103	99,103	99,103	83,340

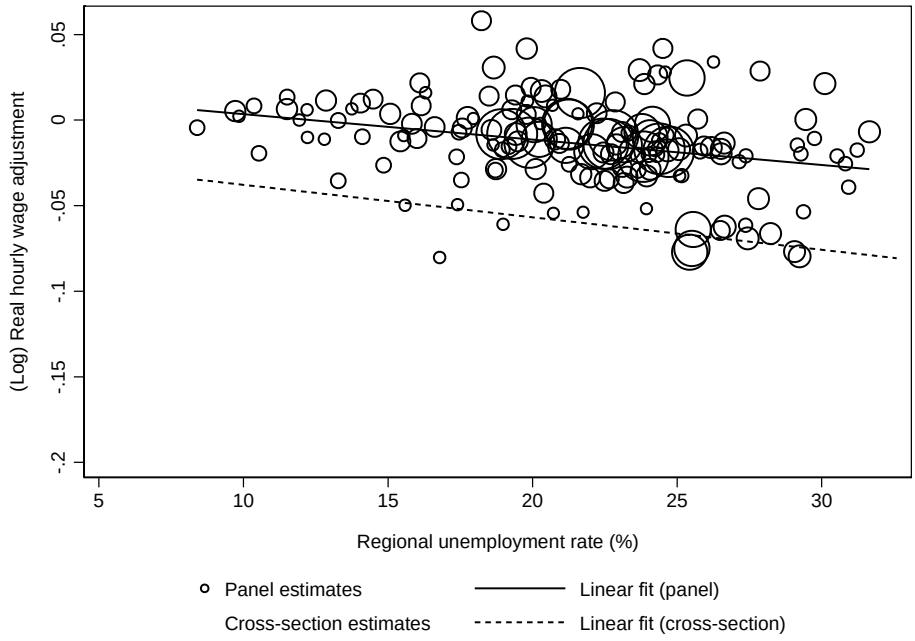
Source: Labour Force Survey (LFS), 2015Q1-2019Q1; Hellenic Statistical Authority (ELSTAT).
Notes: Log hourly real wage is the dependent variable. Individual characteristics include a second order polynomial in age, and controls for gender, marital status, nationality, education, part-time job, small firm, urban status, industry and occupation. Standard errors (in parentheses) are clustered by region. Regional unemployment is instrumented using 1 and 2-year lags in 2SLS models (column 4). Asterisks ***, ** and * denote statistical significance at the 1%, 5% and 10% level, respectively.

Next, we turn to the regional-level estimates based on the 2-step procedure described in Equations (2) and (3) in the previous section. In the first step, we estimate Equation (2) with and without including individual fixed effects. Therefore, we obtain regional-level wages that are corrected for all sorts of observable and unobservable individual heterogeneity (first stage panel estimates), and regional wages that are corrected only for observable heterogeneity at the individual level (first stage cross-sectional estimates). In the latter case, results in the second step could be biased due to correlation between unobserved heterogeneity and observable individual characteristics. As studies regarding the existence of a Greek wage curve have not addressed the issue of unobserved heterogeneity at the individual level, we report both types of regional-level wage curve estimates.

Before presenting the results of those regressions, we start by plotting both of our corrected regional wage measures against regional unemployment, in order to have a first descriptive picture regarding their relationship. This is done in Figure 1. Each circle represents a NUTS-2 region-quarter cell and it is weighted by the size of the respective population. There are a couple of things to notice here. First, there seems to be a negative relationship between wages and current unemployment at the regional level, especially for higher unemployment levels. However, as indicated by the individual-level analysis, this relationship is quite weak in the Greek case, i.e. wages do not respond substantively to the prevailing local labour market

conditions. Second, not controlling for time-invariant unobserved individual heterogeneity seems to have some implications regarding the magnitude of the negative relationship between wages and unemployment. When considering the first-stage panel estimates, the slope of the relationship remains unchanged, but it becomes much weaker – and very close to zero – compared to the one obtained using the first-stage cross-section wage measures.

Figure 1. The wages-unemployment relationship at the regional level



Source: Labour Force Survey (LFS), 2015Q1-2019Q1; Hellenic Statistical Authority (ELSTAT).
Notes: Cross-section and panel estimates of regional wages have been obtained using variants of Equation (2). Dots are weighted by the size of the regional population. Regions follow the NUTS-2 classification (13 regions).

For a more formal assessment of this relationship we turn to our results based on Equation (3). Estimations are weighted by the size of the local population, and composition-corrected wages from the first step (either using panel or cross-sectional estimates) are regressed on sets of year fixed effects, quarter fixed effects, region dummies and regional linear time trends. In all our models we consider current regional unemployment as endogenous, hence we instrumented it using its own 1- and 2-year lags. Again, we use 13, 15 and 28 regions, where fixed effects and trends are accordingly defined. The results are shown in Table 2. The first columns report results using the first stage cross-section measure of regional wages. The last two columns report results using the first stage panel measure of regional wages. The findings confirm the descriptive evidence of Figure 1 and the individual-level results. Wages remain non-responsive to local labour market conditions; they are driven by aggregate factors. Especially when considering the first-stage panel corrected wage measures, the relationship is very close to zero and not statistically significant.

Table 2. The Greek wage curve: Regional-level estimates

	First stage cross-section		First stage panel	
	[1]	[2]	[3]	[4]
	Panel A: 13 regions			
(Log) regional unemployment	-.046 (.035)	-.023 (.029)	-.007 (.014)	.001 (.014)
First-stage F-statistic	28.51	27.62	28.51	27.62
Observations	221	221	221	221
	Panel B: 15 regions			
(Log) regional unemployment	-.050 (.036)	-.033 (.032)	.006 (.014)	.004 (.015)
First-stage F-statistic	31.71	31.01	31.71	31.01
Observations	255	255	255	255
	Panel C: 28 regions			
(Log) regional unemployment	-.048 (.035)	-.064 (.057)	.012 (.016)	.005 (.023)
First-stage F-statistic	15.49	6.50	15.49	6.50
Observations	476	476	476	476
Region fixed effects	Yes	Yes	Yes	Yes
Time fixed effects	Yes	Yes	Yes	Yes
Regional time trends	No	Yes	No	Yes

Source: Labour Force Survey (LFS), 2015Q1-2019Q1; Hellenic Statistical Authority (ELSTAT).
Notes: 2SLS estimates. Regional unemployment is instrumented using 1- and 2-year lags. Cross-section and panel estimates of regional wages have been obtained using variants of Equation (2). Asterisks ***, ** and * denote statistical significance at the 1%, 5% and 10% level, respectively.

All in all, it appears that a wage curve does not exist in Greece, not only historically (pre-crisis) but also deep into the period after the reforms that were implemented as part of the country's Economic Adjustment Programmes during the crisis. In this sense, the 'temporary' appearance of a wage curve in Greece in 2011, documented in previous studies, seems to be more of a statistical anomaly than evidence of a change in the functioning of – and the degree of flexibility in – the labour market, following the extensive programme of labour market reforms since 2011.

b. Industry premia

We turn our attention to the case of sectoral wage premia. As noted earlier, the existence of sectoral premia can be taken as evidence of non-competitive factors influencing wage determination. Given that the labour market reforms since 2011 aimed at improving competitive conditions in the labour market (and more broadly in the economy), evidence of declining sectoral wage premia can be interpreted as indicating that the reforms had had the desired effect of removing rigidities in the labour (and product) market and thus increasing flexibility.

Our analysis indicates that there has been very little change in sectoral wage premia over time. Consistent with the evidence presented in Christopoulou and Monastiriotis (2018), for

the period 2010-2016, we find that sectoral premia varied sizeably at the time when all labour market reforms were in place (in 2015-16) and they have changed very little since then (up to the first quarter of 2019). As is shown in Table 3[117], there is some quite substantial variation in wage premia/penalties across the 13 NACE Rev. 2 broad domains, both at the beginning and at the end of our period of analysis. In both periods, sectors with high profit margins (e.g., Financial and insurance activities), high rates of unionisation / public sector employment (e.g., Education) and a tradition of high product-market regulation (e.g., Transport) offer sizeable wage premia – i.e., sizeably higher *ceteris paribus* wages compared to other sectors in the economy. In contrast, low-skill and high-competition sectors (Hospitality, Trade, Construction) or sectors with low regulation (Employment in households) offer significantly lower wages *to otherwise comparable individuals* (i.e., after controlling for a host of personal and other characteristics).

Table 3. Industry wage premia/penalties by period

	2015-16 premium		2018-19 premium		%
	%	€/h	%	€/h	change
Industry (NACE Rev. 2)	[1]	[2]	[3]	[4]	[5]
Manufacturing	3.50%	€ 0.15	4.15%	€ 0.18	19.0%
Electricity, gas & water supply	4.17%	€ 0.18	5.58%	€ 0.24	34.9%
Construction	-3.31%	-€ 0.14	-3.29%	-€ 0.14	-0.6%
Wholesale & retail trade	-3.24%	-€ 0.13	-4.70%	-€ 0.19	44.1%
Accommodation & food service activities	-9.09%	-€ 0.37	-7.25%	-€ 0.30	-19.4%
Transportation, storage & comms	11.49%	€ 0.52	9.51%	€ 0.42	-18.1%
Financial & insurance activities	26.78%	€ 1.30	25.61%	€ 1.24	-4.9%
Real estate & business activities	-4.10%	-€ 0.17	-3.74%	-€ 0.16	-8.4%
Education	20.09%	€ 0.94	21.20%	€ 1.00	6.2%
Health & social work	0.59%	€ 0.03	1.20%	€ 0.05	103.3%
Arts, recreation & other services	-2.03%	-€ 0.08	-5.68%	-€ 0.23	175.3%
Activities of households as employers	-19.88%	-€ 0.76	-22.56%	-€ 0.85	12.0%
Activities of extraterritorial organisations	35.68%	€ 1.81	55.99%	€ 3.18	75.1%
Real hourly wage	-	€ 4.23	-	€ 4.23	0.02%

Source: Labour Force Survey (LFS); Hellenic Statistical Authority (ELSTAT).
Notes: %premium/penalty calculated as the absolute difference between the estimated marginal effect per sector and the average marginal effect (predicted wage).

At large, the relative position of sectors in terms of their premia/penalties has not changed over the 5-year period of our analysis. However, as is shown in the last column of Table 3, the size of these premia has in many cases changed notably. For example, the premium more

[117] For a visual presentation of the predicted marginal hourly log-wages underpinning the sectoral wage premia presented here and of the quarter-by-quarter evolution of these wage premia/penalties, see Figures A1 and A2 in Appendix.

than doubled in the Health and social work sector – which was not a sector of high wage premia – while the penalty in the Arts and entertainment sector almost tripled. Premia and penalties have also increased in Manufacturing, Trade and Energy – i.e., in sectors that one would expect would be most targeted by the reforms. Instead, premia declined only in the Transportation and Financial services sectors; while some penalties also declined (in Hospitality and in Real estate). All in all, the comparison of sectoral premia/penalties across the two periods verifies the results of Christopoulou and Monastiriotis (2018) – and extends them to 2019 – showing that non-competitive wage determination across the sectors of economic activity in Greece has not declined and thus that the reforms of the previous period have not contributed demonstrably to the rationalisation and flexibilization of the labour market in the country. Instead, sectoral differences in *ceteris paribus* wages remain – or have been amplified – indicating that the labour market is still characterised by frictions and rigidities that hinder flexibility and equilibrating adjustments. The stability over time in the ranking of sectors with regard to their wage premia/penalties is demonstrated visually in Figure 2, below.

Figure 2. Industry wage premia in Greece, 2015/16 and 2018/19

Source: Labour Force Survey (LFS); Hellenic Statistical Authority (ELSTAT).
Notes: Authors' elaboration from estimates depicted in Table 3.

c. Individual premia/penalties

Another angle to the question of rationalisation and flexibility in the labour market concerns the extent of 'marketisation' of the wage structure, i.e. the degree to which wage differentials

reflect differences across individuals in marketable characteristics. Perhaps the most important marketable characteristic in the labour market is education. From the perspective of a competitive market, education ought to be an important driver of wage differentials. In contrast, fixed (or quasi-fixed) socio-demographic characteristics, such as gender or the place of birth (which are not tradable), should not play an important role in determining individual wages – unless, that is, they reflect other unobservable characteristics which affect individual productivity.[118] Assuming that, in the period under study, the underlying characteristics associated with these variables (education, gender, foreign-born) have not changed significantly, examining the returns (premia or penalties) associated to each of these characteristics should offer a measure of the extent to which marketisation intensified in the labour market, i.e., whether wages reflect increasingly the presumed productivity differentials among individuals.

We examine this again with the help of the simplified version of Equation (1), which is modified to include the series of individual-level characteristics included in vector X (as described in Section 2) but this time it excludes controls for job (part-time, firm-size, occupation, sector) and area/demand characteristics (regional unemployment). The results, for the variables of our interest, are presented in Table 4.

Table 4. Individual premia/penalties by period

Premium/penalty		2015-16 [1]	2018-19 [2]	% change [3]
Female penalty (vs males)	%	-13.6%	-12.5%	-8.33%
	€/hr	-0.57	-0.52	-8.34%
Foreign-born penalty (vs natives)	%	-15.6%	-10.6%	-31.84%
	€/hr	-0.62	-0.43	-30.71%
College premium (vs secondary)	%	20.8%	21.2%	2.10%
	€/hr	0.91	0.92	1.43%

Source: Labour Force Survey (LFS); Hellenic Statistical Authority (ELSTAT).
Notes: %premium/penalty calculated as the absolute difference between the estimated marginal effect per characteristic and the average marginal effect (predicted wage).

As can be seen, in the period at the start of the country's third Economic Adjustment Programme (2015-2016), some 3-4 years after the major labour market reforms, the Greek labour market was still characterised by some notable wage penalties associated to non-marketable characteristics such as being female or foreign-born. The so-called female wage penalty stood at 13.6% of the mean predicted wage or 57 cents of a euro for each hour

[118] For example, career interruptions in the case of the gender variable or command of the local language in the case of the foreign-born variable.

worked. The foreign-born wage penalty was even larger, standing at 15.6% or 62 cents of a euro for each hour worked. On the other hand, the so-called college premium (the extra hourly pay for an individual with university education vis-à-vis an identical individual with secondary education) was quite large, at 20.8%, representing a premium of €0.91 per hour (or about €150 per month for an individual working full-time).

At the end of the period under analysis, all of these premia/penalties had moved in a direction consistent with the hypothesis of enhanced marketisation. Wage sorting on the basis of education intensified further, albeit rather marginally, producing an estimated college premium of 21.2% (€0.92 per hour). In turn, the female penalty declined, estimated at 12.5% in 2018-2019 (€0.52 per hour). The decline was sizeably bigger for the case of the foreign-born penalty, which dropped by over 30% to an estimated value of 10.6% or 43 pence of the euro per hour worked. Thus, on the basis of these results, concerning wage sorting on the basis of marketable and non-marketable individual characteristics, it appears that some improvements have indeed occurred in the Greek labour market in the direction of rationalisation and flexibilisation. By the start of 2019, some 7 years since the major labour market reforms in the country, wage penalties associated to non-marketable characteristics had declined sizeably while wage premia associated to underlying differences in individual productivity – wage sorting on the basis of education – increased; albeit only marginally.

5. Conclusions

Our aim in this paper has been to examine various aspects of wage flexibility and competitive wage determination in the Greek labour market in the recent period, as a means for checking if the extensive programme of labour market reforms that took place during the period of the country's Economic Adjustment Programmes has produced demonstrable and lasting effects on its labour market. We focused specifically on three aspects of this: wage flexibility (as captured by the so-called wage curve), sectoral wage premia (reflecting non-competitive wage-setting across sectors of the economy) and the returns to key individual (marketable and non-marketable) characteristics (the so-called college premium and female and foreign-born penalties).

Our results show very limited movement towards enhanced flexibility and rationalisation / marketisation in the Greek labour market. Consistent with previous studies, which have covered earlier years in the periods during and after the crisis, we found no evidence of a wage curve. Individual wages, net of a series of individual and job characteristics, seem not

to respond to (regional) differences in unemployment. This is true for any sub-period within the 2015-2019 timeframe and for any level of geography (broad administrative regions or when introducing more detailed distinctions between urban and non-urban places). In all of our tests (estimated with OLS or Instrumental Variables, using the traditional approach or Bell's two-step procedure), the wage curve coefficient remained statistically insignificant. Although in the most restrictive of our models we found wage curve coefficient values near the ones reported as an empirical regularity in the international literature (around 10%), statistically the estimates remained not different from zero. Our analysis of the evolution of sectoral wage premia also produced results pointing to limited (if any) moves towards a more rationalised competitive wage-setting across the economy. Consistent with earlier findings for earlier years (Christopoulou and Monastiriotis, 2018), we found that sectoral premia if anything increased in key sectors where policy was presumably targeted (Manufacturing, Energy, Trade) and declined only marginally, or even increased, in the main sectors where premia were originally very high (Transport, Finance, Education). The only area where some evidence was in fact found in the direction of enhanced rationalisation and more competitive wage-setting was in the case of the premia/penalties associated to individual characteristics. There, we documented a (marginal) increase in the so-called college premium, indicating that education became increasingly relevant for wage determination over time (in line with earlier evidence on this); while the penalties for females and foreign-born individuals declined rather substantially, indicating inversely that wage setting became less influenced by non-competitive factors at the individual level.

All in all, our evidence leads us to a rather disappointing de facto assessment of the impact of the earlier labour market reforms on the functioning of the labour market. Although we did not provide a direct test for the causal impact of these reforms, our pursuit and analysis of the circumstantial evidence clearly suggests that wages have not become significantly more flexible or driven significantly more by competitive forces in the (many) years since the reforms. In the advent of the COVID-19 pandemic, the Greek labour market seemed to continue to be characterised by non-competitive dynamics and aspects of rigidity which do not allow wages to respond flexibly to unemployment differentials or to equilibrate across sectors of the economy or across seemingly comparable individuals with (presumably) similar productivities. The consequences of this, for the functioning of the Greek labour market, for economic justice and socio-economic inequalities, and indeed for the health and resilience of the Greek economy at large, are difficult to measure or assess in a quantifiable way. However, the evidence of persistently absent flexibility and competitive wage determination suggests to us that the country still has a long way to go in order to achieve the degree of fluidity and 'marketisation' in its labour market that is commonly associated with more advanced and

more resilient economies in Europe and elsewhere. The nature of the required reforms may be different than that of the reforms implemented in the previous period: they may include changes also in the demand-side of the labour market (i.e., in the product markets) as well as in wider policy areas (e.g., in the housing market, on taxation and the portability of pensions) so as to increase aspects of flexibility that seem to be particularly missing, concerning specifically the mobility of capital across sectors (so as to dampen existing and persistent sectoral wage differentials) and the mobility of individuals across sectors, jobs and geographical areas (so as to increase the responsiveness of wages to unemployment differentials or to individual differences in productivity). Given the disturbance caused by the COVID-19 pandemic in the economy as a whole but also in the labour market in particular, it appears to us that in the period after the COVID-19 crisis policy should look again at the workings of the labour market in the country and examine anew the structural and other rigidities that seem to hold back its competitive dynamics.

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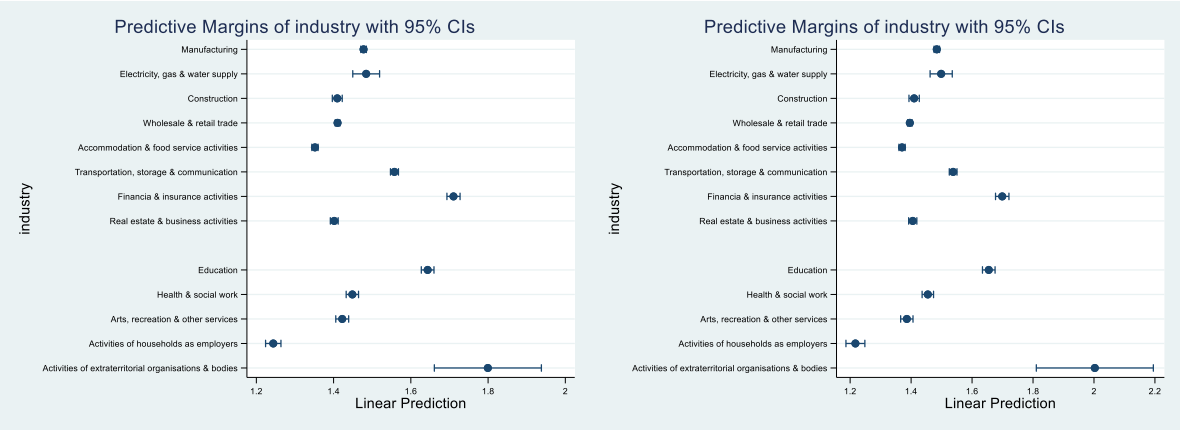
APPENDIX

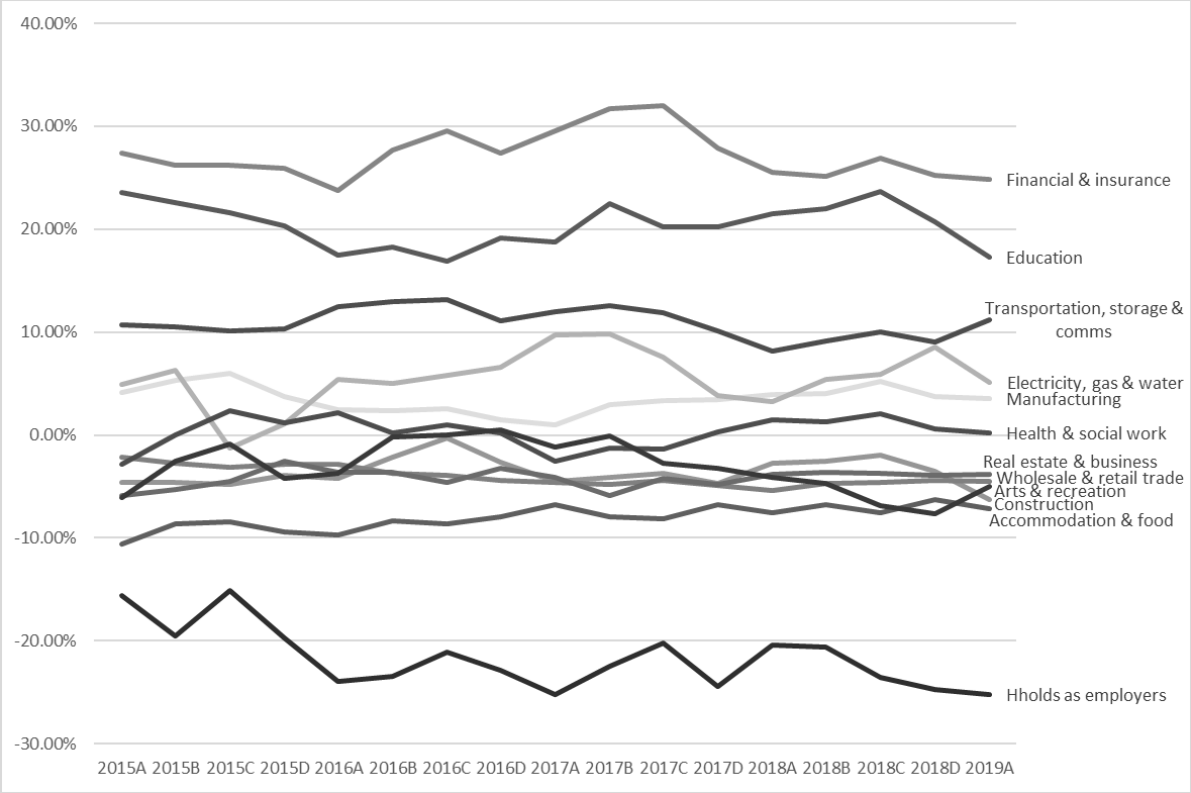
Figure A1. Predicted marginal hourly log-wages (predictive margins) by industry and period



2015-16 **2018-19**

Source: Labour Force Survey (LFS); Hellenic Statistical Authority (ELSTAT). Notes: Author's calculations.

Figure A2. Evolution of industry wage premia/penalties



Source: Labour Force Survey (LFS); Hellenic Statistical Authority (ELSTAT). Notes: Author's calculations.

Chapter 11. Populism, Party Politics and the Economic Crisis in Greece: a Comparison with the Case of Portugal

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Abstract

Among all South European countries, Greece underwent the most severe economic crisis in the 2010s which gave rise to dormant populist reactions, which combined with diffuse political discourse and the political party system.

In contrast to the comparable case of Portugal, populism in Greece was reflected in the emergence or strengthening of populist parties on the Left and the Right, the adoption of populism as political discourse by an otherwise radical left-wing party (Syriza), and its rise to power in 2015 on the wave of social reactions to austerity policies. Populism was also manifested in the adoption of populist governing policies during Syriza's government rule, in coalition with the nationalist right-wing Anel party, in 2015-2019.

The spread of populism and its rise to power in Greece are analyzed in the light of the opposite experience of Portugal and are attributed to following causes: legacies of democratic practice after the 1974 transition to democracy, traditions of political culture and the polarization of the party system, in addition to the gravity and long duration of the recent economic crisis which was a catalyst for the sea change in Greek politics in 2011-2019.

Acknowledgements: This chapter was first presented in different iterations as a paper in a conference organized at the Fletcher School of Law and Diplomacy on Greece and a conference on populism in Southern Europe at Georgetown University in April 2019. The author would like to thank George Alogoskoufis, Kevin Featherstone and Nuno Severiano Texeira for their kind invitations to the above conferences; and Sebastian Royo and Jorge M. Fernandes for criticisms. He also acknowledges the financial support of the Onassis Foundation USA (New York), the S. Latsis Public Benefit Foundation (Athens), the Foundation for Education and European Culture (IPEP, Athens) and the Bank of Greece. The chapter is part of the author's participation in the project "Democratic Efficiency and Varieties of Populism in Europe" (the DEMOS research project), funded by the European Commission, Horizon 2020 grant agreement No 822590.

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1. Introduction

Populism in Greece has been nurtured by long term historical legacies of political exclusion, distrust of political institutions as well as acute polarization in a two-party system. It has been sparked by the harsh austerity measures which followed the eruption of the Greek crisis, the worst in Southern Europe, and the rejection of austerity by parties and social movements, couched in populist discourse terms. After the government turnover of 2015, through which a left-wing populist government came to power in Greece, populist government measures entailed pressure exerted on democratic institutions, including the justice system and the media, and the opening of public sector jobs to governing party supporters. In comparison to other crisis-ridden South European countries, such as Portugal where populism did not emerge or Spain where it was defeated politically, populism was strikingly successful in Greece.

Populism became evident in the emergence and strengthening of populist parties on the Left and the Right, the adoption of populism as political discourse by an otherwise radical left-wing party (Coalition of the Radical Left - Syriza), its rise to power in 2015 on the wave of populist reactions to austerity policies and the adoption of populist governing policies during Syriza's government rule in 2015-2019, in coalition with the right-wing nationalist-populist party "Independent Greeks" (the Anel).

It is notable that Portugal also underwent a severe economic crisis in the early 2010s. Portugal overcame the crisis more successfully than Greece, and also had a government turnover in 2015, with the ascent of Antonio Costa, leader of the Socialist Party (PS), to government. However, in contrast to Portugal, Greece, after feeling the negative impact of a severe economic crisis and crisis mismanagement, also felt the negative impact of populist governing policies.

In what follows I will first discuss theoretical approaches to populism, arguing that conceptualizations of populism should take into account how populists actually govern, after coming to power. I will then move to the concept of "practice of political exclusion" (Fishman 2019: 221), as the first among several ways to understand populism in Greece. Political exclusion, in other words, will be shown to be a first contributing factor to the rise of populism in Greece, in contrast to Portugal (and less so, to Spain too). I will then present and interpret another contributing factor, namely legacies of state-society relations and political culture, which have provided a soil fertile for the growth of populism. The emphasis will be on the persistence of cultural patterns of resistance against the state and distrust towards political institutions, such as the government, the parliament and political parties. I will then proceed to present an argument familiar to observers of contemporary Greek politics, namely the extreme polarization of the political party system as a third contributing factor to the rise of populism.

The next step will be a brief discussion of the post-2010 economic crisis, its mismanagement, the societal reactions it provoked and its impact on the Greek party system. In short, the crisis

acted as a catalyst to the rapid and multi-faceted growth of populism in Greece in the 2010s. I will then analyze the populist character of the Syriza party and government in contrast to the Portuguese socialist party which, like Syriza, ascended to government in 2015. I will illustrate my argument through a discussion of distinctly populist governing policies in Greece which Syriza and its nationalist populist coalition partner, Anel, followed in 2015-2019. These were policies aiming to fully control the mass media, control of the justice system and recruitment to the public sector. In the conclusions I will summarize the main argument about the three factors which have contributed to the rise of populism in Greece and highlight the point about the usefulness of including the practices of populist parties in government for a more comprehensive conceptualization of populism.

2. Theoretical framework

Among the various theoretical approaches to populism, four stand out (Rovira Kaltwasser et al. 2017). The first approach understands populism as a thin ideology, the second as a political style or discourse, the third as a political strategy and the fourth as a relationship between the leader(s) and the led. All these approaches are useful to understand populism while it is on the rise in a certain political system, but none of the them places enough emphasis on populism as a way to govern and to structure state-society relations.

In detail, according to the first approach, populism is an ideology. It understands politics and society in dualistic terms; it pits the "people" against national and/or foreign "elites"; it claims that people have been deprived of their right to self-rule; and it recognizes the "people" as morally superior to its enemies. It is a "thin" ideology, i.e., it does not possess a full set of ideas and values about the world that surrounds us. It may thus be combined with other, more fully developed, ideologies, e.g., socialism, nationalism or right-wing extremism of various kinds (Mudde 2004 and 2017).

According to the second approach, populism is a political style or political discourse. It takes different forms as a signifier. In order to put it metaphorically, it is an empty vessel. In populist discourse, different, originally diverging, demands by politically weak or socially excluded identities are linked together. Depending on the political context, such identities become equivalent of one another, as they rally behind a common cause, namely to resist power-holders. For example, different groups converge to reject economic austerity (Laclau 2005, Panizza 2005).

According to the third approach, populism is a political strategy. It involves political parties and social movements, led by a usually charismatic political leader who is not bound by his or her ideology. The leader implements a strategy of vote maximization, ascending to power and maintaining power (Weyland 2001 and 2017).

And according to the fourth approach, populism is a relationship between leaders and the people who are represented and led by those who lead them. Populist leaders perform ("act out") a representation of the people "as is". Populism is manifested in a rapport between the leaders and the led, while the latter offer their direct, "unmediated" support to the former (Ostiguy 2017).

The first of the four approaches has become popular in academic research, probably because it justifiably stresses the malleability and adaptability of populism. These are features that contribute to understand how populism thrives in variable social settings (e.g., in postwar Argentina, Greece of the 1980s, and contemporary Hungary and Poland) and in symbiosis with different value systems (e.g., statist, nationalist or even neo-liberal value systems).

However, there are limits to Mudde's approach. Some ideologies may not be available to marry with populism. For example, political liberalism of the late twentieth century, emphasizing the balance among the three branches of state power (the executive, the legislative, and the judiciary) and the establishment of independent regulatory and administrative authorities (e.g., the Ombudsman) is not compatible with populism's harsh and deep divisions of political forces (Mueller 2016). Contemporary political liberalism, stressing the need to balance the expression of popular will with the safeguarding of institutional checks and balances is probably not compatible with the naked, i.e., not institutionally mediated, expression of popular will, which populism advocates.

Most of the above conceptualizations are better in interpreting populism *before* its ascent to power than after. Yet, today there is already a long record of populists in power around the world. The aforesaid approaches are perhaps not as useful for the analysis of populist government policies.

For example, one can observe patterns of recurrent populist government policies in Europe today, such as the policies of FDZ government in Hungary, the PiS government in Poland, the SNS government in Serbia, and the Syriza-Anel government in Greece (2015-2019), which include several, if not all of the following government policy preferences:

- distrust towards checks and balances in liberal democracies (distrust towards the justiciary, the media, the independent regulatory authorities)
- colonization of the state
- clientelism in public sector and welfare policies
- economic nationalism, if not outright protectionism
- skepticism or hostility towards the Euro

If my claim that populism in power manifests a set of concrete populist policy choices is correct, then, after all, perhaps populism as ideology, is not so "thin" as asserted by Mudde's theory of populism (Mudde 2017). The reasons why populist governments, to a small or

larger extent, tend to adopt such policy preferences, may vary and depend on various factors. One factor may be a complementing political ideology to which populists also subscribe (e.g., socialism, nationalism). A second one may be the historical legacies of past policy arrangements in the national economy and state which populists steer from the government's position; and a third factor may be the state-society relations which populists strive to build "from above" in order to buttress their political legitimacy and chances for re-election.

3. Case selection

In order to substantiate this argument, a case study analysis would be useful. In this paper, an empirical case providing a difficult test for this argument is discussed. This is the case of the Greek crisis of 2010-2019, including the rise in popularity of the Syriza party in 2010-2014, its ascent to government in 2015, and Syriza's performance in government in coalition with the Anel party in 2015-2019. The difficulty in treating this case and therefore its usefulness as a test of the aforementioned argument lies in the fact that throughout the period under study (2010-2019), including the period of Syriza-Anel rule, the policy discretion of the Greek government was very limited.

During the crisis in Greece, a vast array of government policies, ranging from macroeconomic and fiscal policies to employment and other social policies, remained under the close scrutiny of external actors, namely foreign creditors, who constrained the policy options of Greek governments. In other words, if it is true that the populist government policies listed above are essential to populism and constitute an indispensable characteristic of populism, then these polices should also emerge in the most adverse political circumstances where there should be little, if any, room for populism. These would be circumstances in which a populist government has very little room for maneuver, a situation in which successive Greek governments, including the Syriza-Anel government, found themselves in the 2010s.

In detail, after the start of the Greek crisis (2010), policy-making in Greece occurred in the context of three Memoranda of Understanding (MoUs), signed between Greek authorities and the country's creditors in 2010, 2012 and 2015 and updated in 2016 and 2017. The MoUs laid out the Economic Adjustment Program which in the case of Greece lasted for almost nine years (May 2010-August 2018). This Program specified the conditions which Greece had to fulfil, if it was to continue to receive financial support to pay for its public debt. The fulfilment of conditions was made under the close supervision of representatives of the European Commission (EC), the European Central Bank (ECB) and the International Monetary Fund (IMF). The representatives of these three external actors, known as "the Troika", performed periodic reviews of progress accomplished in the Economic Adjustment Program, which included non-economic policy sectors, such as the public administration and justice. Evidently, little political inclusion in decision-making was allowed in that crisis-ridden environment.

4. Democratic practice and political inclusion: comparing Greece to Portugal and Spain

The rise of populism may be accounted first through a new theoretical lens first suggested by Robert M. Fishman, which can be applied to the case of Greece (Fishman 2019: 221-223). Political inclusion is a set of "ways in which political actors…make use of the rights and possibilities for action provided by democracy and deal with others who similarly engaged" (Fishman 2019: 6). Actors may be not only office holders, but also citizens, groups, unions and movements engaging in political activities.

In conjunction with Fishman's analysis, it could be added that regarding state-society relations, political inclusion is a crisp concept capturing the propensity of decision-makers to listen to and adapt to reasonable demands "from below" (unions, movements, associations) and to avoid the complete alienation of the governing elites from the people.

Democratic practice differs by country because, although constitutionally provided institutions and individual and collective rights may be similar, in practice political actors express themselves and interact within, but also outside, formal political institutions in a variety of ways (Fishman 2019). Fishman has shown that, compared to Spain or Greece, Portugal before the crisis, but also during the evolution of the crisis, was characterized by patterns of broader political inclusion, not encountered in other crisis-ridden countries.

Indeed, at least since 1974 in Greece democratic practice has been characterized by a confrontational style unmatched by corresponding practices in Portugal. Meanwhile, in Greece office holders after 1974, such as the center-right, single-majority party government of New Democracy (ND) in 1974-1981 and the left (later on, center-left) Panhellenic Socialist Movement (Pasok) in 1981-1989 were relatively unencumbered by institutional constraints, other than those placed by the Greek Constitution of 1975. If anything, this constitution offered to the executive a role overshadowing the roles of the legislature and the judiciary. Greek office holders did not face the constraints which Spanish office-holders encountered during and after the first transition period from Franco's rule (Fishman 2019: 51-57). Constraints included the negotiations with the outgoing Francoist elite or the bitter memories of the Spanish civil war and the 40 year-long, horrifying oppression which followed that war.

Political inclusion was not typical of the democratic practice in post-1974 Greece. Early on, the parliament became an arena of unrelenting political confrontation between government and opposition rather than a stage of political interaction opening up possibilities for inclusion in policy making. With regard to the first stages of formulating government policy, there was little consultation with social partners at least until the early 1990s (Zambarloukou 1996, Lavdas 2005, Sotiropoulos 2019). In 1980-2006, half of all general strikes which were called in Western Europe, were actually general strikes in Greece (Hamman, Johnston and Kelly 2013).

In Greece police used excessive force against demonstrators, while the latter tended to break through police lines, storm government buildings and occupy state-owned buildings such as

schools, universities, headquarters of ministries and offices of state-owned enterprises. Violent political riots were common in Greece not only during the recent economic crisis, when they became the epitome of anti-systemic political action (Andronikidou and Kovras 2012), but also throughout the preceding post-authoritarian period. Moreover, between 1975 and 2002 the longest living left-wing terrorist organization in Western Europe, the "17th of November Revolutionary Organization", bombed or assassinated members of governing and business elites as well as foreign diplomats. Less active left-wing terrorist organizations, such as the "Revolutionary Popular Struggle" (ELA), imitated its example.

In brief, Greek political elites did not follow inclusionary political practices, while non-elites did not want to be included, even if invited to do so. They preferred direct anti-government mobilization to participative consultation, as the next section of the paper also shows. On the other hand, barriers to the political participation of non-governing political or social actors were quickly erected after 1974. And such actors used to pursue their interests not so much through existing institutional arrangements, but mostly against and outside such arrangements, which created a perfect environment for populism to appear and flourish.

5. Populism, state-society relations and political culture in Greece

A popular view of state-society relations in Greece is that there is a historical legacy of resistance of Greek society against the state and foreign occupying powers (Svoronos 1980). Resistance has ranged from the struggle of the nascent modern Greek nation against the Ottoman Empire in the early 19th century, during the Greek War of Independence (1821-1827), to the resistance of Greek partisan guerrilla armies against the Axis armies occupying Greece during the Second World War (1941-1944). The accuracy of that view, which downplays Greece's comparatively early integration into Western alliances (e.g., NATO, EU), is debatable. Still one may retain from that view a tendency of Greeks to be suspicious of authority that is also borne out of more recent surveys of trust towards political institutions, as shown further in this paper (Figures 1, 2 and 3, below).

There are also other historical legacies of state-society relations such as political clientelism (or patronage) and populism. Citizens and social groups were integrated into Greece's political system in 19th and 20th centuries through networks of political patronage and populist mobilization of the masses (Mouzelis 1986). A well-known recent instance of the latter was the rule of Pasok in 1981-1989 under the leadership of the charismatic populist leader Andreas Papandreou (Lyrintzis 1987 and 2005, Kalyvas 2015, Sotiropoulos 1996).

It has been argued that Greek politics in the whole era between the rise of Pasok to power in 1981 and today can be interpreted through the prism of populism (Pappas 2013). This is probably an exaggeration. However, it is true that particularly the 1980s and the early 1990s populist themes were part and parcel of Greece's political culture (Doxiadis and Matsaganis

2013, Kalpadakis and Sotiropoulos 2007). In addition to the aforementioned near-absolute rejection of state authority and suspicion towards Western powers, one has to reckon that parties, mass media and a large share of the general population have subscribed to a conflictual, dichotomic, interpretative scheme of public policy choices and a xenophobic understanding of immigration and Greece's place in the world.

It has also been argued that in Greek political culture there has always been a cultural dualism (Diamandouros 1994), pitting "Westernising" political forces and social strata against "underdog" forces supporting traditional and parochial value. Indeed, one cannot help observe patterns of political values and behavior indicative of dualistic, Manichean discourse. Pasok's outright rejection of the establishment, domestic and foreign monopolies, the USA, and even European social democracy in the early 1980 set the stage for the astonishingly popular conceptualization of the Greek crisis of the early 2010s by Syriza. The latter grew in terms of popularity, by continuously employing contrasts such a clash between "the people" vs. "Brussels", the "new" vs. the "old" (political system), "us" vs. "them".

Similarly, in terms of the shallow pillars of liberal democracy in Greece, there was a tension between liberal and illiberal patterns (Pollis 1987, Diamandouros 1994). After transition from authoritarian rule in 1974, the post-authoritarian Greek democracy was only weakly anchored on liberal values and liberal principles of modern democratic regimes, such as checks and balances among democratic institutions. Individual human rights were constitutionally protected. However, they were a lesser priority compared to traditional collectivist values and institutions, such as the Greek nation. Even if plain illiberalism was never hegemonic, the liberal bases of Greek politics and society remained weak.

With the benefit of hindsight, one may argue that - after the 1974 transition to democracy – a few time periods of political, economic and administrative modernization and national organizational successes, such as the impeccable organization of the Athens Olympic Games in 2004, were interspersed in a long period of hegemony of traditionalism and parochialism. The latter were cultural traits providing a soil fertile to the rise of populism. For example, throughout the last four decades, in some quarters of Greece's state, such as schools and public administration, a culture of egalitarianism reigned supreme. It was a culture diffused by parties, media and unions of the Right and the Left. This culture made the differentiation of rewards on the basis of effort and achievement impossible, as both under-performance and over-achievement in education as well as both slack and commitment to work were equally compensated. It became customary to distribute the same educational credentials or material rewards to almost everybody. Moreover, populism was also diffused in and by religious institutions, namely the Greek Christian Orthodox Church (Stavrakakis 2002, Halikiopoulou 2012) and converged with untamed nationalism in the teaching of history in elementary and high schools (Koulouri 2002).

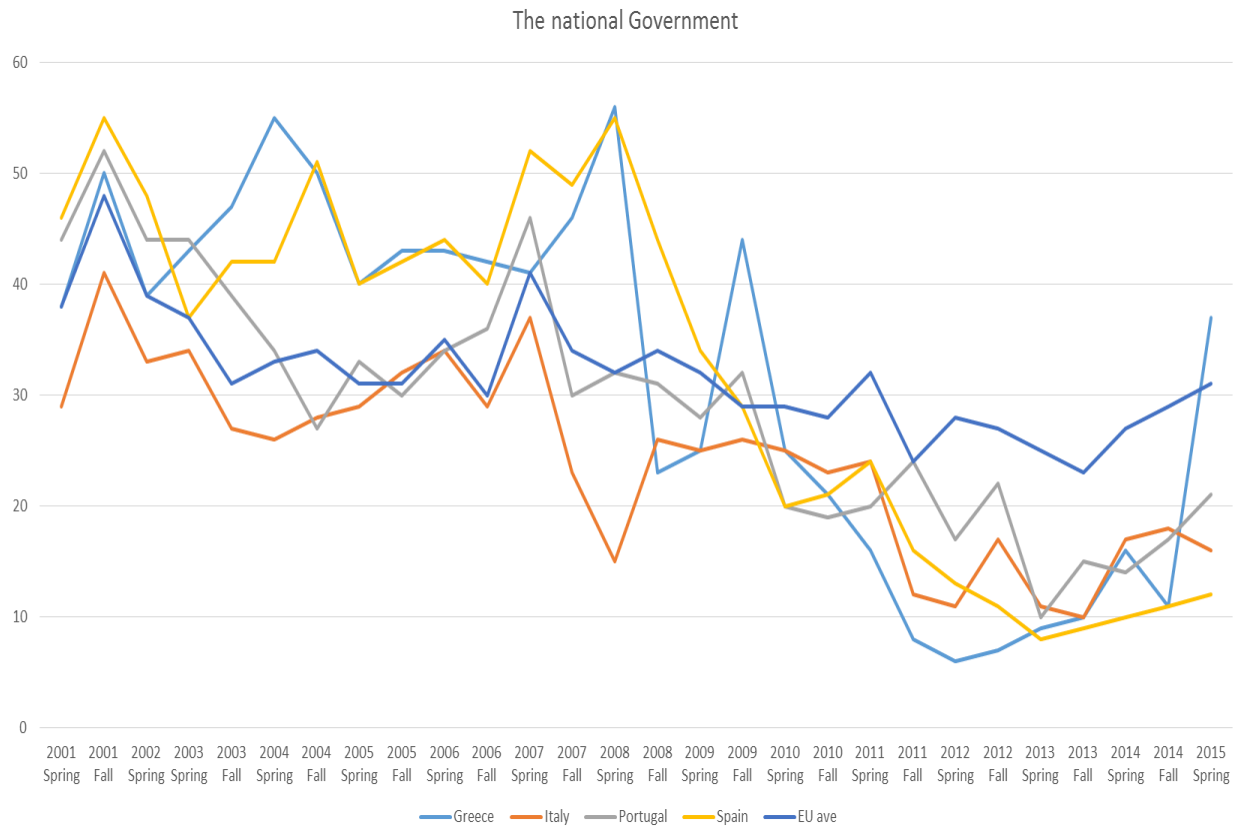
Such legacies of political culture which were full of contradictions, bore consequences in state-society relations and national economy. Despite some public policy successes in the areas of modern transport and communications infrastructure, there are long-standing systemic and public policy failures (Featherstone and Papadimitriou 2008). Failures include long-term instances of poor governance, corruption, and discrimination against political opponents and powerless groups of the population, e.g., women, the young, the outsiders of the labor market, and migrants (Lyrintzis 2011, Pappas 2013, Sotiropoulos 2019). Populism does not necessarily spring from governance failures and social inequalities. However, after being sparked by other stimuli such as a grave economic crisis, populism can flourish on the soil of a polarized political culture, systematic public policy failure and chronic inequalities.

Primary among such failures has been the incompatibility between employment and education policies in Greece. There has been a long-term divergence between education/training and employment trends, dating back at least to the early or mid-1990s. At the time, a proliferation of establishing new higher education institutions was decided by successive governments, with an eye to appease patronage-based demands for new universities and university departments across the country. The proliferation of higher education opportunities took place without a corresponding care to intervene in the economy in order to stimulate the creation of new jobs and adapt education to labor market demands. Unavoidably, as time passed, larger shares of the younger-age groups experienced unemployment, underemployment and social status inconsistency, all of which also contributed to a culture amenable to exploitation by populists.

Legacies of Low Political Trust

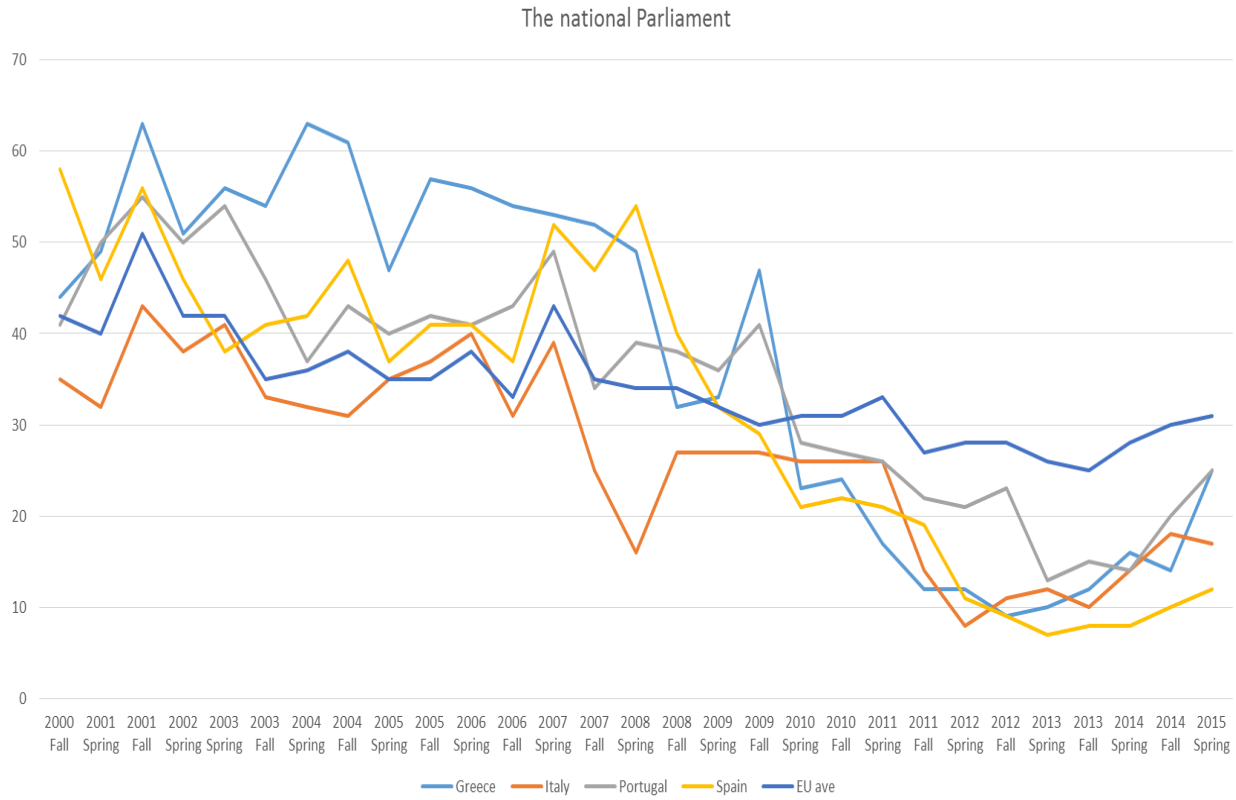
All of the above historical tendencies of state-society relations and patterns of political culture fueled a negative stance towards political institutions. Political trust was on the decline in most EU countries and certainly in all South European countries before the economic crisis started, but there was a very sharp decline in trust towards the government, the parliament and political parties after 2009 (Figures 1, 2 and 3). The sharpest drop occurred in Greece, where already in 2010 trust in parties reached rock bottom (Figure 3).

Figure 1. Trust in national government of countries of Southern Europe, 2001-2015: % of respondents who trust somewhat and trust a lot



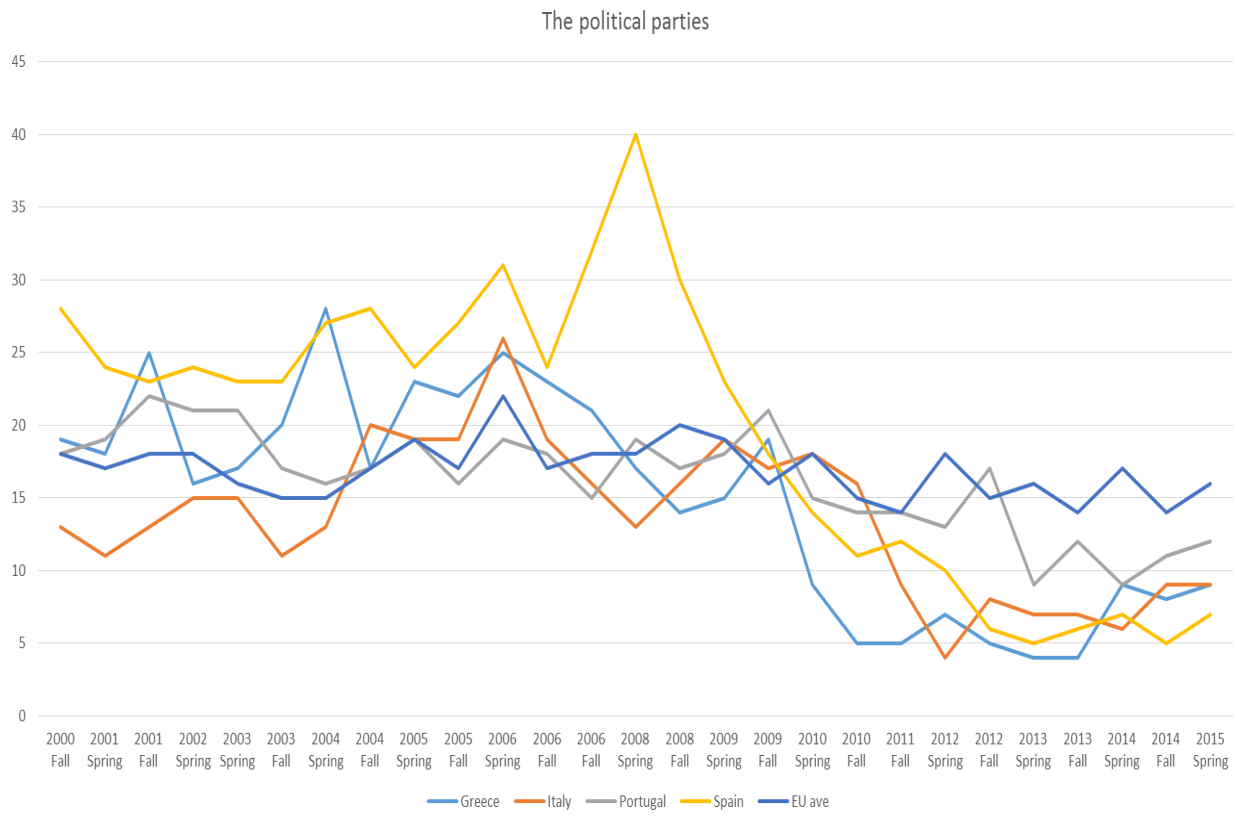
Source: Standard Eurobarometer surveys

Figure 2. Trust in national parliament of countries of Southern Europe, 2001-2015: % of respondents who trust somewhat and trust a lot



Source: Standard Eurobarometer surveys

Figure 3. Trust in political parties of countries of Southern Europe, 2001-2015: % of respondents who trust somewhat and trust a lot



Source: Standard Eurobarometer surveys

6. Populism and party system polarization

Non-inclusive patterns of democratic practice and distrust towards political institutions combine with and are reflected in the political party system. Populism does not only breed polarization in the party system, but also benefits from it. Populist discourse thrives on pre-existing legacies of political party polarization, in terms of which Greece was far ahead, so to speak, compared to other countries. For example, even before the crisis started, compared to the Portuguese party system, the Greek party system was extremely polarized. In the pre-crisis period (up to and including 2009) the Greek party system was an extreme case of two-party system. For three decades the two largest Greek parties, ND and Pasok, obtained a very large share of the vote each (Table 1). It is striking that in all parliamentary elections between 1981 and 2009 the vote for ND ranged between 34 and 47 percent of total votes cast, while in the same time period the vote for Pasok ranged between 38 and 48 percent. The two

parties taken together, garnered a very large share of the vote in the pre-crisis elections (Table 2).

Table 1. Political party polarization in Greece: percentage share of the vote obtained by the two largest political parties in parliamentary elections, 1974-2012

	1974	1977	1981	1985	June 1989	Nov 1989	April 1990	1993	1996	2000	2004	2007	2009	May 2012	June 2012
New Democracy	54.4	41.8	35.9	40.8	44.3	46.2	46.9	39.3	38.1	42.7	45.4	41.8	33.5	18.9	29.7
Pasok	13.6	25.3	48.1	45.8	39.1	40.7	38.6	46.9	41.5	43.8	40.6	38.1	43.9	13.2	12.3

Source: official results of parliamentary elections

Table 2. Political party polarization in Greece and Portugal before the economic crisis: Combined percentage share of the total vote obtained by the two largest parties in national parliamentary elections prior to the start of the economic crisis

	National election preceding the prior- to – last election before the crisis (2004 in Greece, 2002 in Portugal)	**Prior-to-last national election before the crisis (2007 in Greece, 2005 in Portugal)**	**National election at the start of the crisis (2009 in both countries)**
Greece	86	80	77
Portugal	78	74	66

Source: official results of parliamentary elections

Two-partyism in Greece has a long history, manifested in legacies which still impact Greek politics today. In the interwar period, there was a national schism between the pro-royalist party, supporting the King, and the liberal party, led by Eleftherios Venizelos. After the end of the Second World War, a civil war followed in 1946-1949 between the communist army and the government army supporting the post-war governments of the Center and the Right. A further division between the Right and the Center evolved in the 1950s and the 1960s, while the civil war-driven cleavage between anti-communists and communists remained deep, as the communist party (the KKE) had been outlawed and had sustained an underground fight against Greek governments in the 1950s. Gradually a front of the Anti-Right clashed with the Right, before democracy broke down in 1967 (Moschonas 1994). The legalization of the KKE

during the transition to democracy (1974) may have closed this chapter in post-war Greek political history, but another basis for acute political party conflict emerged with the clash between the center-right New Democracy and the center-left Pasok in 1974-2009. The post-1974 two-party system was also characterized by extreme polarization (Mavrogordatos 1984, Lyrintzis 2005, Nicolacopoulos 2005).

Since the early 1990s the two-party system may have been marked by an increased convergence between ND and Pasok regarding many policy areas (Pappas 2013). Yet, the conflict between the two parties in parliamentary debates and over the control of labor and professional associations and the staffing of the public sector with party supporters remained extensive throughout the period up to 2011. In that year, owing to the parliamentary instability which the then government of Pasok faced while the country had not recovered from the crisis of 2010, ND and Pasok entered a coalition government together. The two coalition partners stayed in power until early 2015, when the anti-austerity Syriza party won a decisive electoral victory with 35 percent of the vote. In 2015 the ND party came second and formed the main parliamentary opposition to Syriza, but Pasok dwindled down to unprecedented low levels of electoral influence (4.6 percent). The economic crisis, very briefly discussed below, had a heavy impact on the party system, as drastic re-alignment took place (Tsirbas 2016, Tsatsanis and Teperoglou 2016).

7. The Greek economic crisis as a catalyst for populism

It was in this contradictory and inflammatory political, cultural and social environment that the economic crisis of the 2010s started and evolved in Greece. The causes of the crisis were not exclusively domestic, but were related to global economic developments and institutional arrangements of the Eurozone negatively affecting other countries of Southern Europe too (Featherstone 2011, Mitsopoulos and Pelagidis 2011, Lyrintzis 2011, Alogoskoufis 2019).

The financial crisis, which had affected the US economy in 2008, combined with the asymmetries of the Eurozone after 2010 to provoke an economic shock to the EU and Greece. Briefly, from the start of the Eurozone (1999) there were large differences in competitiveness and export capacities between North and South Eurozone Members, which shared a common currency, but little else. The economic governance of the EU was neither designed nor prepared to mitigate the effects of divergence in economic performance between North and South European economies, let alone to balance the impact of a grave economic crisis. The long-term domestic problems of economy and governance in the four South European countries were exacerbated when Eurozone's weakest link, namely the Greek economy, almost collapsed.

The Greek public finances had been deteriorating since at least the mid-2000s, while the balance of payments had also dramatically worsened over time in the 2000s. By the end of

that decade, Greece was facing prohibitive interest rates and could not borrow on international markets. It became unable to service its soaring public debt (Table 3, below). The government of Pasok, which had won a landslide victory in the elections of late 2009 and enjoyed single-party majority rule, came close to stop paying out salaries and pensions and the country was at the brink of sovereign default in early 2010.

As noted in the beginning of the chapter, the provision of financial support to Greece was accompanied by economic austerity packages, including strict conditions for reforms. The austerity packages included large scale cuts in public sector salaries and pensions; decreases in public spending in all policy sectors including welfare and education; and liberalization of employment protection in the private sector along with a freeze on hiring, followed by dismissals, of fixed-term and temporary public employees. The combined effect of these measures was dramatic for economic growth which suddenly dipped, while poverty and unemployment soared, reaching unprecedented high levels in 2013 (Table 3).

Table 3. The impact of the economic crisis in Southern Europe: changing levels of fiscal and social indicators before and after the onset of the crisis in Greece, Italy, Portugal and Spain

	Public Debt, % GDP, 2008	Public Debt, % GDP, 2012	Public investment cumulative cuts, 2009-2013	Public spending cumulative cuts in education, 2009-2012	Unemployment Rate in 2013	Poverty rate in 2013
Greece	113%	177%	-55%	-18%	27.5%	35.7%
Italy	106%	127%	-26%	-5%	12.1%	28.5%
Portugal	72%	119%	-48%	-13%	16.4%	27.5%
Spain	40%	86%	-58%	-19%	26.1%	27.3%

Source: Eurostat, various years

8. The management of the economic crisis in Greece and social reactions to austerity

In Greece, despite the obvious derailment of public finances, all parties of the opposition and unions completely rejected austerity from the start. In May 2010 George Papandreou, the then head of Pasok and Prime Minister, presented an austerity plan, agreed upon with Greece's international lenders. No consensus was reached on the austerity plan. Even the center right party of ND, which had been in power in 2004-2009 and was the main opposition

to Pasok when the crisis hit, was adamant in opposing austerity, at least in the first phase of the crisis (2010-2011). The ND reversed its stance in November 2011, when it entered a short-term coalition government under the technocrat Lucas Papademos. After winning the elections of 2012, ND – in government coalition with Pasok - pursued austerity throughout 2012-2014, under constant fire by opposition parties of the left (Syriza) and the right (Anel, and the neo-nazi party Golden Dawn). It was only after the populist coalition between the radical left (Syriza) and Anel came to power (in 2015) that most Greek parties converged on the need for austerity measures. Convergence on austerity policies occurred in August 2015, after a misconceived referendum launched by the Syriza-Anel coalition government and under the threat of sovereign default.

The reactions to austerity policies were fierce and the negative social impact of the economic crisis was large. Unions and associations, regardless of their links to Left or Right political parties, also mobilized against austerity. In 2010–2014, in the span of 5 years, 42 general strikes were launched in Greece, i.e., about 8 general strikes per year. Associations of professionals and other associations of self-employed Greeks organized sector-level strikes to preserve preferential treatment by the state (e.g., regarding closed access to their market niche, higher than average pensions, etc). Examples were strikes by small shop keepers, truck owners and taxi owners, as well as relatively well-to-do professions, such as pharmacists and lawyers. Demonstrations became massive in 2010-2014 and were fueled by new, social movements, such as the "indignant" people (*aganaktismenoi*, the Greek version of the Spanish *indignados*), the "won't pay movement" (*den plirono*), and Greece's own "Occupy" movement (occupations of schools, universities, and government buildings).

In brief, while in the face of the crisis the government's behavior was uniformly strict and the government policy measures did not differentiate between powerful and less powerful groups or between high-income and low-income earners, the reaction of opposition political parties and social interests was equally adamant and unrelenting. The stage for the rise of populism was set.

9. Populism in Greece in the light of the Portuguese experience

It is possible to better understand the case of Greece by contrasting it to the most similar among South European cases, namely Portugal, which also found itself unable to finance its own public debt. Portugal had made a successful transition to democracy in 1974, had joined the EU in 1986 and since then had more or less converged with the rest of EU democracies (Costa Pinto 2011, Texeira 2012). Divergence from the EU in economic performance had occurred in the early 2000s, but Portugal had started recuperating when it was hit by the global financial crisis of 2008 and also shaken by the Eurozone repercussions of the Greek crisis in 2010.

In April-May 2011 the Portuguese government resorted to the same EU rescue mechanism as the Greek government had done a year earlier. Portugal was also offered a bailout-package, accompanied by austerity measures. The economic problem of Portugal was far from negligible, but was not as grave as Greece's. More importantly, however, reactions to the economic crisis and externally imposed austerity policies in Portugal were starkly different from the aforementioned reactions in Greece.

In Portugal the center right social democratic party (PSD) was in power in 2011-2015, while the main party of the opposition was the socialist party (PS). In the first phase of the crisis, 2010-2012, there was an agreement between the major parties, PSD and PS, on fiscal consolidation. Austerity measures in the state budget were voted in 2011 and 2012 by the government party (PSD) with the tacit consent (abstention) of the main opposition party (the PS). In 2012, the government, the labor confederation UGT (associated with the PS and the PSD) and the employers' organizations agreed on reforms of the Labor Code which went as far liberalizing employment protection (Razzuoli and Raimundo 2019).

Initial acquiescence was followed by social protest, which peaked in September 2012 and in March 2013, with two large-scale demonstrations in Lisbon. In 2013 the UGT criticized the PSD government's state budget, which it accused of 'ultra-austerity' (Razzuoli and Raimundo 2019). Between 2010-2013 five general strikes took place, among which two were organized by the two larger trade-union confederations, the GGTP, associated with the Communist Party, and the UGT (Accornero and Pinto 2014, Costa, Dias and Soiero 2015). But social reactions against austerity in Portugal were much more subdued than the corresponding ones in Greece.

10. The impact of the crisis and the social reactions to the crisis on party systems

Such differences in social reactions to the crisis itself and to the harsh austerity policies implemented to manage the crisis led to a different impact on the party systems of the two countries. In Greece, formerly existing parties, for example, Syriza and the Golden Dawn (GD), become much stronger. In February 2012 the Anel party sprang out of the parliamentary group of the ND party. In other words, not one, but several populist parties became stronger or emerged in Greece in the wake of the economic crisis.

Briefly, the GD party, emerged out of a former neo-nazi organization that had been established in 1985. In parliamentary elections up to the start of the economic crisis (2009), the party used to obtain a negligible percentage share of votes. Yet It became the 3d largest party in Greek parliament in the two elections of 2015 (in January and September 2015). In

detail, the GD increased its share of the total vote from 0.3 percent in 2009 to 7 percent in the elections of 2012 and 2015. It elected 3 MEPs to the European Parliament in 2014 and 2 MEPs in 2019. However, the party's electoral influence declined in the parliamentary elections of 2019, as the GD party leadership had been implicated in a political assassination of a Greek radical left rap singer in 2013. (In 2019 the GD party was unable to obtain enough votes, i.e., 3 per cent of the total, to enter the Greek parliament.) The political discourse of GD was far right and populist. Typically, it was strongly illiberal, anti-elite, anti-semitic, and anti-EU discourse (Ellinas 2013, Vasilopoulou and Halikiopoulou 2015, Dinas, Georgiadou and Konstantinidis 2016, Tsatsanis, Andreadis and Teperoglou 2018).

After splitting off from the ND in 2012, a group of nationalist MPs formed the Anel party which obtained 11 percent of the vote in parliamentary elections of 2012, but declined to 3 percent in the European Parliament elections of 2014 and to 4 percent in 2015. After staying in power in 2015-2019, as a junior coalition partner to Syriza, the Anel obtained less than 1 percent of the vote in the European Parliament elections of 2019 (with the result that the party suspended its participation in the national elections of July of the same year). The bridge which connected, so to speak, the radical left Syriza with the nationalist right Anel was a set of common populist themes in their discourse, such as anti-elite and Eurosceptic themes. Another major theme was fierce rejection of the austerity-informed MoUs of 2010-2014, which was reflected in the congruent anti-austerity and Eurosceptic opinions of MPs of the two political parties (Tsirbas and Sotiropoulos 2016) and in the relatively small distance of opinions of the voters of the two parties on economic policy issues (Andreadis and Stavrakakis 2017).

Moreover, the Greek party system underwent a dramatic change (Table 4, below). In the two, consecutive parliamentary elections of May and June 2012, the two largest Greek parties, witnessed a dramatic fall in their electoral performance. Between them, the ND and Pasok had obtained 77 percent of the vote in September 2009. Almost three years later, in the elections of May 2012, the vote share of the two parties taken together was just 33 percent.

Meanwhile, Syriza, which in September 2009 had obtained less than 5 percent of the vote, rose to 17 percent in May 2012 and to 27 percent in June 2012. The ND party somewhat recovered in 2012-2015 and stabilized at the level of 28-30 percent. Pasok, on the other hand, which had reached 44 percent of the vote in September 2009, fell to just below 5 percent of the vote in the elections of January 2015, i.e., the elections which ushered in the rule of Syriza in government coalition with the Anel (2015-2019). The earlier polarization between ND and Pasok was then supplanted by a new acute polarization between ND and Syriza (Table 4).

Table 4. The impact of the economic crisis on the political party systems of Greece and Portugal

	Pre-crisis elections (2009)	First elections during the crisis (2011 - 2012)	Second elections during the crisis (2015) (two elections in Greece, June and September 2015)
Greece, winner of elections	Pasok	New Democracy	Syriza
Parties who came 2n, 3d and 4th in Greek elections	New Democracy, KKE, Laos	Syriza, Pasok, Anel	New Democracy, Golden Dawn, Potami (Pasok came 4th in Sept. 2015)
Portugal, winner of elections	PS	PSD	PSD
Parties who came 2n, 3d and 4th in Portuguese elections	PSD, CDS-PP	PS, CDS, PP	PS, BE, PCP

Source: author's own elaboration, based on electoral results

By contrast, in Portugal party system change was not as dramatic (Table 4). While, as already noted above, in Greece there was the parallel rise of right-wing and left-wing populism, populism held no allure for Portuguese political parties. In Portugal there were no parties corresponding to Anel or GD. The rise of a strong radical left party (Syriza), which espoused left-wing populism was not paralled by a similar tendency in Portugal. In the latter country, the electoral performance of radical left party (Bloco - BE), which was not populist, was remarkable but not as spectacular as Syriza's in Greece. The Bloco doubled its vote share from 5 percent in the parliamentary elections of 2011 to 10 percent in the corresponding elections of 2015. The socialist party (PS), on the other hand, increased its electoral influence in 2015, by obtaining 32 percent of the vote (as contrasted to 28 percent four years earlier), but did not resort to left-wing populism (Fernandes, Magalhaes and Santana-Pereira 2018).

In brief, throughout the economic crisis and its aftermath, populism rose in Greece, but not so in Portugal. The Greek party system imploded, whereas the Portuguese one remained more or less stable. In the Greek case, there was change of the party system. By contrast, in the Portuguese case there was change within the party system. The reasons for this difference are discussed further in this chapter.

11. The political profile of the parties in government in Greece and Portugal in 2015-2019

Syriza, the major government coalition party in 2015-2019 in Greece, is a radical left-wing party with a definitely populist profile, albeit a left-wing one (Stavrakakis and Katsambekis 2014, Katsambekis 2016, Tsakatika 2017). The party had no government experience before ascending to power in 2015. While in opposition, the party had very few or no ties to traditional social interest groups, such as workers and farmers. It was strongly represented among the student movement, the anti-globalization movement and various human rights movements. After 2010 the party's influence grew among the young, the unemployed, artisans and craftsmen and even liberal professions, as a result of Syriza's strategy to indiscriminately support all anti-austerity protests. Syriza was also very influential among public sector employees, as it sought to fight salary and pension cuts and all public sector reforms of the 2010-2014 period.

It was on the shoulders of such social groups, as well as through the support of a plethora of other small groups defending their market niches (pharmacists, taxi drivers, and others), that Syriza rose to government in 2015. In other words, the party became very influential among employees and pensioners of the public and private sectors and among small businessmen and professionals. Syriza had promised to the former a restoration of their pre-crisis salaries and pensions and to the latter a return to the pre-crisis production and market regulations, suitable to their business interests.

However, in contrast to the Pasok and ND parties, Syriza never managed to have but only a minimal presence in Greece's labor union confederations, namely the GSEE representing the employees of private sector companies and privatized state-owned enterprises, and the ADEDY representing the civil service unions (Sotiropoulos 2019). With the possible exception of two regions (Attica and Crete) and some municipalities, Syriza never managed to establish substantive roots in local government either.

The contrast with the PS in Portugal could not be starker. The PS, which has led a coalition government since November 2015, is more or less a typical European socialist party (Magone 1999, Costa Lobo and Magalhaes 2004), and still has ties with labor unions and municipal councils. More concretely, since the mid-1970s the PS has moved to the center space of the Portuguese party system and is supported by middle class voters (Lisi 2013: 309). The party has long-term experience in government in 1995-2002 and again in 2005-2011, heading majority or minority governments. Since the late 1970s the PS has relied on local party cells and shop-floor party cells and has retained close ties with the UGT labor confederation, which it and the PSD had helped establish. During the evolution of the crisis in Portugal the ties between the PS and PSD on the one hand and the UGT on the other became strained (Razzuoli and Raimundo 2018), but there was no direct clash between government and unions of the kind which Greece experienced in 2010-2014. Strikes subsided after the PS rose to power in 2015.

In the winter of 2018-2019 the PS faced a large wave of strikes in the public sector. It included protests by nurses, fire fighters and police officers demanding not only better salaries, but also improvement of public infrastructure which was decaying after the PS had curtailed expenditure on public investment.

12. Populists in government and liberal democracy: the case of Greece

It turns out that not only the political profile of the two left-wing parties, the PS in Portugal and the Syriza in Greece, was different, but their comportment in power diverged a lot, as – in contrast to the PS - Syriza talked and acted in a populist manner. As it is well known, populist discourse thrives on pitting the people, represented by a populist party or leader, against an economic oligarchy or a political establishment (Mudde 2004 and 2017). For example, in September 2013, three years after the imposition of austerity measures, the Syriza leader, Alexis Tsipras, couched his opposition against the then coalition government of ND-Pasok in terms of the motto "either us or them" (speech of Alexis Tsipras in Thessaloniki, 07.09.2013, *He Avgi* newspaper). Tsipras won the elections of January 2015, called snap elections in August 2015 and in the electoral campaign of September 2015, he attacked the oligarchy and told his supporters that "either we finish them off or they finish us off" (speech of the then PM Tsipras in Syriza's rally on 13.09.2015 in Keratsini, Pireaus).

During electoral campaigns populists make promises to popular strata which they falsely believe that they can hold or make such promises even though they know that they cannot keep them. Syriza, for example, was a typical example of a populist party diffusing false promises, as the party overpromised, but seldom delivered (Mudde 2017).

While these are well-known traits of populism, they do not cover the behavior of populists after their ascent to power. Once in government, populists employ the same inflammatory political discourse against institutions, such as the judiciary, civic associations and mass media. Actually, a sometimes neglected, but major, trait of populism is anti-pluralism (Mueller 2016). For populists, a plurality of non-controllable institutions is an unacceptable situation to be fixed. Populists in power may attempt to overturn the delicate balance of powers among the executive, the legislature and the judiciary, as they adopt a plebiscitarian rather than a liberal concept of democracy.

For example, the Syriza-Anel government launched a national referendum on the European Commission-drafted bail-out package under negotiation with Greece in July 2015. It also passed a new law on local government in 2018 which provided for referenda at the municipal level. Through this new law the Syriza-Anel government also wanted to weaken the decision-making powers of mayors and to make them hostage to shifting coalitions of elected members of municipal councils. This strategy was partly fruitful in the local government elections of May 2019 in Greece when, because of the new law, mayors were elected in a two-round majoritarian electoral system, while municipal councilors in a one-round

proportional representation electoral system. As result, in many cities elected mayors did not command the majority of votes in municipal councils. Syriza considered these institutional changes in local government as expressions of its own understanding of democracy.

A populist party in government may claim that above all, if not exclusively, democracy signifies popular sovereignty; and that this party has been elected to represent and lead the people on its own. If democratic institutions and constitutionally guaranteed principles lie in its way, the populist party may attempt to brush them aside, starting with the media and the justice system.

Populist control of the mass media

The mass media is a usual target at which populists aim. Other non-populist governing parties may of course do the same, to the extent they can control the state-owned media. In post-authoritarian Greece (1974-2014), before the rise of Syriza to power in 2015, the public broadcaster (*ERT*) was targeted by successive governments, regardless of their center-right or center-left profile, as control of the state media was considered necessary for government propaganda. In 2013 the *ERT* had been abruptly closed down by the ND-Pasok coalition government. One of the first moves of Syriza, after it had arrived in power in 2015, was to re-open the public broadcaster and transform into a government mouthpiece. Where Syriza differed from previous parties in power, was in the treatment of the private media. Throughout the post-1974 period, different newspapers and private TV and radio channels were heavily involved in party politics and took the side of various political parties in Greece. In the summer of 2016, the Syriza-Anel government decided by fiat to allow for the existence of only four private nationwide TV channels. Eventually it backed down from this typically populist government policy in late 2016, when Greece's supreme administrative law court, the Council of the State, declared the measure to be unconstitutional. In 2017-2019 Syriza continued to exert pressure on private media critical to its government, by openly targeting the harshest anti-government critics among journalists and by allowing government ministers to sue unfriendly newspapers on various defamation charges, with the help of pro-government prosecutors.

Populist control of the judiciary

In Greece the Cabinet selects and appoints the Presidents and Vice Presidents of the supreme courts and highest prosecuting authorities from a list of higher-ranking judges. Before the rule of the Syriza-Anel coalition government, governments of the center-right and center-left used to appoint government-friendly judges, but the aforesaid populist government coalition went a step further. It appointed pro-government judges and prosecutors at the highest ranks of the judiciary and used them to prosecute unfriendly private media and the parliamentary opposition. Moreover, the government constrained independent authorities by appointing

pro-government judges as heads of the General Inspectorate of Public Administration in February 2017 and the Financial Crime Unit in May 2017.

It is noteworthy that even the government-appointed President of the supreme civil and criminal court (the *Areios Pagos* court) sued a constitutional law professor the opinions of whom she had found insulting. Government-appointed judges put through trial the former head of Greece's statistical service (the *ELSTAT*) who had helped consolidate the collection and presentation of statistical data on the country's economy, after the first Memorandum of Understanding (MoU) of 2010 was rolled out. (He was falsely accused of having inflated the statistical figures indicating the size of Greek public debt and budget deficit – which were the already checked and Eurostat-approved figures).

In 2015, after the Syriza-Anel coalition government was formed, anti-corruption competences were taken away from an earlier established "anti-corruption coordinator" and assigned to the new General Secretariat of Anti-corruption (the GEGKAD). Anti-corruption mechanisms were thus placed under the supervision of a government Alternate Minister of Justice. Under his guidance, the Ministry of Justice and the government-controlled prosecuting authorities launched in February 2018 a criminal investigation against two former prime ministers and eight ministers, who were either MPs of the opposition parties (ND and Pasok) or members of previous governments before Syriza's ascent to power in 2015. Eventually, owing to shallow evidence and haphazard legal preparation of the case by the government, the investigation fell through. The alleged involvement of various ND and Pasok officials in corruption notwithstanding, it is telling that in 2015-2019 anti-corruption investigations were limited to government officials of the pre-2015 period.

Populist control of the public sector

In Greece, political patronage has been rampant for many decades, while center-left and center-right governments used to appoint governing party officials at the highest-ranks of the public bureaucracy and party supporters at entry-level jobs of the public sector, usually on fixed-term or temporary posts. Patronage was typical of previous populist governments in power, such as Pasok in the 1980s, as well as other, center-right and center-left governments (Sotiropoulos 1996). In other words, non-populist parties had used patronage in the past, but patronage appointments were curbed in the first-half of the 2010s under pressure from foreign creditors. However, upon coming to power, the Syriza-Anel government expanded on patronage practices of the past (Tables 5 and 6 below), in a probably misguided effort to decrease unemployment and poverty through staffing the public sector. This policy choice was combined with very high tax increases imposed in 2015-2019 om middle- and upper-income groups, in order to raise government revenue. Such revenue was primarily used to pay for the cost of social assistance programs and new public sector jobs. Under Syriza-Anel rule, unemployment indeed fell to 18 percent in May 2019, after having reached a peak of 28 percent under ND-Pasok rule in November 2013 (Table 3, above). In the meantime, however,

approximately half a million high-skilled Greeks, who did not find any decent employment or did not have the necessary political connections to obtain employment in the public sector, had left the country, seeking employment elsewhere (the phenomenon of "brain drain").

Regarding patronage, there is official data showing that since 2013 there has been an increasing trend in the hiring of political appointees (with a drop in 2015 when two parliamentary elections took place and the government was not stable, Table 5). During the time of Syriza-Anel in government (2015-2019) the number of political appointees rose by 55 percent (Table 5). The absolute numbers of appointees look small (in the order of very few thousands), but such appointees populate a relatively small set of 19 central services of ministries and the state-agencies supervised by the ministries.

Table 5. Change in the Number of Political Appointees at Higher Levels of Ministries in in Greece, 2013-2018

Month Year	Political party (or coalition of parties) in government	Number of political appointees in central services of ministries and state agencies	Annual percentage change over the previous year
April 2013	ND-Pasok-Dimar coalition	1764	(not available)
April 2014	ND-Pasok coalition	1923	+ 8.3%
April 2015	Syriza-Anel coalition	1233	-56.0%
April 2016	Syriza-Anel coalition	2046	+ 39.7%
April 2017	Syriza-Anel coalition	2186	+6.4%
April 2018	Syriza-Anel coalition	2501	+ 12.6%
April 2019	Syriza-Anel coalition	2739	+9.5%
% change 2019/2015			+55%

Source: http://interops.ydmed.gov.gr/month/monthly.php (official site of the Greek government on public employment). No equally reliable data exists before 2013. "Dimar", in the first row of data, was a small, left-wing party. It was in government coalition, along with Pasok and ND, in 2012-2013, but is now dissolved.

Similar phenomena occurred in 2013-2019 in fixed-term or temporary, i.e., non-permanent public sector jobs in the same period (Table 6, below). This is the kind of public sector jobs which are most often filled at the discretion of government officials rather than through

competitive entrance examinations or other transparent channels of recruitment. Compared to 2015, in 2019 the size of such personnel had increased by 34 percent.

Table 6. Change in non-tenured Public Employment in Greece, 2013-2018

Month Year	Political party or parties in government	Number of non-permanent employees in central and local government	Annual percentage change over the previous year
April 2013	ND-Pasok-Dimar coalition	58,390	(not available)
April 2014	ND-Pasok coalition	61,897	+5.7%
April 2015	Syriza-Anel coalition	65,959	+6.2%
April 2016	Syriza-Anel coalition	72,460	+9.0%
April 2017	Syriza-Anel coalition	75,385	+3.9%
April 2018	Syriza-Anel coalition	83,636	+9.9%
April 2019	Syriza-Anel coalition	100,186	+ 19.8%
% change 2019/2015			+34.2%

Source: http://interops.ydmed.gov.gr/month/monthly.php (official site of the Greek government on public employment). Data includes all contract-based, short-term and hourly-paid public employees. No equally reliable data exists for the period before 2013. "Dimar", in the first row of data, was a small, left-wing party. It was in government coalition, along with Pasok and ND, in 2012-2013, but is now dissolved.

Owing to the austerity policies followed after 2010, the hiring of permanent personnel was curtailed in order to help consolidate Greece's public finances. However, successive governments, but also regional governors and mayors, continued to hire non-permanent personnel, sidestepping the *ASEP* authority (an independent public authority established in 1994 to oversee recruitment to the public sector). Under Syriza-Anel government, this clientelist practice reached new heights, as shown in Table 6. By April 2019 (two months before the elections of June 2019) there over 100,000 fixed-term or temporary public employees.

To sum up this section, the parties of Syriza and Anel, which were in coalition government in 2015-2019 in Greece, have followed center-left social and employment policies and have contributed to the relative decrease of unemployment rate, for the first time since the eruption of the economic crisis. However, the Syriza-Anel government coalition primarily followed typically populist polices regarding the treatment of political and administrative

institutions and more specifically the treatment of the mass media, the judiciary and prosecuting authorities, the central services of ministries and the public sector.

13. Conclusions

This chapter has addressed the question of the rise and rule of populism in Greece in the wake of the economic crisis in the comparative perspective of the Portuguese experience. The chapter first discussed different theoretical approaches to populism. The theoretical argument was that although Mudde's conceptualization of populism as "thin" ideology is perhaps most useful for empirical research purposes, the content of government policies, once populists ascend to power, should also be taken into account.

The question why populism emerged, thrived and eventually ruled in Greece in the 2010s, but not in Portugal, was answered through three different contributing factors. First, compared to Portugal, in post-authoritarian Greece (1974-today) there was much less political inclusion. Democratic practice in Greece was replete of excluding political and social actors. Second, compared to Portugal, in Greece there has been a very long tradition of political culture of resistance against the state and a much lower trust in democratic political institutions, such as the government, the parliament and political parties. And, again compared to Portugal, since 1974 in Greece there has been more acute and persistent party system polarization. Even during the economic crisis which had a heavy impact on the party system, in Portugal change occurred *within* the party system. By contrast in Greece there was party system collapse, i.e., change *of* the party system.

To recap, in Greece there have been long-term legacies of populism, dating back to the 1980s. Legacies of political culture and state-society relations have also been conducive to the rise of populism, once the economic crisis erupted in 2010. The causes of the economic crisis in Greece (2010-2018) should be searched in a combination of external factors, such as the global economic crisis of the 2008 and the built-in asymmetries of the Eurozone, with domestic factors, such as long-term mismanagement of the country's public finances.

The economic crisis proved to be a critical juncture, a catalyst which sparked the rise of populism in Greece, but not in Portugal. While the crisis in Greece was more severe than that in Portugal and international lenders monitored Greek decision-makers much more closely than their Portuguese counterparts, in the two countries there was a reform convergence, based on strict austerity policies. However, the cases of Greece and Portugal became visibly different.

In contrast to Portugal, from the beginning there was an outright rejection of austerity in Greece, and there was a rise of left and right populist parties in 2010-2014 in the Greek party system. In Greece there were legacies of incomparable party system polarization: the acute

competition between the Pasok and ND parties until the break out of the crisis was replaced by an equally or more acute competition between Syriza and ND in the wake of the crisis. In 2012 the party system in Greece collapsed, leaving very little room for convergence, let alone consensus, over the management of the crisis. By contrast, in Portugal the party system changed without undergoing a complete overhaul.

In both countries, as in the rest of Southern Europe, political trust was in decline before the onset of the crisis. However, in Greece trust towards the parliament, the government and the political parties dipped much more dramatically in 2010-2015.

Moreover, the political profile of the governing parties, the Syriza and Anel parties, which ruled in Greece in 2015-2019, was very different than the party, the PS, which governed in Portugal after 2015. In contrast to Portugal, where the PS party followed a mix of economic growth-friendly policies and respected checks and balances among institutions, in Greece the governing coalition of Syriza-Anel may have countered some of the negative social effects of the economic crisis, but primarily proceeded with typical populist policies. Such policies included attempting to control the mass media, to intervene and constrain the justice system, to recruit groups of political supporters into the public sector and to populate the public administration and state agencies with its own political appointees.

In view of the above, regarding the theoretical study of populism in today's Europe, open questions requiring further research remain. Two such questions are, first, to what extent populism in power, by implementing concrete policies of control over liberal democratic institutions, becomes something thicker than what the concept of "thin" ideology would admit; and, second, to what extent populism contributes to enhancing political inclusion or not.

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Chapter 12. Fiscal Institutions and the Monitoring of Public Finances: The Case of Greece

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Abstract

The lack of effective fiscal institutions and the weak monitoring of public finance developments in Greece has been a major cause of the fiscal crisis that broke out nine years ago. This paper explores aspects of the weak institutional framework that did not prevent fiscal derailment even within the context of EU fiscal rules. As a result, the efforts to build up institutional capacity on the fiscal front in recent years is one of the main challenges ahead. A deeper understanding of the Greek case against valuable experience on the quality of fiscal institutions and monitoring, particularly in the European Union, is crucial in order not only to prevent unsustainable fiscal deficits in the future, but also to support a more efficient allocation of resources in the public sector, and to enhance accountability and democratic control.

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1. Introduction

The recent global financial crisis has brought forward in the most vivid way the multiple aims that fiscal policy has to reconcile. During the crisis, fiscal policy emerged more forcefully as a key instrument of macroeconomic management, with major stimulus packages being adopted by several advanced countries in order to avert a prolonged depression in economic activity. At the same time, a fiscal framework has to ensure the long-term sustainability of public finances and, therefore, should not accommodate ever increasing levels of public debt. Finally, such a framework has to reflect political priorities being shaped by democratically elected governments accountable to citizens and tax-payers.

The European Union fiscal framework has even further challenges to meet, since one of its primary additional aims has been to serve as a means of avoiding spillover effects from policy actions in one country to another in the context of the supranational currency union. Adherence to sound fiscal policy was thus given top priority and the Stability and Growth Pact included a range of fiscal rules which were meant to be respected by the members of the currency union. However, neither the preventive nor the corrective arm of the Pact seem to have been effective in preventing serious fiscal imbalances in many member states especially during the crisis. Against this background, the European fiscal governance framework has been successively reformed since 2008, but is still heavily criticized on several grounds.

Researchers, analysts and policy-makers gradually realize the limits of tools once central to the European fiscal governance architecture. The design and implementation of national and supranational fiscal rules, of medium-term fiscal frameworks and fiscal institutions are all under scrutiny, while the debate on how best to monitor public finances in the EMU context is center-stage and far from conclusive.

The record of Greece in monitoring public finances over the last few decades has not been successful. In the 1990s, in an effort to join the European and Monetary Union, Greece made a major effort to reduce fiscal deficits and control the rise of public debt. Once entrance in the EMU was secured, this effort lost momentum. The fiscal outlook of the country rapidly deteriorated after the outbreak of the 2007/8 global financial crisis. The financial markets' reaction to the perceived threat of sustainability brought the cost of financing to prohibitive levels and the government resorted to financial assistance jointly provided by the International Monetary Fund and the European Union. In exchange, the Greek governments undertook a number of commitments, including among others, major cuts in public expenditure, considerable increases in tax rates and a broad range of structural reforms. Some of these reforms meant to address the weak domestic fiscal governance framework, which underwent a complete overhaul.

Despite the fact the last bailout program followed by Greece officially ended in August 2018, the efforts to build up institutional capacity on the fiscal front in the years to come is one of the main challenges ahead. The country is now being integrated in the European Semester Policy Framework, while the Eurogroup decision of 21 June 2018 provides for enhanced post-

program surveillance and conditionality, whereby among others, Greece is committed to run sizeable primary surpluses for many years to come.

Against this background, fiscal monitoring in Greece has to foster reforms that strengthen the domestic fiscal governance framework, since the weak institutional framework has been one of the root causes that did not prevent fiscal derailment in the past (Kaplanoglou and Rapanos, 2013). As a result of external pressure, Greece has already begun reforming almost every aspect of its fiscal governance framework, but policy making can still benefit from good practices accumulated by international experience. A deeper understanding of the Greek case against valuable experience on the quality of fiscal institutions and monitoring, particularly in the European Union, is crucial in order not only to prevent unsustainable fiscal deficits in the future, but also to support a more efficient allocation of resources in the public sector and to enhance accountability and democratic control. At the same time, the European fiscal governance framework is itself under severe criticism and constantly evolving. Therefore, the domestic policy dialogue should be informed of the relevant issues at stake.

The present paper addresses the main challenges of fiscal monitoring both at the domestic and the European level and is structured as follows. The next section briefly reviews the literature on effective fiscal monitoring, drawing on international experience and the rationale of rules governing the European fiscal framework until the 2007/8 global crisis. The third section highlights the weaknesses of the Greek institutional framework that paved the way for the 2009 fiscal crisis and the main reforms already or pending to be introduced in this framework as a result of external conditionality. Section 4 focuses on the multiple reforms introduced in the EMU fiscal monitoring framework in the aftermath of the global financial crisis and rescue programs to various member states. Section 5 summarizes the main points of criticism of this framework and offers a review of the current debate on proposals for further reforms, while the last section concludes.

2. Tools of effective fiscal monitoring and the rationale of the European fiscal governance framework

The need for enhancing fiscal monitoring mechanisms in advanced economies governed by democratic regimes has essentially been brought about by the stylized fact that fiscal deficits are emerging in a persistent manner over long periods of time leading to high and occasionally unsustainable levels of public debt. An extensive literature has tried to address the key question of why governments exhibit such a tendency to create fiscal deficits (the “deficit bias” problem) and what mechanisms could deter this behavior. Most reasons that have been proposed lie in the public choice literature and include the “common pool” problem, the tendency of governments to depart from the long-run interests of the society for short-term gain, electoral popularity and sectional interest, or the information asymmetry between the executive and the legislature (see among others, Shepsle and Weingast, 1981, Rogoff, 1990,

Tabellini and Alesina, 1990, von Hagen and Harden, 1995, Schick, 2002, Krogstrup and Wyplosz 2006, Krogstrup and Wyplosz, 2010, Wren-Lewis, 2010, Reinhart and Rogoff, 2010 and Rogoff and Bertelsmann, 2010). The rapid rise of public debt levels in many advanced countries during the 2007/8 global financial crisis was perceived as one more manifestation of the deficit bias phenomenon, whereby governments had not taken advantage of the long economic upturn that had preceded the crisis to improve their countries' fiscal position. On the contrary, as Hagemann (2011) notes 'the overall fiscal balance of OECD economies, as well as in the large majority of its member countries, was in deficit throughout virtually the entire three decades to 2007'.

Moral hazard considerations are thought to aggravate the deficit bias problem in the case of monetary unions, like the EMU. Assigning the right of monetary policy conduct to a supranational body reduces governments' incentives to exercise fiscal discipline (Beetsma and Bovenberd, 1999). At the same time, the elimination of exchange rate risk implied by a monetary union renders government bond markets close to perfect substitutes. The high degree of bond yield convergence, of the type observed in the initial stage of the euro area, means that interest rates rise less in response to a single government's expansionary fiscal policy than this country's domestic interest rate would have responded in the case of autarky. With reduced marginal long-run costs of profligate fiscal policy, each government has an additional incentive to expand its domestic fiscal policy in the monetary union. This brings about the need of some form of coordination that would limit spillover effects (Detken et al, 2004).

In response to the "deficit bias" problem, an expanding literature has emerged on how to design a framework for fiscal governance that helps contain the tendency of policy makers for excessive deficits. The main mechanism implemented in most OECD countries is the imposition of various forms of fiscal rules, such as numerical limits to the level of public expenditure, the debt-to-GDP ratio, ceilings or floors to public revenues or the overall level of deficit (for a comprehensive review, see IMF, 2009). Medium term budgetary frameworks (MTFBs) have been proposed as another element of effective fiscal governance. Such a framework allows the government to delineate its policy in a medium-term horizon, under the premise that in each year's annual budget many adopted measures have budgetary implications for the budgets of the following years. MTBFs are usually based on a macroeconomic scenario, like projections for GDP growth, which describe the available government resources in the medium-term to finance policies. Although the objectives included in the MTBF are a weaker form of commitment than a numerical rule, they are considered useful in making more apparent the impact of current policies in the future. In recent years, the idea of establishing non-partisan public bodies acting as "national watchdogs" in the field of budgetary policy is fastly gaining ground as a way of institutionally strengthening domestic fiscal frameworks (see van Riet, 2010 and European Commission, 2009b). The mandate of independent fiscal councils can be indeed broad, ranging from assessing government forecasts on macroeconomic aggregates, motoring adherence to numerical fiscal rules and highlighting possible risks of deviation from the fiscal targets set in

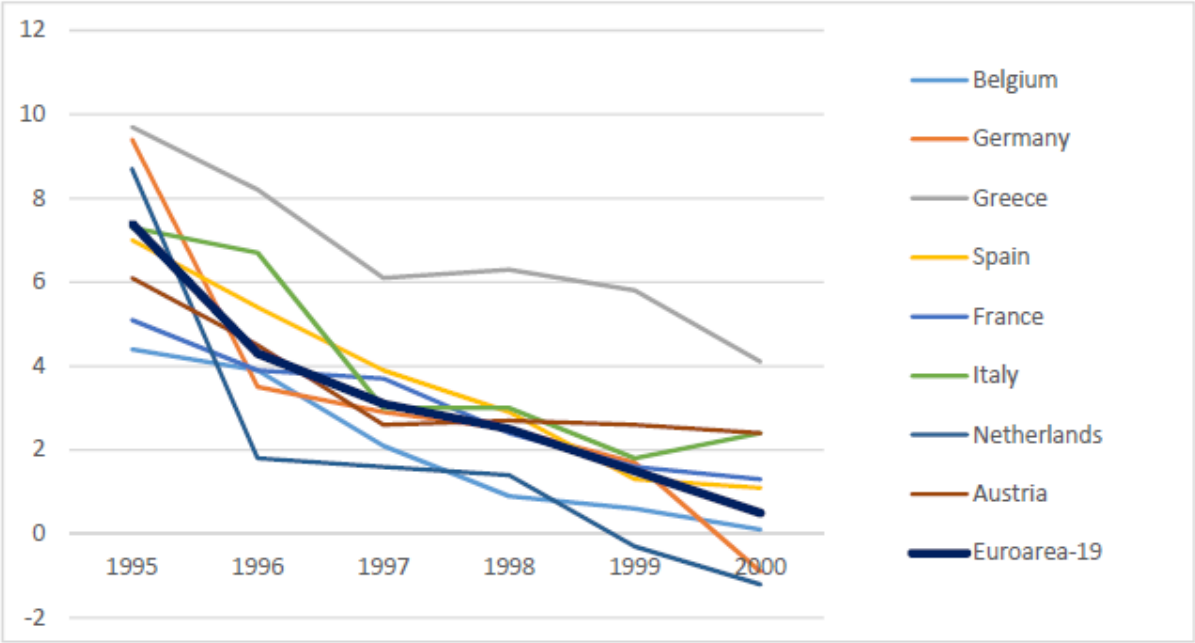
the budget to assessing the long-term sustainability of public finances, and especially public debt. Finally, attention is given to the broader political and administrative framework in terms of domestic budgetary procedures that cover the planning, approval and execution of the government budget process. According to e.g. the European Commission (2009a), basic features of a system of sound budgetary procedures are transparency in data and accounting practices, top-down budgeting realistic economic assumptions, performance budgeting and so on.

The architecture of the fiscal framework in the European Union included right from its inception elements of the effective fiscal governance toolkit described above. Numerical fiscal rules were first introduced for EU countries with the Treaty of Maastricht in 1992 (European Communities 1992, 92/C 191/01, Treaty on European Union) imposing the 3 percent deficit rule and the 60 percent debt-to-GDP ratio. In 1997, these rules were embedded into the newly established Stability and Growth Pact (SPG), whose provisions included both monitoring fiscal developments (through its preventive arm) and correcting excessive deficits (through its corrective arm).

The 3% deficit rule had the clear advantage of being simple and transparent, which was widely believed to help enforcement via market discipline and public oversight (Kopits and Symansky, 1998). In view, however, of its pro-cyclical nature, the SGP was reformed already in 2005, when the nominal deficit target was changed to a cyclically-adjusted one and a medium-term budgetary objectives framework was introduced (European Union 2005, Council Regulation 1055/2005). At the same time, budgetary procedures were being evaluated by the European Commission in a comparable fashion across member states (European Commission, 2007). It is true that the European Union's rules-based fiscal framework worked rather well in incentivizing countries to bring fiscal imbalances under control in view of the common aspiration to participate in the euro-area, as manifested in Figure 1.

Despite making an impressive start in containing public deficits, the European fiscal framework does not seem to have worked equally effectively after 2000, once countries secured their entrance into the Eurozone. The SGP envisaged that member states were expected to have budgets that were "close to balance" or in surplus over the medium term, meaning that surpluses were to be run when the economy was doing well, in order for deficits to be allowed in bad times. In practice, fiscal buffers were not being built in good times and the Pact was prone to procyclicality. Before the crisis, during downturns many euro area countries appear to have responded to the 3% limit imposed by the SPG by offering over-optimistic macroeconomic forecasts when they were most in danger of breaching the limit. Interestingly, what the literature has also established is that the bias in fiscal forecasts was less among Eurozone countries that had adopted certain rules at the national level (Frankel and Schreger, 2013).

Figure 1. General government deficit as a % of GDP, selected countries of the Euroarea



Source: European Commission, Statistical Annex of European Economy, Autumn 2018.

At the same time, the implementation of the Stability and Growth Pact provisions even in cases of clear breaches of its rules was rather lax. Baerg and Hallerberg (2016) criticize the failure of the SGP to prevent the euro fiscal crisis in terms of the ability of the Member States to undermine its operation. Following a political economy perspective, the authors focus on the "preventive" arm of the Pact and measure the variation between the European Commission's assessments of Member States and final ECOFIN's (Council of Economic and Finance Ministers) opinions of the Stability and Growth Programs. The rationale is that although the Commission acts as a "watchdog" to monitor fiscal performance, it is the Council's recommendations that leave governments open to criticism in the public sphere. The authors examine various versions of Member States' assessment, from the original text written by the European Commission to the final text approved by the Council, to detect political factors that facilitated the editing and weakening of the Commission's original recommendations. They conclude that politically powerful Member States (at least as measured by votes in the Council) and Member States with euroskeptic populations were more likely to weaken the Commission's recommendations against them, while small, euro-friendly states (like Greece) also had the Commission's text weakened when the big states were receiving milder EU–level surveillance. The breakout of the 2007/8 financial crisis found most Member States fiscally unprepared. States that adopted fiscal stimulus packages were soon faced with escalating public deficits and debt, other states didn't have enough fiscal space to run counter-cyclical policies, while several states found themselves in need for financial aid. Greece not only belongs to the last group of countries, but it is also a complete outlier in terms of its fiscal derailment. Although the weaknesses of the European fiscal

surveillance architecture impacted on Greece's fiscal performance, the size and accumulation of fiscal imbalances are also a result of the national fiscal monitoring capacity, to which we now turn.

3. Greece's domestic fiscal monitoring capacity before the crisis and subsequent reforms

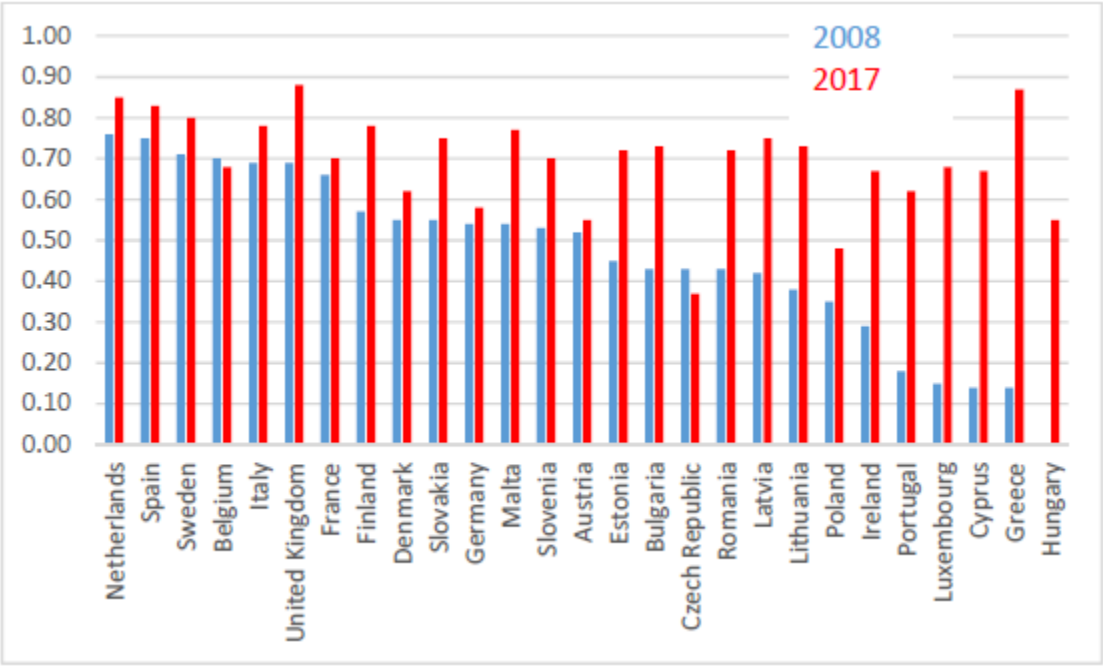
In Greece, the system of budget surveillance and fiscal rules imposed by the 1992 Maastricht Treaty and the 1997 Stability and Growth Pact acted as a catalyst in reducing deficits with the primary aim of becoming a member of the Eurozone. However, the underlying economic, political and institutional factors did not underpin the credibility of fiscal plans. Despite the fact that the Greek economy attained high growth rates throughout the decade preceding the fiscal crisis in 2009, fiscal imbalances were never effectively brought under control. Many explanations can be put forward to explain high deficits, but the most fundamental reasons lie within the weak domestic institutional framework of fiscal governance. A detailed analysis is beyond the scope of the present paper[121], but it is worth highlighting the basic weaknesses of this framework.

Perhaps the most important weakness of the Greek fiscal system, even within the EU rules-based framework, has been the poor mechanism of setting up the budget and the lack of any systematic monitoring of its implementation. Regarding legislative control, the Parliament has a very powerful constitutional role in voting the state (central government) budget, but it did not have any kind of mechanism to follow up on budget execution, and to monitor developments in public expenditures and revenues. Data on budget execution were available with long delays, while the fiscal aggregates monitored within the European fiscal framework (general government data) were disjoint from those approved by the Parliament (central government data). The lack of effective legislative control over the budget is also manifested in a study by Wehner (2008), who constructs a composite index of legislative budget institutions, aimed at assessing the budgetary power of national legislatures. The index is based on the institutional arrangements that give the legislature power to scrutinize and influence budget policy and to ensure its implementation. The value of the index depends, among others, on the formal powers of the legislature granted to amend the budget, the flexibility of the executive to alter spending choices following the approval of the budget by the legislature, the time available for meaningful legislative scrutiny, the existence of a well-developed committee system and the access to comprehensive, accurate and timely budgetary information. Greece nonsurprisingly ranks 26th among the 27 OECD countries covered in the study, which suggests that legislator control was a constitutional artefact.

[121] For such an analysis, see, for example, IMF (2006), Rapanos (2007), OECD (2008), Vraniali (2010), Kaplanoglou and Rapanos, (2011).

Despite the drafting of medium-term programs in order to comply with the requirements of the Stability and Growth Pact, the quality of the medium-term budgetary framework at the national level before the fiscal crisis was exceptionally low, at least as judged by the criteria adopted by the European Commission, see Figure 2. The assessment criteria include the existence of such a framework, the connectedness between multiannual and annual targets, the involvement of national parliaments or the monitoring and enforcement mechanisms. The drafting of the medium term Stability and Growth Program apparently did not guarantee its effective operation, since Greece just before the fiscal crisis ranked one but last (see Figure 2).

Figure 2. Index on the quality of medium-term budgetary framework in EU Member States, 2008 and 2017

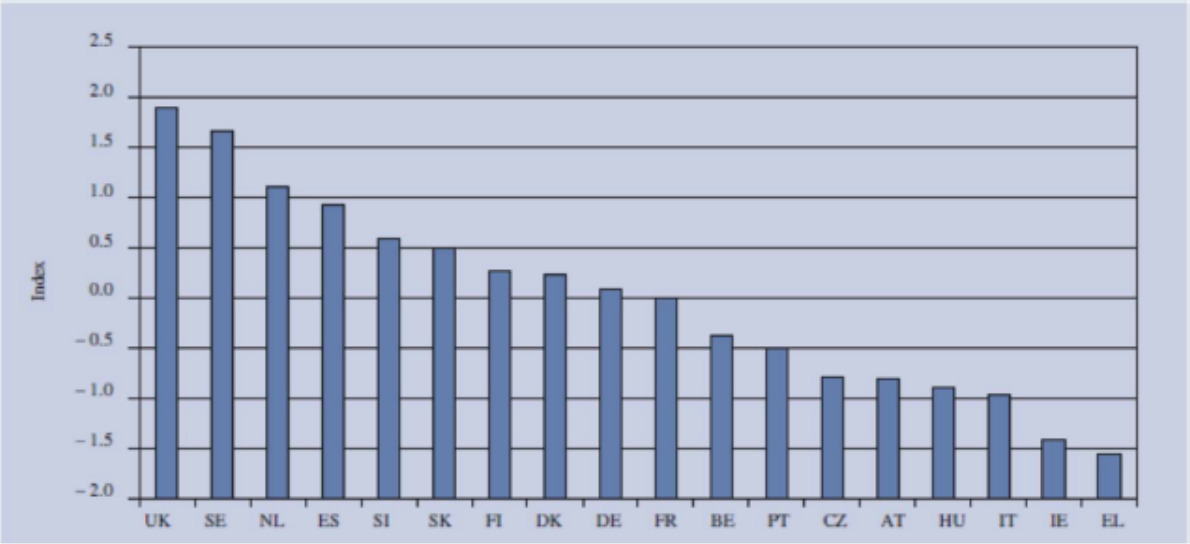


Source: European Commission, Database on Medium-term budgetary frameworks (available at https://ec.europa.eu/info/business-economy-euro/indicators-statistics/economicdatabases/fiscal-governance-eu-member-states/medium-term-budgetary-framework_en)

Figure 3 presents another index developed by the European Commission to evaluate the quality of budgetary procedures identified in the previous section which cover the planning, approval and execution of the government budget process. This overall index incorporates a number of sub-indices that refer to: budget transparency, multi-annual planning horizon, centralization of the budget process, top-down budgeting, prudent economic assumptions and performance budgeting. The scores of the index for a number of EU countries are presented in Figure 3, where Greece ranks last.

Transparency in the budget would require systematic and timely releases of budget proposals and budget reports, comprehensive and accessible budget documentation, economic assumptions on forecasts being made explicit and an active role of the legislature and other stakeholders in scrutinizing the budget. Centralization of the budget process and top-down budgeting both aim at containing the "common pool" problem leading to deficit bias. The idea is that a fragmented budget involving autonomous decisions made by a large number of participants can lead to excessive spending. Centralizing the budget process by delegating budgetary power to e.g. the Finance Minister and to start the budget planning procedure with a binding decision on the total amount of the budget (top-down budgeting) can reduce upward pressure on spending. Once hard ceilings on the total budget are set, the detailed allocation of resources within sub-areas is to be left to the line ministers, so that the ownership and more efficient use of funds is strengthened. Making prudent macroeconomic assumptions to build budgetary projections is also considered a critical factor in the budget process, so as not to justify a higher level of spending. Finally, performance budgeting is meant to strengthen the link between resources used and the output achieved, as a way of improving the effectiveness and efficiency of public expenditure.

Figure 3. Overall index of budgetary procedures, 2006



Source: European Commission (2007).

Greece's low ranking in the index of budgetary procedures is easily reconciled. Transparency of fiscal data was hardly possible given the organizational weaknesses of public sector accounting and information systems. Many public entities simply lacked standardized accounting systems, while the General Accounting Office had no coherent on-line information system that would enable it to have an overview of total public revenues and expenditures at any point in time. Furthermore, the budgeting system followed a bottom-up approach, whereby requests were being made by spending ministries without clear indications of

spending ceilings or financial restraints. The Ministry of Finance intervened at all stages of the budget process at a very detailed level, eliminating any sense of ownership of the line ministries budget and weakening their accountability in the management of public funds. Regarding performance budgeting, the control and accountability framework of public expenditure was characterised by a lack of policy objectives, which would assess the quality of expenditure and address money-for-value issues. It rather focused on excessive and overlapping ex ante controls, while ex post controls inclined towards compliance with the legality of procedures (Vraniali, 2010).

Combined with the instability of global financial markets, poor domestic fiscal governance finally led Greece to the brink of financial collapse. As documented in Kaplanoglou and Rapanos (2013), budget balance targets were being missed by a wide margin throughout the decade preceding the outbreak of the fiscal crisis in 2009. There is a growing literature aimed at identifying the sources of deviations from fiscal plans, which identifies the strategic use by governments of optimistic growth assumptions as the most frequent economic determinant of fiscal forecast errors (e.g. Jonung and Larch 2006, Von Hagen et al. 2009, Pina and Venes 2011, Frankel 2011, Cimadomo, 2011). For countries operating within the EU rules-based fiscal framework, weaker than expected growth rates often served as a good argument for fiscal outcomes turning worse than planned. This pattern does not fit the Greek case. Despite the fact that the economy did appear to grow in line with what the government (and other international organizations) had assumed, budgeted revenues did not find their way into the public purse, while expenditures (especially primary expenditures) were not kept under planned control. This feature was systematically not being picked up either by the Greek government or by the Commission or by the other two international organizations (the IMF and the OECD) that were monitoring the Greek economy. While the inadequate surveillance within the EU fiscal governance framework is also partly to blame, the primary reason for the fiscal derailment from a fiscal monitoring perspective has been weak domestic fiscal institutions.

The bailout program agreed with Greece's EU partners and the IMF in May 2010 imposed heavy front-loaded austerity policies, which were complemented by broad-ranging structural reforms. The latter included a complete overhaul of the domestic fiscal governance framework with the aim of aligning it with what was described above as international best practice (see, for example, Rapanos and Kaplanoglou, forthcoming). Numerous reforms in the budgeting framework were introduced by two broad amendments of the Greek Organic Budget Law in 2010 (Law 3871/2010) and 2014 (Law 4270/2014). The two laws, combined, describe a raw model of procedures and institutions that ensure efficient fiscal monitoring and effective implementation of sound fiscal policies of the type analyzed in the previous section. Although it is hardly possible to go through all the provisions of the laws, their declared aim is to promote sound fiscal governance, namely ensuring the principles of economy, effectiveness, efficiency and accountability.

According to Law 9871/2010, the medium-term horizon of fiscal plans was strengthened through the establishment of a Medium Term Fiscal Strategy which has to be approved by

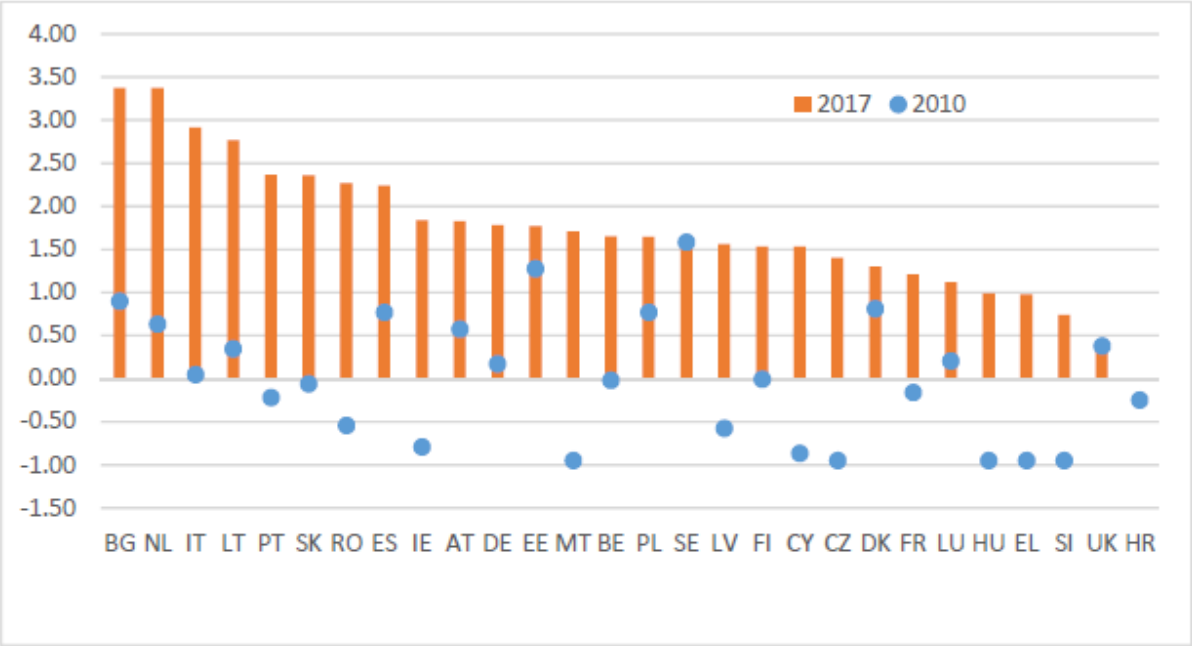
Parliament. The medium term framework sets targets for the fiscal balance and the level of debt of the general government, and for spending ceilings for the state and balanced targets for the budgets of local governments, social security funds and other general government entities. The assumptions underlying macroeconomic and other projections have to be clearly spelled out and be accompanied by sensitivity analysis of upside risks. Top-down budgeting has been introduced, with spending limits being set for State entities. Accountability and budget ownership is thus strengthened, while the oversight role of the Ministry of Finance has been expanded and made more effective. Fiscal reporting is also strengthened, since all government entities are required to set monthly and quarterly targets for budget execution, reports are produced regularly. Finally, a Parliamentary Budget Office (PBO) is set up, with the task of monitoring the implementation of the budget and of producing reports to assist the work of two parliament committees regarding the compliance to the targets set in the Medium-term Fiscal Strategy framework. The PBO thus performs part of the role of an independent fiscal institution, as analysed in e.g. van Riet (2010).

Law 4270/2014 enshrines in law all requirements for budgetary frameworks included in the Council Directive 2011/85/EU, which was adopted in order to strengthen national ownership and have uniform requirements as regards rules and procedures forming the budgetary frameworks of Member States. The Directive and the Greek law among others foresee the introduction of complete and reliable accounting practices for all sub-sectors of the general government, the publication of timely and reliable fiscal data, transparency, the production of realistic macroeconomic and budgetary forecasts, the adoption of strong numerical fiscal rules for deficit and debt equipped with well-specified target definitions together with mechanisms for effective and timely monitoring. Finally, law 4270/2014 establishes the Hellenic Fiscal Council, entrusted with the role of providing an independent opinion on the budget proposal and execution, and monitoring compliance with EU fiscal rules and lays down in great detail its responsibilities, its relations with other government entities, the rules for selecting the members of its Board of Directors, etc.

The legal fiscal governance framework in Greece now incorporates both many elements of what is considered best practice worldwide and the requirements of the EU fiscal framework. A full evaluation of the implementation of what is foreseen in law is perhaps too early to make and the evidence is yet sparse. Nonetheless, the quality of the medium-term budgetary framework, as judged by the European Commission, has impressively improved, with Greece being outperformed just by the UK among 27 EU Member States (see Figure 2). The Commission also evaluates the design strength of fiscal rules, in the sense that fiscal rules need to be equipped with the appropriate characteristics within the institutional framework of budgetary policy in order to be effective in containing fiscal imbalances. Characteristics like the legal base, the binding character, the monitoring bodies or correction mechanisms are institutional features that determine whether the fiscal rule will be respected or not. According to the Commission's numerical indicators, Greece ranks very high in terms of the rule covering the primary deficit, but its overall rank among EU countries is low in view of the absence of respectively strong rules for other fiscal aggregates, e.g. debt or public

expenditure. Data availability has also drastically improved, enhancing government capabilities for evidence-based policies, which were clearly missing in the recent past (Spanou, 2018).

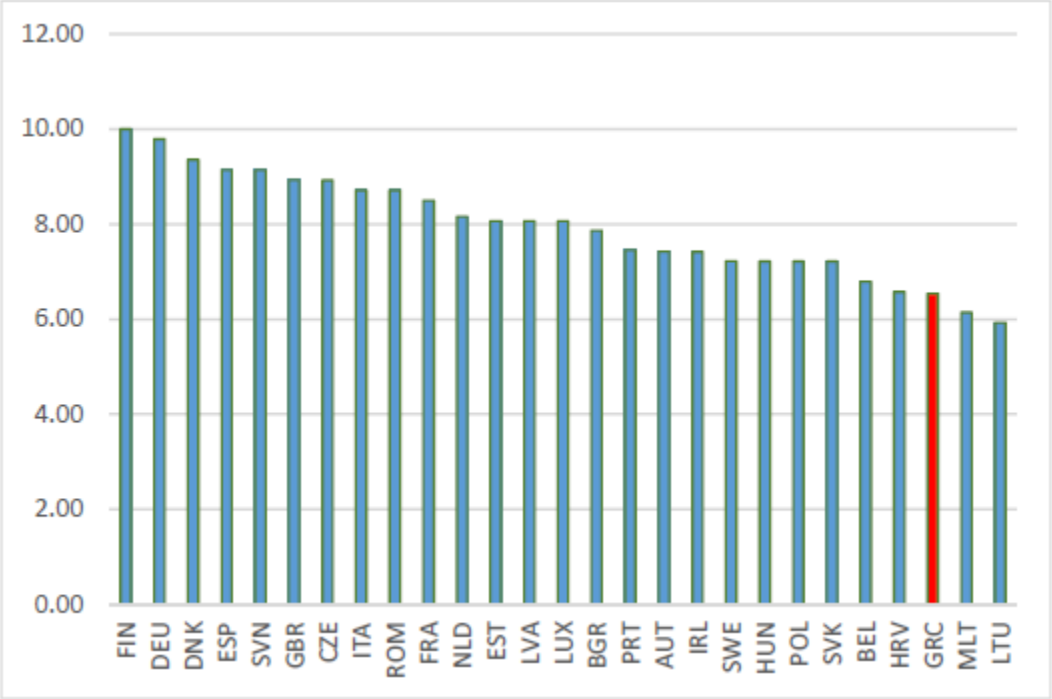
Figure 4. Fiscal Rules Index, by Member State



Source: European Commission, Fiscal Rules Database (available at https://ec.europa.eu/info/publications/fiscal-rules-database_en)

Nevertheless, it is true that institutions and procedures are not easy to reform. To give a few examples, reliable fiscal data rely on the implementation of a comprehensive accounting system for the entire general government. A new single Chart of Accounts is planned to be introduced in the entire public sector (Miliakou et al, 2017), but implementation is not easy and takes time to materialize. In terms of transparency, data based on the extent and quality of public accessibility of the executive's budget proposal presented in Figure 5 show that there is still significant room for improvement.

Figure 5. Index of Budget Transparency in EU countries, 2017



Source: European Research Centre for Anti-Corruption and State-Building, Hertie School of Governance, Berlin (https://integrity-index.org/)

Regarding the operation of the independent fiscal council, the existence of two such councils is perhaps redundant. The Hellenic Fiscal Council does not seem to have gained much visibility despite the fact it receives rather adequate funding, compared to corresponding fiscal councils in the EU (see OECD, 2018). The Parliamentary Budget Office is more active in the public debate, although it is bipartisan (since its members are appointed on the basis of party affiliation) instead of non-partisan (not affiliated to any party) and this partly undermines its presumably impartial role and authority (Anderson, 2009). Nevertheless, the Greek PBO is ranked around the middle among independent fiscal institutions in EU countries according to a set of OECD principles like breath of mandate, access to information, public awareness and relationship with Parliament (Horvath, 2018).

Having officially exited the European Stability Mechanism stability support program on 21 August 2018, Greece is now included in the European Semester for economic policy coordination, while being subject to the enhanced surveillance procedure. The first country report in the context of the 2019 European Semester was published at the end of February 2019 and itself acknowledges that "deep institutional and structural reforms initiated in recent years to modernize the economy and the State require many years of sustained implementation for their impact to fully unfold" (European Commission, 2019). The current EU fiscal governance framework as it emerged from several reforms after the 2007/8 financial and economic crisis sets the boundaries of the supranational fiscal monitoring framework which Greece now has to respect. The evolution of this framework, as well as the debates at

the EU level regarding its effectiveness and limits are crucial to understand and perhaps have not attracted the attention of Greek policy makers and the public at large. These issues are discussed in the next section.

4. The evolving European fiscal governance framework

The fact that the SGP as was reformed in 2005 did not prevent 14 out of 17 euro area countries from violating the deficit rule by 2011, while at the same time the crisis had pushed debt to historic heights, led to successive reforms of the EU fiscal governance framework. The SGP was thus amended in December 2011 with five new EU regulations and one EU directive (the "Six-Pack") designed to strengthen the SGP by including new rules, new and earlier sanctions and additional escape clauses. In 2013 fiscal governance was again strengthened when agreement was reached on the "Two Pack" which added two new EU regulations to reinforce surveillance and coordination for the euro area, reflecting the higher risk of spillovers within the single currency area. Additional commitments were taken by member states through the intergovernmental Treaty on Stability, Coordination and Governance in the EMU, whose fiscal provisions (known as the "Fiscal Compact") transpose elements of the reformed SGP into national legislations. As noted by the European Fiscal Board (EFB) (2018), the current EU fiscal framework is the result of successive legislative reforms coupled with a series of agreements on how to interpret existing provisions.

In order to enhance the clarity of the revised fiscal governance toolbox, the European Commission issues since 2013 a 200-page long yearly document (the Vade Mecum on the Stability and Growth Pact), with the aim of improving transparency about the way the Commission applies the rules of the Stability and Growth Pact. As explained in the latest edition of this document (European Commission, 2018), the amendments aimed at increasing the economic credibility and the flexibility within the rules of the Pact, while at the same time increasing national ownership which seemed to be missing in the provisions of the original SGP. The main reforms include the following:

- Revised fiscal rules in order to better align fiscal targets with the fiscal sustainability objective and to make the rules more flexible. According to the Fiscal Compact, national legislation should include a structural budget balance rule, an automatic correction mechanism to be triggered in the event of deviations from the rule and escape clauses for exceptional economic circumstances. The structural budget balance rule must limit annual structural deficits to a maximum of 0.5 percent of nominal GDP and ensure convergence towards the country's medium-term budgetary objective (MTO) assessed by the European Commission. The Pact also puts renewed focus on public debt, requiring from countries with debt above the 60 percent of GDP limit to continuously reduce their debt levels by at least 1/20th of the distance between the current level and 60 percent of GDP until the latter is reached. Not respecting the debt reduction benchmark becomes a possible trigger of the Excessive Deficit Procedure. Stronger focus on debt was deemed necessary in view of the fact that earlier SGP provisions

regarding just public deficit proved insufficient in preventing debt from escalating and raised serious concerned about debt sustainability. Finally, an expenditure benchmark is also introduced, whereby countries which have reached their MTO are required to keep annual growth of primary expenditure (excluding unemployment benefits) at or below long-term nominal GDP growth. The Fiscal Compact also tries to deal with the problem of past experience that too rigid rules are often disputed or quickly suspended. It thus extends the scope of escape clauses and allows deviations from targets when structural reforms are adopted or investment expenditures are undertaken, provided that these entail short-term budgetary costs in exchange for long-term gains.

- National budgetary frameworks are reformed. The Fiscal Compact requires improvements in the domestic budget institutions, including making medium-term budgetary frameworks more binding (by translating the MTO concept into national law through provisions of binding force and permanent character), preparing budgets in a more top-down sequence and producing frequent, timely and comprehensive reporting on general government fiscal data and risks.
- Surveillance and monitoring are improved. Official macroeconomic forecasts should be either produced or endorsed by a national independent institution which will also monitor compliance with the fiscal rules and the automatic correction mechanisms in case of significant deviations at a national level. More effective surveillance requires not only increasing the intensity of monitoring of budget plans, but also ensuring coordination among member states before these plans are put to national parliaments. All euro area countries must therefore submit their draft budgets to the European Commission to ensure appropriate integration of euro area policy recommendations. If the Commission assesses that the draft budget is not compliant with the SGP, it will issue an opinion to inform the national debate and possibly ask for revisions before it is enacted.
- Enforcement is enhanced. In case of non-compliance with a euro area country with the deficit rule, a recommendation by the Commission is approved by the Council unless a qualified majority of member states votes against it. In this way, sanctions become more automatic, since it is more difficult for the Council to go against the Commission's advice, as has repeatedly happened in the past. Finally, the European Court of Justice can impose a financial penalty up to 0.1 percent of GDP if a country fails to properly implement the legislative changes required by the Fiscal Compact.

Among the many reforms introduced in the European fiscal monitoring framework, one can identify the emphasis placed upon two core elements; the quality of fiscal reporting and the role of national independent fiscal institutions. Regarding the former, improving the quality of the upstream data sources (the accounts of public entities) has been a long-standing issue amidst fears that fiscal monitoring was being ineffective[122]. Good fiscal reporting is a key element of fiscal transparency, without which the Fiscal Compact will not bring about the

[122] Balassone et al (2007), for example, referring to the reliability of EMU fiscal indicators, argued that a detailed analysis of the reconciliation account between deficit and change in debt is crucial to effectively monitoring public finances.

budgetary discipline sought by its designers. In this context, in recent years there has been a growing effort to promote the convergence of accounting standards with the aim of enhancing the international comparability of general government financial statements (Christiaens et al, 2015).

The International Public Sector Accounting Standards (IPSAS) are being promoted as a tool that will complement government accounting systems by focusing on accruals accounting. In the EU, harmonizing public sector accounting at micro level is envisaged to bolster the quality of macro fiscal reporting under the Excessive Deficit Procedure. One of the elements of the Six Pack thus calls for the European Commission to carry out an assessment of the suitability of the IPSAS for EU Member States. The idea is to convert IPSAS into EU regulation to form harmonized European Public Sector Accounting Standards (EPSAS), based on the principles of accrual budgeting and accounting.

Regarding the latter, the literature on the possible role of national independent fiscal institutions (NFIs) is becoming voluminous[123], while there is increasing empirical evidence that one of the factors explaining when countries stick to their fiscal plans is independent monitoring and enforcement bodies (issuing real-time alerts) primarily at a national level (e.g. Beetsma, et al, 2018, Reuter, 2019). Independent fiscal institutions are thought to address some of the presumed causes of deficit bias, including information asymmetry (both between voters and politicians and between the legislature and the executive), economic forecasting bias (of the type identified in Section 2) and time inconsistency produced by the electoral cycle (Viney and Poole, 2018, Debrun and Kinda, 2017). The IMF also places increasing emphasis on the watchdog role of IFIs which are expected to "raise the reputational and political costs of financially irresponsible choices" (Beetsma, et al, 2018). At the supranational level, the advisory European Fiscal Board (EFB) was established with the primal goal of offering a comprehensive and independent assessment of the implementation of the Stability and Growth Pact from an economic perspective. The EFB can make specific recommendations under the rules of the SGP if it sees risks to the proper functioning of the EMU. The EFB together with the newly created horizontal network of national fiscal councils exchange best practices and perhaps could provide the technocratic basis for further fiscal integration in the future.

5. The new EU fiscal governance framework: criticisms and proposals for reform

Despite the fact that the new EU fiscal governance framework has been the outcome of a long procedure which sought to internalize the lessons learned from the financial and economic crisis, it is still subject to harsh criticism, which can be grouped along two major strands. The

[123] See, for example, Rapanos and Kaplanoglou (2010), Wruuck, P. and Wiemer, K. (2016), Beetsma and Debrun (2018), OECD (2019).

first strand is more of a technocratic nature. The design of fiscal rules is inherently problematic, since the three basic properties of "good" fiscal rules, namely simplicity, flexibility and enforceability, cannot be easily reconciled (Debrun and Jonung, 2017). Making the rule flexible (i.e. contingent on a broader set of circumstances), compromises its simplicity and makes it harder to enforce. The more refined the rule, the harder it is to determine whether deviations are justified and the more the rule becomes subject to political manipulations.

As already mentioned, in order to make the rules of the game clear, the European Commission produces an annual document, the Vade Mecum on the Stability and Growth Pact, which specifies various aspects of the implementation of the EU fiscal rules. Although formally strengthened, enforcement remains challenging. The Vade Mecum extends to over 200 pages, clarifying in detail how compliance to numerous potentially inconsistent caps and benchmarks can be assessed. Subsequently, a deviation from the adjustment path towards the medium-term objective may be excused by referring to one or more exceptions, whose number is increasing over time. For example, structural reforms and investment expenditure can be taken into account under certain circumstances, with the aim of facilitating structural reforms that increase long-term growth potential and therefore enhance sustainability in public finances. A positive impact on sustainability is, however, difficult to verify, especially when reforms are in the planning stage and the granting of an exception inevitably comes with considerable discretionary scope. The 2018 Annual Report of the European Fiscal Board itself recognizes that the quest to adjust EU fiscal rules to a complex economic reality has resulted to both rules and processes being made increasingly detailed at the cost of transparency and credibility. The overly complex new EU governance framework may indeed be flexible, but suffers from weak compliance. Darvas and Leandro (2015), for example, show that the implementation of the European Semester recommendations was poor at the beginning of the Semester in 2011 and has deteriorated since.

Furthermore, the problem of pro-cyclicality seems to have remained in the new framework (Darvas et al, 2018). According to Määttänen and Alcidi (2018), at the heart of this problem lies the difficulty to distinguish between cyclical and structural components in economic growth in real time. Although the structural budget balance is a valid theoretical concept, it suffers from large measurement problems. Key variables like the output gap and the structural deficit cannot be accurately measured in real time.

Critics of the technocratic side put forward proposals for further reforming the new EU fiscal governance framework in order to address the main shortcomings of the existing structure. In general, they call for some form of simplification of existing rules in order to enhance implementation. Darvas et al (2018) for example, argue in favor of substituting all existing rules with a rule on public expenditures, which should not grow faster than long term nominal growth, and at an even slower pace in countries with excessive levels of debt. Putting more emphasis on public expenditure rather than the budget balance is a view also shared by the European Fiscal Board (2018), which proposes a ceiling on the growth of primary expenditure net of discretionary revenue measures. Christofzik et al (2018) propose yet another version

of an expenditure rule supplemented by a debt-correction factor. Finally, Debrun and Jonung (2018) put forward the idea of imposing a fiscal Taylor rule, where the only costs of deviating would be strictly reputational.

Some of the proposals additionally argue for further depoliticizing fiscal surveillance, by e.g. transferring the surveillance of budgets and of compliance with the rules away from the Commission to a new specialized independent institution (of the European Stability Mechanism type), so that political influence on budget adjustment requirements is avoided (Deutsche Bundesbank, 2017, European Fiscal Board, 2018). Another proposal along similar lines is to delegate the stabilization function of fiscal policy to national independent fiscal councils, which would set a ceiling for the budget deficit and would be accountable to parliament. Even in the current settings, empowering national IFCs through delegating to them the role of implementing existing fiscal rules, while being coordinated by the European Commission, is a common theme of proposed reforms (Larch and Braendle, 2018). In general, the idea of strengthening national IFCs is attractive among several thinkers, who see these institutions as means of implementing the EU fiscal framework without compromising national sovereignty. These institutions would therefore minimize tensions between fiscal policies at the national level and the joint fiscal governance framework by e.g. raising alarm, encouraging reactions from parliament and educating the voting public and market participants on what constitutes "good fiscal behavior".

The second strand of criticism of the prevailing EU fiscal governance framework belongs to the political sphere. Many political scientists are pointing out that especially after the crisis numerous decisions of lasting consequence are being taken undercutting public debate. Faced with exceptional circumstances, the idea has been implemented that decision making can no longer be exercised within existing legal frameworks and institutional procedures. This is the case of "emergency politics" in crisis Europe, in which actions departing from conventional practice are rationalized as necessary responses to exceptional and urgent threats, "rescue packages" being their most clear manifestation (White, 2015). To take this point even further, the whole deficit-bias theory in effect asserts that politicians cannot be trusted with making the "right" decisions about the economy and that their choices lead to sub-optimal outcomes for the society. In a world where politicians are perceived to be moved by self-interest, those who can claim non-political status can present their judgement as impartial. However, this claim is not necessarily a valid one. As admitted by the Director-General for Economic and Financial Affairs of the European Commission "the coordination (of national fiscal entities) can hardly be organized without some elaborate underpinning framework. And one must also recognize, as a political reality, the attachment within influential constituencies to ordo-liberal settings." (Buti, 2016). Ordo-liberal economics precisely rest on the idea that electoral democracy must be tamed and constrained by the law and through independent and non-majoritarian institutions that will safeguard "sound policies" (Ferrera, 2018).

Transparency International has very recently released a report assessing Eurogroup's accountability (Braun and Hübner, 2019). According to this report, although under EU law

Eurogroup is just a consensus-building organ, in practice decisions pre-agreed by the Eurogroup are adopted by the Council without further debate and therefore it emerges as the executive headquarters of euro area governance. Its role in coordinating fiscal and economic policy among member states has been strengthened by reforms of the EU fiscal governance framework since the crisis, but no proportionate increase of democratic accountability has been ensured. As a result, the EU's "democratic deficit" is widening and so is the gap between populations and leaders at the EU or the national level. This has led some authors to claim that the EU has moved to a stage of post-democracy, whereby the supranational decisions to institutionalize austerity, enforced by budgetary oversight by the Commission, removes alternative policy options at the domestic level (Glencross, 2018). The repercussions on democratic legitimacy and responsiveness are serious. Ruiz-Rufino and Alonso (2018) find evidence that the growing gap in the levels of satisfaction with democracy between bailed-out economies and the rest of the countries in the Eurozone is linked to citizens' perceptions on whether external constrains reduce their government's autonomy and, therefore, democratic choice. Häusermann et al (2018) study electoral turnout in 28 European countries before and after the crisis by education level and show that electoral turnout among highly educated citizens in crisis countries has strongly declined during the crisis. The authors claim that when these citizens see that governments are severely constrained, they anticipate that the hands of future governments will be tied and abstain from elections. A more general impact is the rise of the appeal of anti-system parties.

This problem has been particularly acute in the Greek case. The adjustment programs were an opportunity to push through hard constrains, since even recently adopted EU directives were immediately included as conditionalities in the programs, no matter their relation with the crisis challenges (Spanou, 2018). Hard austerity policies and reforms which gravely affected people's lives were imposed with the Parliament being side-lined, eliminating any sense of legitimacy or national ownership of policies. The political consequences have been a sharp decline in voter turnout (from 74 per cent in the elections of September 2007 to 56 per cent in the elections of September 2015), five parliamentary elections only in the 2009-2015 period and the rise of political radicalism (Sotiropoulos, 2019). If we accept that stronger EU fiscal governance has not been accompanied by concomitant increase in accountability, there is an apparent problem of democratic legitimacy and a need to reform the framework in order to enhance democratic oversight. Thus, according to this view, further empowering institutions like the European Fiscal Board, would create further legitimation challenges on normative grounds (Begg, 2016). However, enhancing democratic control is a knotty issue since the elected bodies, namely the European Parliament and the national parliaments, appear to have a rather limited role in the process. Ultimately the question becomes one of the kind of balance between risk control and risk-sharing within the EU. Hard rules and depoliticized fiscal monitoring are backed by those who believe that risk must be reduced in a stable monetary union. Promoting democratic oversight and perhaps more active fiscal policies supported by additional fiscal capacity at the EU level is backed by those who believe that risks need to be shared in order to achieve more balanced growth trajectories throughout

the Union (Begg, 2018). The debate has strong supporters on both sides and is far from conclusive.

6. Conclusions

Ineffective fiscal monitoring due to weak domestic fiscal institutions has been among the root causes of Greece's severe fiscal derailment of 2009. Expenditure overruns and revenue shortfalls were being built up for more than a decade before the outbreak of the fiscal crisis, with no effective alerting mechanism in place. Since 2010 and as a result of external conditionality, on top of severe front-loaded fiscal consolidation measures, Greece proceeded with a complete overhaul of its domestic fiscal governance framework, enshrining in law both what is perceived as best practice in institutions and procedures and what is envisaged in the evolving EU fiscal governance framework. In this respect, the domestic legal framework promotes effective fiscal monitoring, not only in terms of avoiding "fiscal surprises" in the future, but also even more importantly in terms of improving transparency and supporting a more efficient allocation of resources in the public sector. Having the legal framework in place does not guarantee automatic results. It therefore remains an ongoing challenge to further improve the institutional capacity of implementing beneficial policies.

Furthermore, since Greece is now included in the European Semester for economic policy coordination, Greek policy makers have a lot to gain from closely following the European debate on further reforming this framework, which is being under attack from several fronts. Advocates of institutionalized fiscal discipline argue mainly in favor of further depoliticizing fiscal monitoring and assigning more power to non-political domestic or supranational fiscal institutions. However, it is becoming increasingly clear that credible commitment by governments at the international level presupposes political legitimacy at the domestic level. In democratic regimes, the latter presupposes that commitments may be modified or altered through political processes (Bellamy, 2015). During the crisis and in order to satisfy the European policy making agenda, several European governments (with Greece being an extreme example) have endorsed policies that were seen by the public as being imposed by unaccountable bodies. This has weakened trust in government. Not surprisingly, according to Eurobarometer data, the percent of citizens who trust their national government in Greece has plummeted to almost one-digit levels since 2010, while the respective EU-average has never returned to pre-crisis levels. This is no good news even for the advocates of strict fiscal discipline, since there is evidence that a rules-based fiscal framework aimed to anchoring expectations of responsible fiscal policies may have a greater chance to emerge and survive in countries with public trust in governments and the rules (Debrun and Jonung, 2019). And, unlike policies, trust cannot be externally imposed; it is the gradual outcome of the proper functioning of a participative democracy.

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Chapter 13. Market Regulation via Independent Agencies in Post-Crisis Greece

Stella Ladi[124] and Manto Lampropoulou[125]

Abstract

This chapter investigates the role of Independent Regulatory Agencies (IRAs) in Greece. It suggests that the debt crisis that erupted in 2009 has been a forceful factor for reforming IRAs, but the performance has been uneven. With a focus on network industries we outline the similarities and differences of IRAs regarding their status, powers and operation. The creation and strengthening of IRAs are linked with the policy context of market reform, discerning the liberalisation-oriented IRAs (pre-crisis) and the privatisation-oriented ones (post-crisis). The performance of the Greek IRAs is evaluated based on the indicators of the OECD Performance Assessment Framework for Economic Regulators (PAFER). While similar problems were observed in all IRAs under study, the findings suggest significant variation in their role, powers and performance across sectors. The explanatory factors accounting for these problems are analysed with reference to the interplay between the external pressure for reform (EU, debt crisis) and the features of the domestic political-administrative system.

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1. Introduction

Since the outbreak of the debt crisis and in the course of the three economic adjustment programmes of Greece (2010-2018), sweeping reform programmes were initiated in major economic sectors. The impact of the crisis on the Greek economy and the legacy of the fiscal consolidation programmes have left the country with a broad middle- and long-term reform agenda, still underway, aiming at improving competitiveness and support growth. The goal of economic recovery required a series of structural reforms in key-economic sectors, including the opening up of network industries to competition. These reforms were critical not only for market performance, but also because they were directly linked with other policy programmes such as the restructuring, management and privatization of state assets. The latter was a main pillar of the loan agreements, but its impact would affect the Greek economy beyond the conclusion of the Memoranda of Understanding (MoUs).

For the success of these reforms, the role of regulatory authorities in the governance of the restructured and / or privatized parts of the economy became a matter of great importance. In view of the privatization and / or liberalization of utilities markets, a critical prerequisite has been the existence of strong regulators. The three Memoranda of Understanding (2010, 2012, 2015) and the Economic Adjustment Programmes included several provisions for the strengthening of existing Independent Regulatory Agencies (IRAs), such as the communications and energy regulators, and the creation of new ones, for instance in the transport and water sectors.

This chapter provides a mapping of the current landscape of the domestic IRAs and assesses their role and performance as market regulators. We aim to address three key questions: first, what was the impact of the debt crisis on IRAs? Second, what is the current role of IRAs in privatised and / or liberalised markets? Third, how do they perform as economic-market regulators? These questions are analysed within the framework of policy conditionality. A critical explanatory factor of the empirical findings is the interplay between the external pressure for IRAs reform and the characteristics of the domestic political-administrative system.

The analysis draws on existing theory of agencification but mainly adopts an empirical approach. Along with existing literature, empirical evidence is based on the findings of semi-structured personal interviews with IRAs' heads, members and / or staff that were conducted from March 2019 to March 2020. For the assessment of IRAs' performance we use the OECD Performance Assessment Framework for Economic Regulators and available market indicators. The chapter is structured as follows: in section 2 the theoretical background of regulatory agencies is introduced in relation to the effect of the Eurozone crisis. Section 3 describes the evolution of IRAs in Greece from the pre-crisis to the post-crisis period. In Section 4 we assess the role and performance of IRAs as market regulators. Section 5 provides an explanatory framework for the observed weaknesses of IRAs. The concluding section summarizes the main findings and suggests some areas for further research.

2. Agencification, market regulation and the Eurozone crisis

The devolution of regulatory powers from central ministerial departments to independent agencies is a form of structural and functional decentralisation that falls within the wave of 'agencification' in public administration. Agencification has been a key trend of administrative reforms that have spread at a global scale (Christensen & Lægreid, 2006) and affected European countries since the 1980s (Gualmini, 2008: 77-80). The rationale for the creation of independent agencies focuses on the advantages of the delegation of powers for overcoming (or by-passing) the weaknesses of traditional, centralized and vertically-integrated bureaucracies. Accordingly, agencification has been directly linked with the emergence and growth of the regulatory state (Majone, 1994; Norton, 2004; Christensen & Lægreid, 2005; Scott, 2014). At the policy level, liberalization, privatization and (re)regulation brought about large-scale transformations and called for new reform and regulatory instruments (Levi-Faur, 2004; Gilardi, 2008; Florio, 2017).

The creation of IRAs came largely as a response to policy issues that derived from the privatisation and liberalisation of state monopolies (Córdova-Novion & Hanlon, 2002: 71-72): In a privatised industry, an independent regulator is needed in order to protect the consumer against the abuse of monopoly power and to prevent economic inefficiencies of monopoly operations; In a liberalised market the regulator must be distinct from the state, as the latter may act in favour of a state-owned or state-controlled enterprise, in order to ensure the equal treatment of the incumbent firms and new entrants. IRAs were a key requirement of this new policy environment. Other reasons point out the need for specialized technical and scientific knowledge in complex policy areas that cannot be managed by traditional ministerial bureaucracies (Schick, 2002: 14). In addition, legal obligations deriving from EU membership has been a key factor for the creation of independent regulatory entities in member states (Norton, 2004: 787; CIRIEC, 2020). In Greece, the creation of IRAs largely came in response to all the above factors.

In the EU, most IRAs in network industries were created after the abolition of state monopolies and / or in order to meet the obligations deriving from the sectoral Directives since the late 1980s. Greek IRAs have often invoked interventions or recommendations from the EU level due to delays in the transposition of the EU directives into national law, particularly regarding the energy sector[126] (Berglund et al. 2006; Nabitz and Hirzelb, 2019). At this time, the creation and operation of IRAs was mainly associated with the acceleration of the EU driven liberalisation process and the opening of markets to competition. Both market reforms and agencification were accelerated and intensified after the outbreak of the Eurozone crisis in late 2009. Similar patterns were adopted across other southern European periphery countries that were hit by the crisis, aiming at the strengthening of IRAs' role,

[126] See for instance European Commission - Press release "Commission refers Greece to Court and gives Germany a final warning regarding the transposition of the Energy Efficiency Directive" (Brussels, 18 June 2015).

autonomy and powers[127]. In the crisis context, the broader rationale for reform was the (expected) contribution of IRAs in boosting competition and economic growth, and supporting the fiscal – economic recovery.

3. The landscape of IRAs in Greece

3.1. The pre-crisis IRAs

Domestic IRAs were created in response to the requirements of the single market and the EU-driven liberalization of network industries. In the EU, IRAs for market competition were strengthened during the 1980s and the 1990s, signifying a critical change of the traditional regulation paradigm of which the dominant actors were governments and regulatees (Thatcher, 2005: 347). Greek independent authorities were created and evolved in line with the European trends and external commitments (Georgantas, 2003); however, the landscape of the domestic IRAs is characterized by a certain diversity (Galanis, 2018). Their status, type and powers vary across sectors and no uniform market regulation agency pattern exists.

In a historical perspective, the authority for the protection of competition was the first quasi-autonomous authority that was established in 1977[128]. Since the mid-1990s, its independence and competences were gradually strengthened[129] and the Hellenic Competition Commission (HCC) took the typical form of an independent authority. Sectoral regulatory agencies were created during the 1990s in parallel with the privatization and liberalization of utilities sectors and the harmonization of the domestic regulatory framework with the EU legislation. The regulatory authority for telecommunications and posts[130] (EETT) was established in 1992[131] and its competences were reinforced and expanded in the following decades[132]. The national regulator for energy (RAE) was established at the end of the 1990s[133], as a result of the adjustments required by the EU market liberalization Directives. By the end of the 2000s these new entities had become an integral part of the domestic administrative system and a potential factor for its Europeanization and modernization.

3.2. The crisis effect on IRAs

Since the outbreak of the Greek crisis in late 2009, the role of IRAs was notably upgraded. IRAs' powers and competences were expanded and their role in policy-making and

[127] For Portugal, see Portugal - Memorandum of Understanding on Specific Economic Policy Conditionality: 34-35 and European Commission, 2014: 66-67; for Spain see Xifré, 2014: 1, 11; Espín and Sitges, 2017.
[128] Law 703/1977.
[129] Laws 2296/1995, 2837/2000 and 3373/2005.
[130] Initially named Hellenic Telecommunications Committee (EET, 1992) and since 1998 Hellenic Telecommunications and Post Commission (EETT).
[131] Law 2075/1992.
[132] Law 2668/1998, Act 2867/2000 and Law 3431/2006.
[133] Regulatory Authority for Energy - Law 2773/1999.

implementation was strengthened. Along with existing IRAs, new ones were created, namely the Regulatory Authority for Railways (RAS, 2010), the Regulatory Authority for Passenger Transport (RAEM, 2013) and the Regulatory Authority for Ports (RAL, 2013 / 2016). In addition, the Special Secretariat for Water was planned to be transformed to a semi-independent structure[134] within the Ministry of Environment and Energy.

The provisions and obligations that were included in the MoUs and the domestic reform programmes cover a range of measures targeting both markets and IRAs:

During the 1st programme (2010) emphasis was placed on the strengthening of the role, competences and independence of the Hellenic Competition Commission (HCC). In line with the Memorandum[135] obligations, domestic legislation provided for the empowerment of HCC and a new institutional framework was adopted[136], ensuring its independence, effectiveness, accountability and the continuity of its board[137]. Detailed measures were also set out for the reform of the energy and transport sectors, including the gradual liberalization of markets and the strengthening of the regulators[138]. Among them, the reinforcement of the independence of the Regulatory Authority for Energy (RAE), with reference to the nomination of board, budget and personnel, was a key action[139]. In light of these requirements, new legislation was passed that changed and empowered the role of RAE[140].

The 2nd programme (2012) included deeper and more detailed provisions for IRAs. An upgrading of HCC's role in certain ongoing reforms was observed, such as in regulated professions, fuel sector and product markets[141]. Regarding sectoral regulators, in the 2nd MoU a critical change was the shift of the reform focus from liberalization to privatization. The role of IRAs was more directly linked with the use and management of state assets[142], along with the opening of markets to competition. IRAs were a necessary precondition for the proper regulation of markets and the management of assets under privatisation, for instance regarding ports and gas sectors[143]. The agreed measures covered sectors with limited scope for competition, such as ports, water, airports and motorways, and differed from the case of telecommunications and energy market reforms that were mainly driven by the liberalization process. The establishment and the strengthening of the effectiveness and autonomy of port, rail and water regulatory authorities were actions of major importance[144]. In the e-

[134] A provision for a separate budget was included in the Supplemental Memorandum of Understanding (June 2016).
[135] Greece: Memorandum of Understanding on specific economic policy conditionality (May 2010), pp. 11, 26.
[136] Law 3959/2011 (amended by Laws 4013/2011, 4072/2012, 4364/2016 and 4389/2016).
[137] Law 3845/2010, p. 1368; The Economic Adjustment Programme for Greece, Fourth review (July 2011), p. 67.
[138] Law 3845/2010, p. 1347.
[139] Greece: Memorandum of Understanding on specific economic policy conditionality (May 2010), p. 12, 26; Law 3845/2010, p. 1369; The Economic Adjustment Programme for Greece, Fourth review (July 2011), p. 71.
[140] Laws 3851/2010 & 4001/2011.
[141] The Economic Adjustment Programme for Greece, Fourth review (July 2011).
[142] Greece: Memorandum of Economic and Financial Policies (March 2012), ch. D, par. 24; Law 4046/2012, p. 762.
[143] The Second Economic Adjustment Programme for Greece. Fourth Review (April 2014), p. 3.
[144] The Second Economic Adjustment Programme for Greece. Fourth Review (April 2014), pp. 26-27, 76-77, 121.

communications sector the MoU II extended the role of the Hellenic Telecommunications and Post Commission (EETT) as a one-stop shop for the licensing of antennae and base stations[145].

In the 3rd programme (2015) the above reforms progressed and were further specified. The need to strengthen the institutional, financial and functional independence and effectiveness of existing IRAs such as the HCC and RAE was stressed, along with measures aiming at enhancing the role, functionality and powers of the newly established regulatory structures for water and ports[146]. Special emphasis was placed on the operation, competences and autonomy of the Special Secretariat for Water[147]. A critical new element was that for the first time a unified approach on independent agencies was introduced. In light of the relevant provisions, the Supplemental MoU (2017) emphasized the need to review and simplify the existing legislative framework and to define a common set of rules that would apply horizontally to all independent agencies[148]. In line with the envisaged horizontal legislation, the main principles for HCC, RAE and RAEM are expected to be further defined[149]. Up to date, a revised partial version of the draft law has been submitted by the Greek authorities and was under consultation with the EU institutions, leading to a revised report on June 2018[150]. After the conclusion of the adjustment programmes in August 2018, the continuity and completion of these reforms was agreed and their progress has been monitored.

3.3. The post-crisis landscape of IRAs

The current landscape of IRAs is characterized by a notable increase in their number, role and powers. Table 1 summarizes the existing regulatory institutions in network industries and the type / regime of the respective markets and sectors.

Table 1. IRAs & markets

Sector	Market	Regulator
TELECOMMUNICATIONS & POSTS	*Liberalized*	Hellenic Telecommunications and Post Commission (EETT / EETT)
Telecommunications	Oligopoly: 4 fixed and 4 mobile tel. providers[151]	
Posts	Oligopoly: 10 providers[152]	

[145] Greece: Memorandum of Understanding on Specific Economic Policy Conditionality (March 2012) (Growth-Enhancing Structural Reforms).
[146] Greece - Memorandum of Understanding for a three-year ESM programme (August 2015), pp. 24, 27; Law 4336, p. 1027; Greece - Supplemental Memorandum of Understanding (June 2016), p. 41.
[147] Greece - Supplemental Memorandum of Understanding (June 2016), p. 32; Compliance Report - ESM Stability Support Programme for Greece - Fourth Review (July 2018), pp. 29, 61-62.
[148] Greece - Supplemental Memorandum of Understanding (June 2016) pp. 2, 40-41.
[149] Compliance Report - ESM Stability Support Programme for Greece - Fourth Review (July 2018), pp. 72-73.
[150] Compliance Report - ESM Stability Support Programme for Greece - Fourth Review (July 2018), pp. 72-73.
[151] Source: Interviews and EETT, *Market Review of Electronic Communications & Postal Services 2017*.
[152] Source: EETT, *Market Review of Electronic Communications & Postal Services 2017*.

ENERGY	*Liberalized* (ongoing)	Regulatory Authority for Energy (RAE / PAE)
Electricity	Oligopoly: 25 providers[153]	
Gas	Oligopoly: 21 providers[154]	
TRANSPORT		
Railways	*Liberalized* Oligopoly: 5 companies	Regulatory Authority for Railways (RAS / ΡΑΣ)
Urban transportation (Athens & Thessaloniki)	Monopoly	[Athens Public Transport Organization (OASA / ΟΑΣΑ) Transport Authority of Thessaloniki S.A. (OSETH / ΟΣΕΘ)][155]
Inter-city transport	*Quasi-liberalized* [monopoly/ line (62 KTEL)]	Regulatory Authority for Passenger Transport (RAEM / PAEM)
Marines/ports	*Quasi-liberalized* (Concessions[156] and / or privatization[157])	Regulatory Authority for Ports (RAL / ΡΑΛ)
Airports	*Quasi-liberalized* (Concessions)	Civil Aviation Authority (APA / ΑΠΑ)
WATER & SEWERAGE SERVICES	*Non-liberalized* Monopoly	Special Secretariat for Water (SSW / ΕΓΥ)[158]
INTER-SECTORAL HORIZONTAL COMPETENCES	(various regimes)	Hellenic Competition Committee (HCC / EA)

Source: Lampropoulou & Ladi, 2020.

From this overview, a set of common features as well as certain differences can be traced among existing IRAs, as presented in Table 2. Regarding the similarities, the creation of IRAs in all cases has been the result of external pressures and came in response to the single market requirements and the adjustment of the domestic framework to EU legislation (sectoral Directives). In most cases, especially in the early stages of their operation, IRAs faced several problems of limited powers, inadequate resources, political interferences and understaffing. IRAs are characterized by several differences with reference to their powers, institutional features, resources and degree of independence (see section 4). The type and the degree of competition of the respective markets vary as well.

[153] Source: DEDDIE data (Dec. 2018).
[154] Source: data from Natural Gas Distribution Companies – EDAs (Attica, Thess, DEDA) (Nov. 2018).
[155] These entities are not IRAs according to our definition; however, they are responsible for the monitoring of the respective sectors and are supervised by the Ministry of Infrastructure and Transport.
[156] Regional ports.
[157] Piraeus Port Authority S.A. (OLP) and Thessaloniki Port Authority S.A. (OLTH).
[158] Structure within the Ministry of Environment and Energy.

Table 2. Similarities and differences among IRAs

Similarities		Differences	
Rationale: adjustment to external requirements • single market • debt crisis • economic adjustment	Supranational policy context (EU Directives, MOU)	• Powers • Institutional features • Degree of independence • Resources • Market structure	Domestic policy context (institutional-regulatory framework)

Source: Compiled by the authors

During the economic adjustment programmes of Greece (2010-2018) IRAs were part (and prerequisite) of key reforms in the network industries. The strengthening of existing IRAs and the creation of new ones was the combined effect of the acceleration of pending (delayed) reforms and new commitments were undertaken under the Memoranda in the energy, telecoms, transport and other sectors. The pre-crisis IRAs have been mostly oriented towards the liberalization of the markets, while the post crisis (new) IRAs seem to have been more closely linked with the privatization programme.

4. IRAs' performance and market regulation

4.1. Measuring IRAs' performance

The meaning, tools and evaluation criteria of IRAs' performance vary significantly as well as the type, methods and unit / levels of analysis, depending on the approach adopted (Brown et al., 2006). In some studies, performance is directly linked with the goals and mission of IRAs (Pollitt & Talbot, 2004: 14-18). Other scholars focus on market, sector or industry performance and the quality of the regulatory environment (Joskow, 2005) or, generally, the regulatory system (Brown et al., 2006). Indicators assessing the effectiveness of market regulation include market performance, price and quality of services / products and market competition (Pollitt & Talbot, 2004; Verhoest et al., 2009). Further measurements place emphasis on the quality of services and service delivery (European Commission, 2007; CERRE, 2014) or assess the quality of regulation in relation to market performance and consumer's satisfaction (Clifton and Diaz-Fuentes, 2010).

Our analysis is based on a synthesis of existing market indicators, reports and data collected through interviews with heads, members and officials of IRAs. For the assessment of IRAs' performance we draw on the OECD Performance Assessment Framework for Economic

Regulators (PAFER)[159], which includes the following indicators: (i) strategic objectives, (ii) input, (iii) process, and (iv) output and outcome.

4.2. Quality of regulation: The insiders' view

This section makes an assessment of IRAs' performance based on existing legislation and the views of the regulators and the industry. The information was gathered via 11 semi-structured interviews with heads, members and officials of IRAs. We also used data from the Annual Reports and other official publications of IRAs. The data is classified in line with the OECD-PAFER indicators[160] and listed on a Likert-type scale from very low to very high[161], according to the estimated performance of IRAs. The different scores respectively show the degree (low / moderate / high) to which each IRA meets the OECD performance standards, namely: Clearly identified role and objectives, Efficiency and effectiveness of Input (funding, staffing, resources' management), Quality of process for regulatory activity and Systematic assessment of outputs and outcomes from regulatory activity. Findings are summarized in Table 4.

Table 4. IRAs' performance (OECD – PAFER)

IRAs	**Clearly identified role and objectives**	**Efficiency and effectiveness of Input**		**Quality of Process for regulatory activity** (processes - organisational management)	**Output from regulatory activity**	**Outcome (Direct and wider impact)**
		Funding - staffing	**Autonomy - effectiveness of resources' management**			
EETT	High	Moderate	Moderate - High	Moderate - High	High	Moderate - High
RAE	Moderate-High	Low-Moderate	Moderate	Moderate	Moderate - High	Moderate
RAS	High	Low-Moderate	Moderate	Moderate	High	Moderate
RAL	High	Low-Moderate	Moderate	Moderate	High	Moderate
RAEM	Low-Moderate	Very Low	n.e.	n.e.	n.e.	n.e.

[159] See OECD 2018: 6 and http://www.oecd.org/gov/regulatory-policy/driving-performance-of-regulators.htm.
[160] We mainly focus on sectoral regulators in competitive markets; thus HCC, SSW and APA have been excluded from this assessment.
[161] For a detailed presentation see Lampropoulou & Ladi, 2020: 14-18.

Evidence suggests that IRAs' performance significantly varies. In short, bigger, older and established agencies, such as EETT, perform better than smaller and most recently created ones, a trend which is also confirmed by the IRAs' literature (Maggetti and Verhoest, 2014: 247). RAE faced several problems in the first stages of its operation, for instance regarding the 'input' indicator (vague / weak powers, understaffing issues, etc.), but in the past years notable improvement has been recorded, as the institutional framework has changed[162] and its role has been empowered. The performance of post-crisis IRAs such as RAS and RAL is adequate regarding the existence of a clear institutional mission (objectives, targets, goals) in line with the IRA's functions and powers however they are still in the process of establishing their role as market regulators. The shortage of (specialized) staff and other resources is a major weakness and further institutional and organizational strengthening will be needed as the respective markets continue to develop. RAEM is a rather problematic case as it has not (yet) operated and no action has been taken in order to issue the required decisions[163]. Overall, it should be noted that while in the course of the economic adjustment programmes the independence and powers of existing IRAs were reinforced, their role in decision-making remains weak.

Regarding the performance criteria, the *strategic goals* of most IRAs are clearly defined in the legislative framework. However, its implementation and update are not always consistent. A major problem regarding IRAs' *inputs* is the lack of personnel, especially concerning staff with specialized skills / knowledge. Remarkably, all IRAs under study are understaffed. Their autonomy and effectiveness in the management of their resources is mostly moderate, particularly due to the restrictions in the use of own-source revenues. Quality of *processes* is adequate but moderate, as the existing (heavy) bureaucratic procedures often slow down their regulatory and administrative activities. As regards the *outputs*, most IRAs perform well, as their decisions are generally accepted by the market and only a small percentage of them are challenged in (but rarely been overturned by) courts. Finally, IRAs *outcomes* suggest moderate performance levels: Telecoms sector corresponds to higher degree of competition and a relatively stable market environment, while RAE, RAS and RAL are still in the process of adjusting to the ongoing reforms of the relevant markets.

4.3. Market indicators

An additional external source for the evaluation of IRAs' outcomes is the view of the consumers in network industries. Consumer Markets Scoreboard can be used as an indicator reflecting (among others) the quality of regulation in utilities markets. The components of the Market Performance Indicator index (MPI) include the respondents' estimations and ratings

[162] Law 4001/2011.

[163] The members of RAEM took office in September 2014. However, shortly after their appointment, one member resigned, and the authority could not operate. In addition, the necessary decisions for its funding and staffing have not been issued by the competent Minister. More than five years after the creation of RAEM the term of office of its members has expired without any contact or collaboration between them and the competent Minister at any time during their term or thereafter.

with regard to: Comparability, Trust, Problems & Detriment, Expectations and Choice. Their average scores since the beginning of the crisis are presented in Table 5.

Table 5. Market Performance in regulated network industries

	Average MPI	2017-2015	2017-2013	2015-2013	2013-2012	2012-2011	2011-2010	Country EU-28
Fixed telephone services	76.6	-3.9*	-4.4*	-0.4	+3.1*	+1.0	-0.6	-0.6
Postal Services	81.6	+1.6	+1.5	+0.3	+2.1*	-0.5	+0.7	+2.1*
Internet provision	75.2	-2.1*	-3.3*	-1.5	+0.9	+1.5	+3.7*	-1.6*
Train services	78.2	+1.9*	+4.0*	+2.1*	+4.5*	-0.1	-2.6*	+1.4*
Water supply	72.2	-1.3	+2.0	+2.8*	+2.6*	-2.2	-1.9	-4.9*
Mobile telephone services	75.9	+2.9*	-2.7*	-5.8*	+3.4*	-0.1	+1.0	-1.2
Electricity services	68.8	-0.8	+4.1*	+5.5*	+4.2*	-6.8*	-3.1*	-7.5*
Gas services	81.4	+3.9*	+4.7*	+0.3	+1.9	+2.9*	-2.0*	+2.1*

Source: EU - Consumer Markets Scoreboard 2018.

The data shows that during the crisis there have been some improvements but most indicators have deteriorated. In the area of RAE, electricity services are among the three worst-performing markets and score below the EU-28 average. The same goes for Water supply. Internet provision and fixed telephone services have been deteriorating since 2013 and are below the EU-28 average, suggesting the underperformance of the e-communications market. Postal services, Gas services and Train services have improved and score above the EU-28 average. These findings are partly controversial, to the extent that sectors that fall within the responsibility of the same regulator record both positive and negative scores, i.e. electricity and gas for RAE and fixed-telephone and postal services for EETT. Thus, these indicators have certain limitations and do not clearly reflect the relationship between market and regulatory performance, as the latter depends on a variety of factors and not solely on the regulators.

5. Discussion: Domestic resistance vs external pressure for reform

The process of establishing IRAs' role in the domestic political-administrative system has encountered strong resistances and still has a long way to go. Existing political and bureaucratic structures initially faced new agencies with scepticism and were reluctant to delegate powers and responsibilities, especially regarding decision-making. Most agencies during the early stages of their operation faced problems regarding their powers, independence and resources (Alexopoulos et al., 2009; Spanou & Sotiropoulos, 2011: 731) that

undermined their regulatory capacity and performance. These weaknesses were well recognized before the eruption of the crisis and were further aggravated due to the delayed adjustment of the markets and the regulatory framework. While the need to complete the required market reforms and to strengthen the role of the regulatory authorities had been stressed by the EU, it was the economic adjustment programmes that triggered more drastic and radical measures to moved forward with the implementation of pending or delayed reforms.

Along with the requirements of the EU single market and the liberalization process, a critical factor underlying the empowerment of IRAs in the course of the economic adjustment programmes was the policy conditionality linking the required reforms with the loan's disbursements (Featherstone, 2015; Spanou, 2020). This new policy environment created a strong external pressure to de-politicise several functions of the domestic administrative system, especially in MoU-related areas, due to the low trust of the country's creditors vis-a-vis Greek governments. Thus, external demands enabled and supported the creation of independent entities that operate 'at arm's length' from the state. The attempted de-politicisation through agencification was observed not only at the area of IRAs, but also to other central administrative structures, implying a tendency for a clearer division between the political and the administrative spheres (Dimitrakopoulos & Passas, 2020; Lampropoulou & Oikonomou, 2020).

In this respect, a critical question concerns the interplay between the cultural norms and practices of the domestic political-administrative system and the new, externally imposed standards of the regulatory institutions. The fact that most domestic IRAs were not created on national governments' own initiative but the latter were forced to do so by the EU and / or the crisis pressure implies a prior (negative) reflex towards the delegation of powers from the central Ministries to semi-autonomous institutions. While IRAs' independence was seemingly strengthened during the crisis, government interference in their operation remains a serious challenge, especially regarding informal political involvements. Central government is still reluctant to strengthen IRAs', especially regarding decision-making competences. To the degree that IRAs' performance is associated with their independence (Cambini and Rondi, 2011; Hanretty et al., 2012), the above weaknesses largely explain the above described cases of low or moderate performance.

Overall, the delegation of powers to IRAs poses a broader challenge for the traditional organizational patterns of the domestic bureaucracy. Given that the Greek administrative system has been characterized by a high degree of centralization and concentration, the empowerment of independent, functionally decentralized entities signified a critical aspect of the broader modernization process of public administration (Spanou, 2008: 161; Ladi, 2014: 190). However, changes have been incremental and pre-existing bureaucratic patterns and practices are still dominant.

6. Conclusions

This chapter provided a mapping of the Greek IRAs in the network industries and attempted a first assessment of their performance as market regulators. The debt crisis that erupted in 2009 has triggered a wave of market reforms that led to the strengthening of existing IRAs and the creation of new ones. Findings suggest that the status of IRAs varies substantially regarding their institutional features, size, powers, resources, independence and performance. Several differences were further observed between the pre-crisis (liberalization-oriented) and the post-crisis IRAs (privatization-oriented).

Regarding IRAs' performance, the results based on OECD PAFER indicators show that older and established agencies, such as EETT, seem to perform better than newly created ones that still lack powers and resources. RAE has encountered several problems since its creation but in the course of the debt crisis its powers have been reinforced and progress has been recorded. RAS and RAL are in the process of establishing their role and show good prospects; however, they need further institutional strengthening. A rather problematic case is RAEM, which actually remains a 'ghost' IRA, as it was only legally established but has not (yet) operated in practice.

The main trigger for IRAs' reform has been an external pressure, namely the compliance with the EU Directives (1990s-2000s) and / or the Memorandum prerequisites (2010s). The observed tension between external obligations and internal resistances explains several weaknesses of the domestic IRAs. This imbalance is further reflected in the weak synchronisation between the formal-legislative and the actual adjustment in the sectors under study. Beyond the adjustment of the regulatory framework, the competences, means and resources that were delegated to the regulators in order to exercise their powers in many cases have been inadequate. This lack of powers and resources has been a main reason for IRAs' problems and suboptimal performance.

Notwithstanding the observed weaknesses, the creation of IRAs has strengthened and modernised the regulatory function and has supported market reforms in major economic sectors. While IRAs have not strongly challenged the dominant organisational pattern of the domestic administrative system, which mainly remains a heavy traditional bureaucracy, traits of change can be traced, for instance regarding the flexibility and transparency of regulation, as well as the strengthening of the technocratic standards of administration. IRAs have changed the way of government intervention in the economy, as their features match better with the prerequisites of competitive markets. Hence, the existence of strong regulators is expected to support the long-term reform of critical parts of the domestic economy, such as communications, energy, transport and other infrastructure, and to have a positive effect on investments and growth. However, beyond market and regulatory performance, issues of democratic control and accountability should not be overlooked. Finally, a critical question is whether IRAs will support the long-term viability of the recent structural and market reforms in the post-crisis era.

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Chapter 14. Macro Policy Interdependence in a Unifying Framework for a Monetary and Fiscal Union

Yannis M. Ioannides[164]

Abstract

This paper is a qualitative presentation of issues associated with macroeconomic policy interdependence with an emphasis on the institutional setting of the European Union and of the Euro zone area. It identifies the importance of fiscal multipliers and the resulting policy spillovers, and discusses some of the evidence by drawing on recent studies. It then turns to a qualitative discussion of the key analytical components of a model characterizing economies which can exercise their own national fiscal policy while engaging in free trade and maintaining their own currencies or, alternatively, sharing a currency. To appreciate these issues, the paper benchmarks the different scenaria to the absence of trade, strictly speaking autarky, while allowing progressively fiscal and monetary policy under a monetary union as well as a fiscal union. The model emphasizes the importance of differences in population sizes in a general international equilibrium model of a monetary union under alternative scenaria of monetary, fiscal, and debt policy coordination. It considers, in particular, conditions for participating in a fiscal union within a monetary union, a hitherto unexplored question. The analysis allows for inefficiencies in tax collection that serve as another difference across countries and examines how union-wide coordination of tax and spending policy, typically a nation-specific competence, may improve welfare. This is intended to explore the contrast between monetary policy decisions that may be determined by deliberations and voting in the central bank, given the fiscal policy stance, and national fiscal policy interdependence, given union-wide monetary policy. It examines the implications of different sizes of the members of the union.

Keywords: monetary union, fiscal union, international interaction of monetary and fiscal policy; game-theoretic models of international monetary policy coordination. Debt finance vs. tax finance vs. monetary policy. Technological change vs. debt reform.

JEL codes: E52, E63, F45, F41.

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I thank the editors, George Alogoskoufis and Kevin Featherstone, for their input and Philipp Katsinas for his help with manuscript. All errors are mine.

1. Introduction

The agony increasingly associated with the outcome of numerous recent European Councils is not just due to stress, fatigue, anxiety, and even a modicum of despair due to the Covid-19 pandemic. Reconciling differing viewpoints in economic policy coordination among nation states that differ so much with respect to culture and level of administrative sophistication as the members of the European Union (EU, from now on) and the Eurozone (EZ from now on) is a daunting task in the best of circumstances. The present paper probes the dimensions of interdependence by means of a simple, but not too simple, macroeconomic framework for studying reforms, deficits, and debt in fiscal and currency unions with an emphasis on the EU and the EZ. In the course of doing so the paper examines benefits and costs associated with participation in the EU and the EZ with an emphasis on the perspective of the smaller vs. larger countries, like Greece, which was the focus of the Fletcher–LSE Conference, April 12, 2019.

The Eurozone (EZ) is at a crossroads. The global financial crisis revealed the importance of the dearth of macro policy tools available to EZ members. This is in stark contrast to the US. A critical issue is the limits to monetary policy tools in the absence of a fiscal union. The paper reviews the broader issues associated with economic policy interdependence in a unifying framework by relying on the literature that has emerged since the aftermath of the EZ sovereign debt crisis. It also draws analytical lessons from a stylized model with two countries, differing in size, which accommodates autarky versus a variety of modes of economic integration while allowing for a fiscal union within a monetary union. The model allows examination of broad policy options and advantages that adding a fiscal union confers on those available to a monetary union. The full technical details of the model are provided in a technical appendix [Ioannides (2021), Appendix].

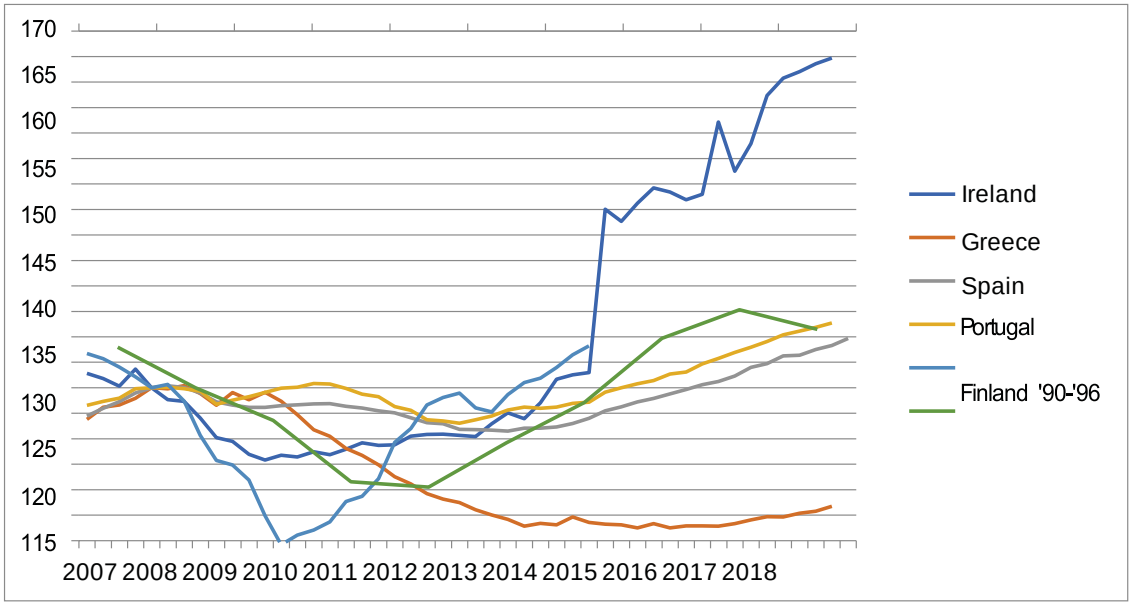
One of the most important considerations that confronts students of the design of European integration is heterogeneity of the constituent parts. Heterogeneity is expressed in many dimensions, such as political, cultural, economic and of course magnitudes in terms of the population and economic size. Newer theories of comparative advantage, such as those associated with product differentiation that new trade theory and new economic geography have utilized, have emphasized that due to the advantages of agglomerations and path dependence advancing economic integration may make constituent states even more heterogeneous. As a consequence, suboptimalities in the currency area they make up may thus be further exacerbated.

This paper emphasizes the importance of differences in population sizes. Population size directly affects real economic outcomes. It also underlies perceptions of relative importance in international economic governance and thus state actions. Therefore, it affects notions of democratic legitimacy both within and across countries. In the EU, size is critically enshrined in numerous decision making structures, which range from unanimity or consensus to various qualified majority rules to simple majority rule. At the same time, EU member states are equally represented in the European Commission, the EU's executive branch, which is made

up of a single national from each member state. This parallels the US parliamentary structure, where states are equally represented in the US Senate but in proportion to their populations in the US House of Representatives.

The analytical backbone of the model of this paper, available in a Ioannides (2021), Appendix, borrows Casella (1992)'s framework and examines a number of scenaria above and beyond hers. In particular, it allows for coexistence of fiscal policy, national as well as union-wide, along with monetary policy. The model also allows [c.f. Sibert (1992)] for inefficiencies in tax collection that add another difference across countries. It allows for the possibility that tax and spending policy in the union are decided by means of different procedures. This is intended to express the contrast between monetary policy outcomes determined by deliberations and voting in the ECB, given the fiscal policy stance, and national fiscal policy stance, given monetary policy. What options does this logic confer on smaller versus larger members of a currency union? How a small country's fundamentals affects its bargaining power, especially over a full range of fiscal policy, like taxes on different aspects of activity, is an important question. It goes beyond Casella (1992) in examining the impact of market reforms and of various types of technological progress and explores their consequences for the sustainability of debt.

Figure 1. Evolution of GDP in EZ crisis countries, Comparison with Finland, 1990-1996, and USA, 1929-1938



1.1 Greece at the Aftermath of the EZ Debt Crisis

Greece with its singularly weak fiscal and competitiveness performance, and indeed huge overall institutional weaknesses posed some very challenging questions to EU/EZ decision

makers. Its somewhat unique geographic and cultural isolation and atrophied economic complexity are all jointly at fault. It is important to remember how special Greece's performance has been during the EZ crisis, which started in 2010. Figure 1 plots the evolution of GDP in EZ crisis countries, namely Greece, Ireland, Portugal and Spain, and compares with Finland, 1990-1996, and with the US, 1929-1938. Comparison with Finland is interesting because Finland's experience following the breakup of the Soviet Union was a severe downturn, the so-called Finnish Great Depression, which was purely due to real, that is non-monetary shocks. Comparison with the US Great Depression during the 1929–1938 provides important contrast in understanding the unprecedent severity of the Greek crisis during the EZ debt crisis.

In the context of experiences like those documented in Figure 1, it is understandable that membership in the EZ — and in view of the British experience with the Brexit debate, in the EU, too — it is reasonable that governments and publics might have questioned whether the EU or the EZ pay off. It is therefore interesting to consider some quantitative aspects of the benefits to individual nation states of the membership to the EU and to the EZ. Twenty years since its introduction, the euro does remain controversial in some member countries. Moreover, we do know from the Brexit experience for the UK that EU membership itself, in spite of the inadequacies of the associated political campaigns can be a deeply divisive question. However, it does not appear to be generally so across the other EU nations.

Figure 2. 20 Years of Euro Winners and Losers; Source: Gasparotti and Matthias (2019)

Eurozone country	Impact of euro-introduction on prosperity 1999-2017 per inhabitant	Impact of euro-introduction on prosperity 1999-2017 overall
Germany	+ 23,116 euro	+ 1,893 billion euro
Netherlands	+ 21,003 euro	+ 346 billion euro
Greece	+ 190 euro	+ 2 billion euro
Spain	– 5,031 euro	– 224 billion euro
Belgium	– 6,370 euro	– 69 billion euro
Portugal	– 40,604 euro	– 424 billion euro
France	– 55,996 euro	– 3,591 billion euro
Italy	– 73,605 euro	– 4,325 billion euro

Consider the following comparison, at the outset a "straw man." Gasparotti and Matthias (2017) have used a "synthetic control" method to analyse which EZ countries have gained from the euro and which ones have out. Specifically, their synthetic method involves matching countries with control groups. In the case of Greece the group is Bahrain, Israel, Barbados, New Zealand, Gabon, and Singapore! This underscores the characterization as a straw man. Still, the numbers in Figure 2 are quite telling. Germany and the Netherlands are big winners, Greece is a marginal one, but France is a big loser, and so are Portugal and Spain. Political upheavals almost match this assessment of gains and losses! So, the juxtapositions of the

findings of Gasparotti and Matthias (2017), summarized in Figure 2 might amount to more than a straw man after all.

However, it is the position of this paper that a full analysis of the impact of accession to either the EU or EZ must account for interconnectedness via trade and financial flows and for institutional arrangements regarding joint policy determination. It cannot be done independently of how the political process operates, which ultimately must reflect tradeoffs and compromises arrived at during policy discussions. The model in Ioannides (2021), Appendix, would facilitate that, albeit in a very stylized fashion, but there exist s huge set of details to be taken into consideration.

2. National Policy Options

In the absence of fiscal union, which of course does require at least a modicum of political integration, the EZ must contend with mutual oversight of policies. The EZ crisis has demonstrated that its members cannot be too loose about that oversight. Yet, its scope is limited, because only a limited set of tools is truly national. E.g., in spite of numerous EU-based programs and incentives, structural reforms improving productivity and external competitiveness are the responsibility of national governments. Inefficiencies and institutional inflexibilities have serious adverse consequences for national as well as union-wide economic performance. E.g., the modern literature on markets with frictions imply that inflexible labor market institutions, which fall entirely under national control, are associated with higher permanent levels of unemployment [c.f. Draghi (2014)].

While national fiscal policy is to this day essentially under national control, its exercise by countries that are interconnected through trade and a common currency is up against explicit and implicit constraints. An instance of explicit constraints is the mandated inter-governmental consultations on budgetary matters. Implicit constraints are created by the fact that national fiscal policy generates cross-country spillovers, which in the context of the EU/EZ cannot be ignored.

Regarding monetary policy interconnectedness, the sensitivity of aggregate policy objectives to country size is a key factor in the attractiveness to currency union to countries of different sizes. Fiscal policy interconnectedness, too, has a similar effect, which often neglected or even ignored, in the absence of a union-wide fiscal-policy making body that would serve as a counterpart to the monetary policy making mechanism associated with the ECB. For similar reasons, it is hard to imagine a perfect fiscal union. Whereas the qualified majority rules that are employed by the EU are to a large extent sensitive to relative populations, they have not been successful in heeding the criticism of democratic deficit.

Furthermore, fiscal policy coordination, let alone fiscal union, depends critically on knowledge of multipliers and spillovers across countries, which vary across countries and are hard

to estimate. E.g., an 1% increase in German government spending, has an impact that ranges from a 0.05% increase in Greek GDP to 0.4% in Belgian GDP. A somewhat over- looked aspect of interdependence is that benefits to a country from another country's fiscal policy looks like free lunch, to the recipient, but may cost the source economy. The extent in which spillovers are important in discussion over policy coordination has not been as well researched, but the attractiveness of macro policy coordination during the Great Recession and during the EZ debt crisis renewed interest in improving our understanding.

Let's take a look at the numbers and charts from Dabla-Norris et al. (2017). Figure 3 plots national domestic multipliers against trade openness. The latter is conventionally defined a the sum of a country's exports and imports over GDP. Domestic fiscal multipliers, provided for 10 EZ countries correspond to the ones reported along the main diagonal of Table 1, Dabla-Norris et al. (2017), p. 29, reproduced here as Figure 3. Multipliers and spillovers are defined as the ratio of the cumulative change of output over the cumulative change of government spending. Not surprisingly, the matrix of spillovers on Table 1 is asymmetric, further complicating matters of policy coordination. Figure 4 provide additional information. The diameter of each bubble on Figure 4 is proportional to the size of the respective country's GDP. If one were to ignore country size, it is well known that more trade openness is associated with lower domestic multipliers, which applies to the many very open economies in the EU. However, for the EU as an entity, trade openness at = .19, is smaller smaller than most people think[165].

Figure 3. Openness to Trade and Fiscal Multipliers; Source: Dabla-Norris et al. (2017)

Table 1. Fiscal Multipliers and Spillovers (1 year)

Recipient country	Country originating the fiscal shock: Germany	France	the Netherlands	Belgium	Austria	Italy	Spain	Ireland	Finland	Portugal
Germany	0.71	0.22	0.21	0.14	0.15	0.11	0.08	0.03	0.06	0.06
	[0.63, 0.82]	[0.14, 0.31]	[0.15, 0.26]	[0.11, 0.19]	[0.12, 0.2]	[0.07, 0.15]	[0.05, 0.11]	[0.01, 0.04]	[0.03, 0.09]	[0.03, 0.08]
France	0.09	0.53	0.07	0.07	0.04	0.06	0.04	0.02	0.01	0.03
	[0.06, 0.12]	[0.45, 0.61]	[0.05, 0.1]	[0.05, 0.09]	[0.02, 0.06]	[0.04, 0.08]	[0.02, 0.06]	[0.01, 0.03]	[0, 0.03]	[0.02, 0.04]
the Netherlands	0.17	0.14	0.52	0.11	0.06	0.07	0.05	0.02	0.04	0.03
	[0.13, 0.2]	[0.09, 0.2]	[0.46, 0.58]	[0.08, 0.14]	[0.03, 0.09]	[0.04, 0.1]	[0.03, 0.07]	[0.01, 0.04]	[0.02, 0.06]	[0.01, 0.05]
Belgium	0.13	0.15	0.13	0.29	0.05	0.06	0.04	0.03	0.03	0.03
	[0.1, 0.16]	[0.11, 0.2]	[0.1, 0.16]	[0.24, 0.34]	[0.03, 0.07]	[0.04, 0.08]	[0.02, 0.06]	[0.01, 0.03]	[0.01, 0.05]	[0.01, 0.05]
Austria	0.16	0.13	0.09	0.06	0.44	0.07	0.04	0.02	0.03	0.03
	[0.12, 0.2]	[0.07, 0.18]	[0.05, 0.13]	[0.04, 0.09]	[0.39, 0.49]	[0.04, 0.11]	[0.02, 0.07]	[0.01, 0.03]	[0.01, 0.05]	[0.01, 0.05]
Italy	0.13	0.16	0.11	0.08	0.08	0.50	0.06	0.02	0.04	0.04
	[0.09, 0.17]	[0.11, 0.23]	[0.07, 0.14]	[0.05, 0.11]	[0.05, 0.11]	[0.46, 0.54]	[0.04, 0.09]	[0.01, 0.04]	[0.02, 0.07]	[0.02, 0.06]
Spain	0.12	0.14	0.09	0.07	0.06	0.08	0.31	0.02	0.03	0.06
	[0.08, 0.16]	[0.1, 0.2]	[0.06, 0.13]	[0.04, 0.09]	[0.03, 0.09]	[0.05, 0.11]	[0.27, 0.35]	[0.01, 0.03]	[0.01, 0.05]	[0.04, 0.08]
Ireland	0.34	0.49	0.33	0.30	0.22	0.24	0.17	0.68	0.12	0.11
	[0.22, 0.49]	[0.27, 0.69]	[0.21, 0.47]	[0.21, 0.4]	[0.13, 0.34]	[0.13, 0.37]	[0.09, 0.24]	[0.6, 0.76]	[0.05, 0.21]	[0.04, 0.19]
Finland	0.19	0.15	0.16	0.10	0.10	0.11	0.07	0.04	0.49	0.06
	[0.13, 0.26]	[0.06, 0.23]	[0.1, 0.22]	[0.06, 0.15]	[0.05, 0.14]	[0.07, 0.16]	[0.04, 0.1]	[0.02, 0.06]	[0.39, 0.59]	[0.03, 0.09]
Portugal	0.12	0.15	0.08	0.07	0.06	0.07	0.07	0.02	0.04	0.29
	[0.08, 0.16]	[0.09, 0.2]	[0.04, 0.12]	[0.04, 0.1]	[0.03, 0.09]	[0.03, 0.1]	[0.05, 0.1]	[0.01, 0.03]	[0.02, 0.06]	[0.25, 0.33]

[165] Thus Paul Krugman's argument in favor of EU-wide fiscal policy to fight the Great Recession was very well taken.

3. Multipliers and Spillovers

Generally, fiscal spillovers vary substantially, depend on mutual trade and financial flows. However, an inverse relationship between the size of domestic fiscal multipliers and trade openness is discernible from Figure 3. Fiscal spillovers are larger when the source economy is large, when countries are highly integrated through trade or financial linkages, and when the spillover-receiving economy is small and has a narrow export base.

A particular instance where these facts can be helpful in assessing policy recommendations is the following argument by Blanchard et al. (2015). Under liquidity trap conditions, these authors show that a fiscal expansion by the core EZ economies would have a large and positive impact on periphery GDP assuming that policy rates remain low for a prolonged period. Specifically, an expansion of core government spending equal to one percent of euro area GDP would boost periphery GDP by over 1 percent in a liquidity trap lasting three years, which would have been nearly half as large as the effect on core GDP. Accordingly, under a standard ad hoc loss function involving output and inflation gaps, increasing core spending would generate substantial welfare improvements, especially in the periphery. The benefits are considerably smaller under a utility-based welfare measure, reflecting in part that higher net exports play a material role in raising periphery GDP. Bluntly put, German fiscal expansion should have been procyclical. However, the EZ members that were caught in the crisis were not in liquidity trap: hints of spending increases would have increased the interest rates. Uhlig (2016), however, dismisses these arguments as politically irrelevant. That said, a modicum of fiscal expansion did take place due to refugee crisis.

Figure 4. Fiscal Spillovers from Germany; Source: Dabla-Norris et al. (2017)

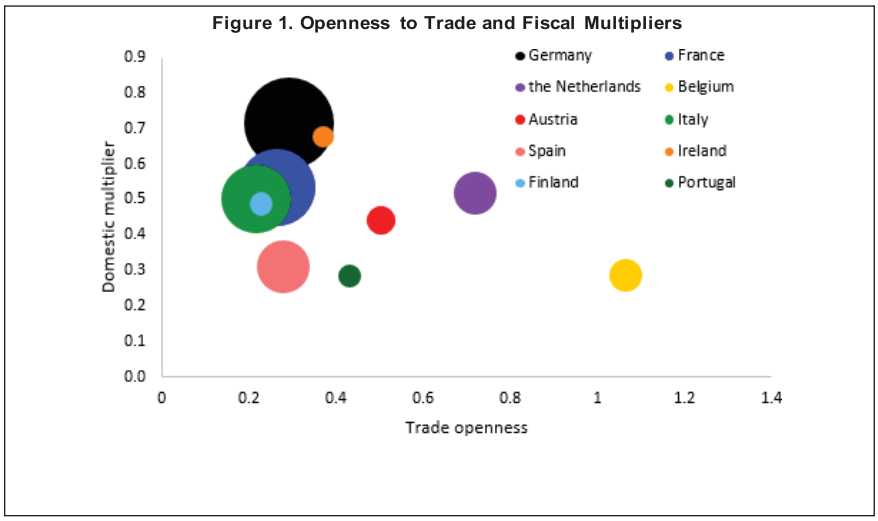
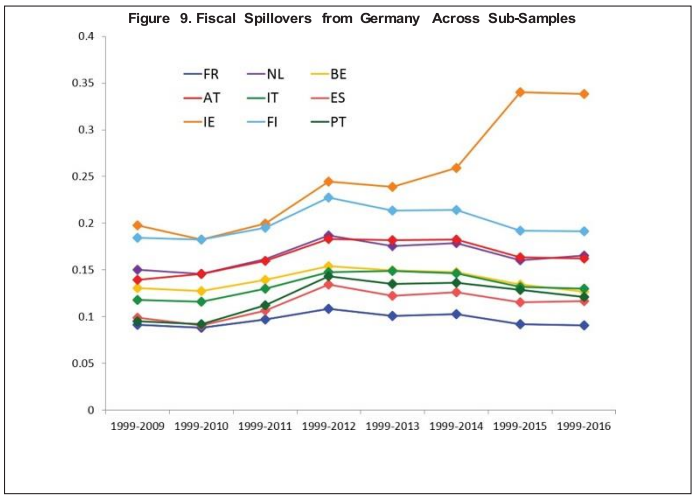


Figure 5 plots the evolution of fiscal spillovers from Germany to the same other nine other EZ countries as in the earlier analysis. The spillover is calculated in response to a 1 percent increase in government spending in Germany. Notably and not surprisingly, Austria is an outlier as a recipient of spillovers from Germany. The remaining eight countries are distributed roughly within the range of 0.01 to 0.2, with practically all those countries peaking over the 1999–2012 subsample. Finally, from the viewpoint of assessing the scope for recognizing spillovers in discussions of international policy coordination, Figure 5 offers good news: within country variation over time is quite limited.

Figure 5. Fiscal Spillovers in the Euro Area; source: Dabla-Norris et al. (2017)



All in all, in the absence of a federal budget, spillovers must be recognized as a tool. And to some extent, this does happen: Germany acknowledges benefits from keeping company with countries like Greece; it helps holding down the exchange rate!

4. A Qualitative Assessment within a Unified Framework for Studying Reforms, Deficits, and Debt in Fiscal and Currency Unions

A separately available Appendix to this chapter [Ioannides (2021), proposes a unified framework within which market integration, deficits, debt and market reforms may be studied in the context of monetary and fiscal unions. This framework may be summarized as follows.

Consider a world economy that consists of two countries (but the model can accommodate many countries, at the cost of analytical complexity) of different sizes but populated by individuals with identical preferences over a public good and a composite consumption good

which may be produced using a range of intermediates. Each intermediate may be produced by means of increasing returns to scale technologies using only labor as an input. With free entry into the production of intermediates a natural link is created for the significance of country size. A larger population allows the production of a greater variety of intermediates and thus increasing the typical individual's welfare. For a country with a given population, welfare may be increased by adopting technological improvements that improve labor productivity. Alternatively, one could think of market reforms, that are aimed at improving market entry, when it is impeded. Improving entry of firms producing intermediates readily increases welfare.

Allowing for international trade has a similar effect over conditions of autarky. Access to a greater range of intermediates improves welfare. However, international trade requires a means of payment. Each country can issue its own currency, which may be used in international trade. Demand for a greater variety of intermediates by both countries establishes an exchange rate when countries use different currencies. When countries are integrated through trade, exercise of national monetary policy creates intercountry spillovers. Such spillovers may be a way to motivate monetary union, that is the adoption of a single currency which is administered by a single authority, the common central bank. The design of monetary policy must take into consideration the differing impact of monetary policy in the two countries. An important analytical result that may be obtained when national currencies are strategic substitutes is that the weight of the smaller country's welfare on the design of the common monetary policy must be sufficiently greater than its population, so as to make it attractive for the smaller country to participate in the union.

Returning to each country, the provision of the public good may be financed by a mix of taxes, money issuance and debt. When countries are economically integrated through international trade, national taxes create issues of spillovers which are similar to those when each country pursues its national monetary policy. It is thus easy to see the need for a fiscal union. A second analytical result is the following. When considering a fiscal union within a monetary union, one wonders whether fiscal policy, as defined in this paper, might make participation in the fiscal union by a smaller country attractive or unattractive. Interestingly, fiscal policy decisions might in fact, depending on parameters, be strategic complements. This in turn suggests that the welfare weights associated with union-wide fiscal policy might not have to be sensitive to size, in the sense that they must be in the case of monetary policy. Finally, when debt is jointly issued, interesting questions regarding the role of structural reforms may be posed.

5. Concluding Remarks

In numerous ways that have been documented widely, the EZ is made up of very diverse countries. E.g, in a stunning calculation, reported by J. P. Morgan (2012), the major countries of the EZ are more diverse than the East Asian Tigers, the UK and its English speaking offshoots, and even countries whose names begin with the letter "M"! In spite of such diversity, catastrophic wars among the core European countries, that have fought many vicious

conflicts over the last few years, have been prevented. Given this political success, there ought to be vast scope for coming to terms with the international coordination that is necessary to carry out fiscal policy that operated along with monetary policy and is designed to optimize outcomes over the entire union. In addition to the conventional differences among countries that have been identified by the literature, this paper introduces two more: differences in the efficiency of fiscal systems and on the terms of sovereign borrowing.

The discussion here and its analytical backbone provide a simple deterministic framework for understanding the role of differences, proxied by size, in the interdependence of broad macroeconomic aggregates. The mechanism for setting country-specific fiscal policy is not independent from the conduct of monetary policy. The paper goes beyond Ioannides (2016; 2017) in allowing for debt finance under the different scenaria of international equilibrium, that is, international economic integration with national currencies and with a common currency, both in the presence of national fiscal systems. It allows us to examine in detail the setting similar to where Greece and the EZ found themselves since 2010, that is, given economic integration with a currency union, how willing should the union be (in our case, the large of the two countries) to negotiate with one of its members and prevent breakup of the monetary union.

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Chapter 15. Economic and Financial Asymmetries in the Euro Area

George Alogoskoufis* and Laurent Jacque**

Abstract

This paper provides a perspective on the euro area (EA), focusing on macroeconomic and financial asymmetries among its member states and the need for major and fundamental reforms. After surveying the evolution of EU macroeconomic and monetary cooperation and developments since the creation of the euro, and particularly the euro area crisis, we argue that the euro area is in need of fundamental fiscal, financial and labor market reforms. In addition to reforms currently discussed, a common EA budget of moderate size would help smooth out the asymmetric impact of macroeconomic shocks through the operation of automatic fiscal stabilizers. It would also help countries in recession face smaller national fiscal and financial consequences of such recessions, and would also partly address labor market fragmentation as it could be targeted to euro area wide unemployment insurance. It would also help in the avoidance of future crises if the scope of the ECB to act as a lender of last resort in times of crisis was expanded and officially recognized.

Keywords: Euro area, Monetary Policy, Fiscal Policy, Current Account, Asymmetries, Reforms

JEL Classification: E6, F3

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This paper has benefited from the comments and suggestions of seminar participants at Harvard, MIT and the Tufts/LSE Conference on Greece and the Euro

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1. Introduction

This paper provides a perspective on the Euro Area (EA), focusing on macroeconomic and financial asymmetries and the need for major and fundamental reforms.

We start by briefly surveying the evolution of monetary cooperation in the European Union (EU) since the collapse of the Bretton Woods System, the snake and the creation of the European Monetary System (EMS), the adoption of the euro and the post-2010 crisis. This survey is suggestive of the deepening of monetary integration in Europe, but also hints at a number of macroeconomic and financial asymmetries within the group of the original 12 Euro area (EA12) members from the 1970s, if not before, until the creation of the euro.

We identify four sub-periods in the evolution of monetary cooperation in the European Union. First, the period from the collapse of the Bretton Woods system of fixed parities in 1973, to the emergence of the EMS in 1979. Second, the period of operation of the EMS, until the creation of the euro in 1999. Third, the first ten years of the euro area, before the crisis of 2009-2010. Finally, we survey the period since 2010, when the euro crisis broke out, and discuss the response to the crisis.

In each successive sub-period monetary integration was becoming gradually deeper, evolving from the "snake" of the 1970s, to the EMS of the 1980s, the tighter EMS of the 1990s, with infrequent realignments, and, eventually with the creation of the euro.

We then focus on documenting the main macroeconomic and financial asymmetries in the euro area. For this purpose, the three largest euro area economies of Germany, France and Italy, which jointly comprise about two thirds of the euro area, are treated individually. The rest of the EA-12 economies are aggregated within two groups. The smaller economies in central and northern Europe, consisting of the Netherlands, Belgium, Austria and Finland, which we label the 'core', and the economies of the 'periphery', comprising Spain, Greece, Portugal and Ireland. It turns out that the economies of the 'core' have similar characteristics to Germany, while France and Italy share both 'core' and 'periphery' characteristics, with France being closer to the 'core', including Germany, and Italy closer to the 'periphery'.[166]

All periods were characterized by significant macroeconomic and financial asymmetries among member states in the core and the periphery, but also by different degrees of monetary integration.

We document these asymmetries, focusing on the evolution of macroeconomic aggregates such as GDP per capita, its growth rate, unemployment rates, inflation rates and current account balances. We also document financial asymmetries by focussing on the evolution of

[166] We list the countries in each group in descending order of economic size, as measured by their PPP adjusted real GDP in 2001. This is the year for which we calculate the weights that go into the construction of the group aggregates. These weights are the ones used in the Area Wide Model (AWM) database of the European Central Bank. See Fagan et al (2005) for more details.

short and long term interest rates, nominal and real exchange rates, fiscal balances and government debt.

With the deepening of monetary cooperation, in the evolution from the snake to the euro, some of these asymmetries were addressed, while others were not. When the euro was created, very little was done to address the remaining asymmetries, essentially shifting the burden of adjustment to individual euro area members and their fiscal systems. As a result, while asymmetries in inflation rates, and nominal interest rates and exchange rates were addressed by the creation of the euro, real, financial and external asymmetries widened after the creation of the euro, both before and after the euro area crisis.

In the first ten years of the euro, the remaining asymmetries resulted in the build up of significant external imbalances, and, eventually contributed to the eruption of the euro area crisis. The main financial asymmetric shock appears to have been the creation of the euro itself, which initially brought about the convergence of nominal and real interest rates between the periphery and the core. This convergence resulted in a widening of savings and investment imbalances in the periphery, which up until then had relatively high nominal and real interest rates, the widening of external imbalances, the buildup of external debt by the countries of the periphery, and eventually a euro area financial crisis. This process was exacerbated by the 'home' bias of banks in the countries of the euro area.

The euro area crisis was essentially an external debt crisis in an economic and monetary union with a single currency, but major economic and governance problem areas, such as major differences in the product mix, fragmented national labor markets, different fiscal systems, imperfect financial integration, lack of effective cross border financial regulation, an extremely low federal budget and lack of a lender of last resort to banks and sovereign governments. In this respect, the euro area crisis of the 2010s was at the end of the day no different than other regional financial crises involving indebted economies, such as the Latin American crisis of the 1980s and the Asian crisis of the 1990s.

A result of the major asymmetries and other economic and governance problems of the euro area is the fact that adjustment efforts since the crisis have shifted the burden exclusively towards the weaker economies in the periphery of the euro area, which suffered deep recessions, a significant rise in unemployment, continuous tax rises and exorbitant social costs for young workers and old age pensioners.[167]

Although financial market integration and effective regulation of financial markets have taken a priority since the 2010 crisis, the euro area remains a single currency area with significant real and financial asymmetries, segregated national fiscal systems, weak coordination of fiscal policies and a virtually non-existent federal budget. At the same time, the European Central

[167] The rise in current account deficits as a result of the lower real interest rates that followed euro area entry occurred in almost all of the economies of the periphery of the euro area. See Blanchard and Giavazzi (2002). Almost all of these economies faced a serious external debt crisis after 2010. The literature that focuses on the euro area crisis and its aftermath has expanded exponentially. See, among others, Lane (2012), O'Rourke and Taylor (2013), Baldwin and Giavazzi (2015, 2016), Orphanides (2015, 2017a,b), Brunnermeier et al. (2016), Kang and Shambaugh (2016), Papademos (2016), Stiglitz (2016), Wyplosz (2016), Benassy-Quere et al. (2018), De Grauwe and Ji (2018), Mody (2018), Pisani-Ferry (2018).

Bank (ECB) remains the only major central bank in the industrialized world which cannot function properly as a lender of last resort to governments and commercial banks. In addition, labor markets in the euro area remain fragmented, contributing to major differences in unemployment rates, which are exacerbated by the notoriously low degree of labor mobility in Europe.

Hence, not only does the euro area not satisfy the main criterion suggested by optimum currency area considerations, namely the absence of asymmetries and asymmetric shocks, it furthermore lacks the other two main criteria for macroeconomic stabilization, namely integrated labor markets and a federal budget that would act as an automatic stabilizer in the case of asymmetric macroeconomic developments. Furthermore, its response to major financial crises the Euro area is hampered by the lack of an effective lender of last resort, the creation of the European Stability Mechanism (ESM) notwithstanding.

In the final section of the paper we propose a number of reforms at the level of the euro area, which in conjunction with reform efforts at the national level in the countries of the periphery, would help address the main fault lines of the single European currency, and allow the euro area to become a area of prosperity for all its members.

We argue that the euro area is in urgent need of significant fiscal, financial and labor market reforms. In this we agree with among others Benassy-Quere et al. (2018). However, we also argue for the introduction of a moderate common EA budget, focused on a EA system of unemployment insurance. This would help smooth out the asymmetric impact of macroeconomic shocks through the operation of automatic fiscal stabilizers. It would also help countries in recession face smaller national fiscal and financial consequences of such recessions, and would also partly address labor market fragmentation. A significant part of the fragmentation of labor markets in Europe is the result of the lack of a cross border system of unemployment and health insurance. This could be addressed in a reform that would allow for a moderate EA budget as we propose.

This proposal goes against the arguments of those opposing a transfer union, chiefly the countries that are net contributors to the EU budget. We feel that these objections are misplaced. The EU and, in particular, the EA are already transfer unions, through the operation of the single market and the monetary union. They encourage significant economic transfers from weaker and less competitive economies, to stronger and more competitive ones, as suggested by the macroeconomic performance of the core and the periphery following the creation of the Euro area. A fiscal transfer union, which would partly correct the effects of such transfers through a fiscal redistribution is a logical counterpart of the single market and the monetary union. The transfers we suggest are modest, but certainly higher than the current EU ceiling of 1% of GDP. They would be concentrated in one cyclically sensitive key area which is unemployment insurance.[168]

[168] The current EU budget remains capped at below 1% of EU GDP, versus a federal budget of more that 20% of GDP in the other major single currency area of the industrialised world, the USA. The EA budget we have in mind could be capped at a maximum of 3% of EA GDP.

The objections of net contributors to a moderate increase in the EU budget could in principle be overcome by an appropriate rules based fiscal reform that would address moral hazard and other coordination problems.

The rest of the paper is thus as follows: In section 2 we survey the evolution of post war monetary cooperation in Europe, and document the gradual deepening of monetary cooperation among member states. In section 3 we survey the evolution of the euro from the period of euphoria between 1999 and 2007, to the post-2008 period of crisis. In section 4 we discuss optimum currency area considerations for the euro area. In section 5 we document the main macroeconomic and financial asymmetries between the 'core' and the 'periphery' countries of the euro area. Until the mid-1980s these asymmetries related to different levels of GDP per capita and growth rates, different inflation rates, different fiscal and external positions and differences in financial markets. Since the evolution of the European Monetary System to a greater DM area, with the abandonment of frequent realignments, and especially since the creation of the euro, some asymmetries, such as inflation asymmetries were addressed, but most of the others were not. In fact, external asymmetries became much worse as the creation of the euro resulted in a widening of external imbalances between the periphery and the core. This became the proximate cause of the euro area crisis. Since the euro area crisis external imbalances have been partly addressed, but this was at the expense of growth and employment mainly in the periphery, but also the rest of the EA, with the exception of Germany and some of the small core economies. We attribute these imbalances to the macroeconomic policy mix after the crisis, the absence of automatic fiscal stabilisers at the EA level and the inadequacies of the ECB's program of quantitative easing. In section 6 we put forward our proposals for reform, compare them with some of the proposals already being discussed and argue that muddling through is not a credible option. The final section summarises our conclusions.

2. The Evolution of Post War Monetary Cooperation in Europe

In this section we survey the evolution of monetary cooperation in Europe. The countries of the European Union were key members of the Bretton Woods system of fixed but adjustable exchange rates that emerged in the aftermath of World War II.

Since the abandonment of the Bretton Woods system in the early 1970s, one can identify four stages in the evolution of monetary cooperation in the European Union. First, the period from the collapse of the Bretton Woods system of fixed parities in 1973, to the emergence of the European Monetary System in 1979. Second, the period of operation of the European Monetary System, until the creation of the euro in 1999. Third, the first ten years of the euro

area, before the crisis of 2009-2010. Finally, the period since 2010, when the euro crisis broke out.

2.1. From Bretton Woods to the European Monetary System

The countries of the European Union were key members of the Bretton Woods system of fixed but adjustable exchange rates that emerged in the aftermath of World War II.

The Bretton Woods system departed from the interwar gold exchange standard in at least three respects: First, it provided for pegged exchange rates, which were however adjustable in cases of a "fundamental disequilibrium". Second, it permitted controls to limit international capital flows. Third, a new institution, the International Monetary Fund (IMF) was created, to monitor national economic policies and extend balance of payments financing to countries that required it.

The system was meant to address the three main weaknesses of the interwar monetary system, such as the high volatility of exchange rates, disruptive capital flows and the absence of an effective mechanism of international adjustment.

The Bretton Woods system became fully operational in 1958, with the removal of exchange controls for current-account transactions. Although the United States continued to run current-account surpluses, foreign direct investment by U.S. multinationals in Europe, as well as other capital outflows, produced an overall deficit in the U.S. balance of payments. As a result, dollar and gold outflows intensified.

Starting from 1960, efforts to address perceived deficiencies in the operation of the system assumed the form of perfecting interventions in the private gold market through the organization of the Gold Pool and the establishment of various formal liquidity-increasing techniques, such as the General Arrangements to Borrow (GAB), currency swaps among central banks, and special drawing rights (SDRs).

However, the U.S. focus on national economic priorities, the ineffectiveness of capital controls after the restoration of convertibility for current account transactions and the inadequacy of measures to contain the dollar glut marked the beginnings of the end of the Bretton Woods system.

As speculative pressures were mounting, in 1968 central banks stopped buying or selling gold in the open market and the Gold Pool was dissolved. Only foreign central banks could then buy gold from the U.S. Treasury. This effectively changed the Bretton Woods system from a de facto gold standard anchored through a fixed dollar price of gold into a dollar standard.

With a dollar standard, the inflation rates of the other countries in the Bretton Woods system had to move in line with the inflation rate in the United States. Given the fixed exchange rate to the dollar, and the overall expansionary monetary policy in the United States that started in 1964, foreign countries essentially had to inflate along with the United States.

Speculative pressures against the dollar gradually increased, and despite efforts of save the system, when confronted with monetizing further massive dollar inflows in March 1973, the other industrial economies decided to let their currencies float, effectively ending the Bretton Woods system.

Soon, the economies of the European Economic Community (EEC) realized that floating exchange rates implied major problems for intra-European trade and the operation of their evolving common community policies. Since the late 1960s, even before the collapse of the Bretton Woods system, and following the completion of the Customs Union ahead of schedule, they had been seeking to create an institutional framework within which they could stabilize their currencies against one another.[169]

In 1970, a study group of high level officials, chaired by the prime minister of Luxembourg Pierre Werner, was formed in order to study further steps towards monetary integration in Europe. The *Werner report,* which resulted from this group, described a process through which monetary union could be created by 1980. It recommended creating a central authority to guide and harmonize national economic policies, concentrating fiscal functions at the Community level and accelerating the integration of factor and commodity markets. Instead of a central bank and a common currency it proposed a 'European System of National Central Banks', and a progressive hardening of exchange rate commitments.[170]

Although the Werner Report was officially adopted, subsequent events precluded its application. Yet it provided the basis for the response of the EEC to the collapse of the Bretton Woods system in 1973. Since the Smithsonian agreement of 1971, EEC countries had sought to limit the fluctuations of their bilateral exchange rates in a range of ±4 1/2% in an arrangement known as the *snake*. They maintained this arrangement even after 1973. Denmark, Ireland and the UK, soon to be members of the EEC, also participated in the snake.

However, due to divergent monetary policies and inflation rates between the core economies of Germany, France and Italy, the snake was soon under pressure, despite the fact that it provided for short-term and very short-term financing facilities for weaker currencies. Inflation rates in the three "Core Large" EU economies are depicted in Figure 1. Both France and Italy experienced much higher inflation rates than Germany in the 1970s.[171]

Italy withdrew from the snake in early 1973. In January 1974 France was forced out, and adopted floating until July 1975, when it rejoined. It left the snake again in March 1976, due to the incompatibility of the German and French response to the oil crisis. In October 1976 there was an agreement on exchange rate changes, the so-called "Frankfurt realignment". Further realignments followed. Sweden withdrew in 1977.

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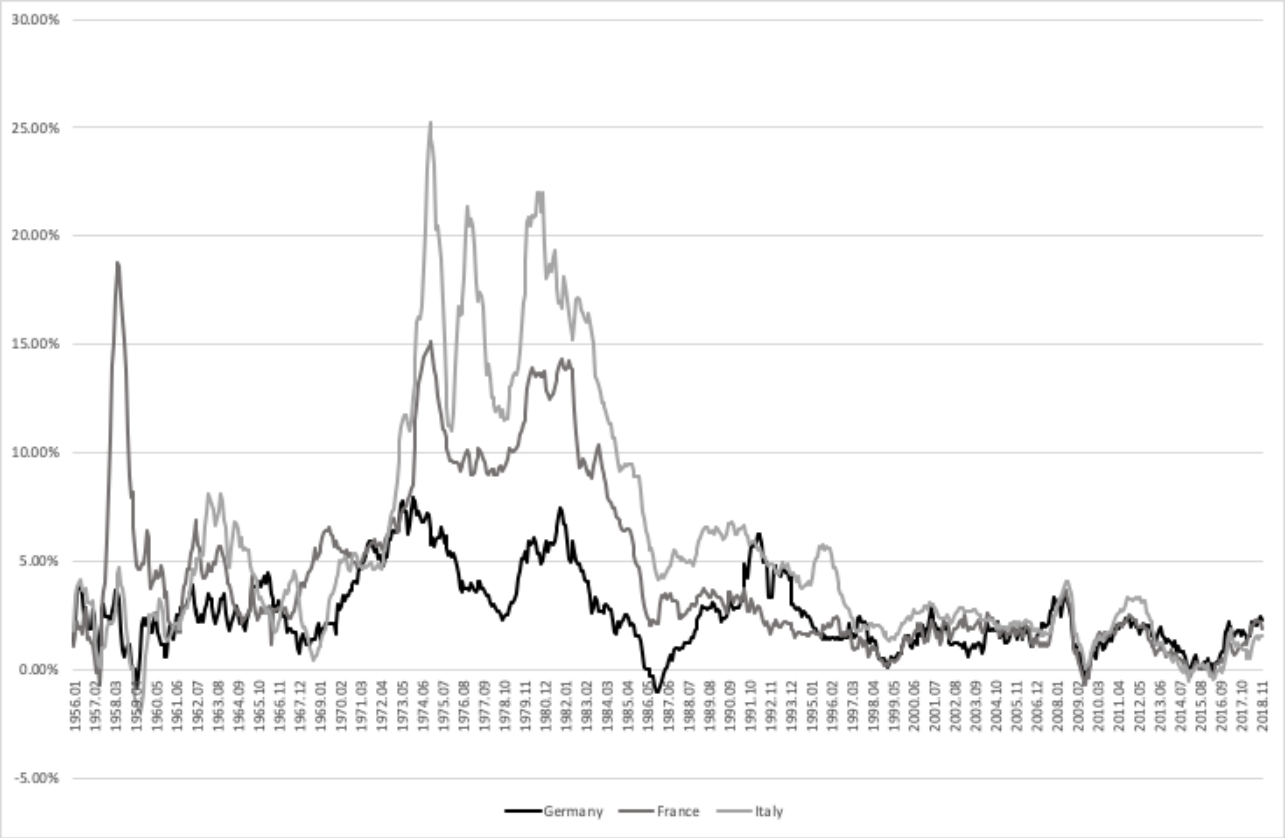
[169] In this paper, when we refer to the countries of the European Union (EU), we use the term European Community (EC) for the period before 1992, as this was the official name of the current EU.
[170] See Werner et al (1970).
[171] Figure 1 depicts annual inflation rates (% per year), based on monthly data for the Consumer Price Index. Source: OECD, *Main Economic Indicators*.

In the end the snake failed to provide the hoped for exchange rate stability, with the exception of short periods. Part of the reason was the first oil shock and its asymmetric financial consequences in Europe. A second asymmetry was related to the differing approaches within the EEC, with regard to the appropriate policy response to the oil shock.

Figure 1. Inflation in Germany, France and Italy, 1956-2017



2.2. From the European Monetary System to the Euro

The European Monetary System (EMS) was created in 1978 as a replacement for the snake, some years after the demise of the Bretton Woods system of fixed exchange rates. The objective was the same as the snake: to ensure relatively stable exchange rates in the EC. This stability was considered as a prerequisite for the effective functioning of the Community,

especially with reference to free intra-Community trade, the Common Agricultural Policy (CAP), and other common policies.[172]

The initiative for the creation of the EMS belonged to France, was agreed upon by Germany, and arrangements were concluded in two European Councils in Bremen in July 1978 and in Brussels in December of the same year.

2.2.1 The Structure of the European Monetary System

The European Monetary System was designed as a symmetric system, unlike the Bretton Woods system which was explicitly based on the US dollar. Its structure was defined by four elements:

First, a *common unit of account*, the European Currency Unit (ECU). The ECU was defined as a weighted average of the Community's national currencies. For each national currency a central rate was set against the ECU. For any two currencies, the ratio of their central rates against the ECU provided their central bilateral exchange rate, and the total of bilateral central rates defined the parity grid of the system.

Second, a mechanism was created for limiting fluctuations in nominal ex- change rates among the participating currencies, the *Exchange Rate Mechanism* (ERM). For currencies participating in the ERM, national central banks undertook to maintain market rates against any other currency in the system within predetermined limits relative to the bilateral central rates. These limits, until 1993, were ± 2.25%. For some currencies, wider limits were allowed, i.e., a range of ± 6% for the italian lira. Exchange market interventions had to take place when a bilateral rate reached the band limit. These were called marginal interventions. *Marginal interventions* had to take place through the central bank of the depreciating currency, but the central bank of the appreciating currency undertook to provide the central bank of the depreciating currency with unlimited credit, after the latter had used all of its foreign exchange reserves in that currency. *Intra-marginal interventions* also took place, by the central bank of the depreciating currency. These were not compulsory, and required the approval of the central bank whose currency was used in the interventions. Many central banks engaged in intra-marginal interventions, in order to stop their currency from reaching the lower limit of the exchange rate band. There was also a divergence indicator, which did not play an essential role in the operation of the system.

Third, a mechanism was foreseen for financing the required foreign exchange market interventions and current account deficits, the *financing facilities*. These were divided into three types: 1.The Very Short Term Financing Facility, 2. The Short Term Monetary Support, and, 3. The Medium Term Financial Assistance. The management of the first two belonged to the juris- diction of national central banks, while the third was under the jurisdiction of the Council of Ministers. The Short Term Monetary Support provided short-term credits for

[172] The Treaty of Rome had already acknowledged that the exchange rate of member countries was a matter of "common interest". Furthermore, even before the collapse of the Bretton Woods, and in view of the incipient instability of the dollar in the late 1960s, the European Council had authorized the Werner report on moving ahead with economic and monetary union (EMU). See Werner et al (1970).

financing deficits in the balance of payments, while the Very Short Term Financing Facility was aimed at financing interventions within the Exchange Rate Mechanism.

Finally, the system allowed for devaluations through the policy of *exchange rate realignments*. Initially the decision to realign the central parities was unilateral, but later, after 1981, collective decisions were required within the Community's Monetary Committee and the ECOFIN Council. After 1981, collectively agreed realignments did not cover the full inflation differential between the currency being devalued and the other currencies.

Those four elements were based on the experience of the post-war Bretton Woods system of fixed, but adjustable, exchange rates, which collapsed in the early 1970s, the Werner et al. (1970) report, and the European experience between 1973 and 1978, when the European Economic Community experimented with both flexible exchange rates and systems for limiting exchange rate flexibility, such as the 'snake'.

2.2.2 EMS Asymmetries

The EMS reduced fluctuations in nominal and real exchange rates in Europe, thus contributing to exchange rate stability. However, despite its explicitly symmetrical design, the EMS ended up operating asymmetrically.

Asymmetries emerged because German monetary policy was systematically more restrictive than the monetary policy of the other economies participating in the system and because the DM was an international reserve currency to a much greater extent than the other currencies of the EC.

The more restrictive monetary policy of the German Bundesbank led to the need for intra-marginal interventions by other central banks. Thus, monetary policy became more restrictive in all the countries that participated in the system. Otherwise, the pressure on weaker currencies became too strong and resulted in the need for downward realignments of their exchange rates (devaluations).

The more restrictive monetary policy of Germany can be seen when one compares German inflation to that of France and Italy, as in Figure 1 below. Even before the abandonment of the Bretton Woods system of fixed exchange rates, French and Italia inflation was slightly higher than German inflation. After the abandonment of the system in 1973, French and Italian inflation shot up, as both countries loosened their monetary policy, whereas German inflation went down as Germany tightened its own monetary policy. The inflation differentials remained high until the late 1980s.

Because of collective decisions about realignments, devaluations in countries with more expansionary monetary policies and higher inflation than Germany were never equal to the cumulative inflation differential between these economies and Germany. This was especially true for Italy. As a result of the limited realignments the real exchange rate of the Italian lira (IL), shown in Figure 2, appreciated by 36.4% in the first ten years of the EMS, between 1979 and 1988. The real exchange rate of the French franc (FF) appreciated by much less in the same period, 5.2%, both because of the lower inflation differential between France and

Germany and the higher nominal realignments secured by France. Thus, through the EMS, Germany was becoming more and more competitive vis-a-vis the EU economies with higher inflation.[173]

The second asymmetry of the system resulted from the international position of the German mark, which was an international reserve currency, unlike other currencies in the EMS. This meant that when there were disturbances in international financial markets affecting the exchange rate of the dollar or the yen versus the DM, there were pressures for realignments in the ERM. This happened because such international financial disturbances caused changes in the DM demand and supply in relation to other European currencies, resulting in significant pressure on the bilateral exchange rates of other ERM currencies against the DM.

The ERM faced considerable pressures in periods of significant dollar appreciations or depreciations, such as 1981-1983, or in 1986. These pressures lead to realignments of central parities.

Between 1986 and 1992, as a result of a tightening of monetary policy in France, Italy and other weaker currency economies, realignments virtually ceased. The EMS eventually became a broad DM zone, where monetary policy was determined effectively by the Bundesbank. The rest of the participating countries had to adapt to this policy in order to avoid real exchange rate appreciations and politically damaging devaluations. Thus, they ended up adapting to the monetary policy of the Bundesbank and 'borrowing' its anti-inflationary reputation. As a result, all EMS countries eventually achieved lower inflation. Figure 1 displays this trend for France and Italy. At the same time, as shown in figure 2, Germany was consolidating its gains in competitiveness, as it continued to have lower inflation than the rest.

All things considered, all countries came out with something out of this asymmetric system, with France and Italy achieving lower inflation and Germany gaining in competitiveness.[174]

The initiative for the creation of the single currency also belonged to France, which, early in 1988, with a memorandum of the Minister of Finance to his EEC colleagues, proposed the march towards the single currency. Italy agreed immediately and Germany had no option but to agree as well.

The European Council in Hanover in June 1988 set up an eight-member committee, chaired by Jacques Delors, then President of the European Commission, which would study the matter. The Committee, in April 1989, submitted a report to the Council of Finance Ministers (ECOFIN) proposing a three stage process for creating a single currency.[175]

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[173] In figure 2, the real DM exchange rates versus the French Franc and the Italian Lira are based on relative consumer price indexes. They are set equal to 100 in January 1979. Source: OECD, *Main Economic Indicators*.
[174] See Eichengreen (2008) for a historical account of the operation of the EMS within the context of the international monetary system. Giavazzi and Giovannini (1989) contain a detailed analytical treatment of the EMS. James (2012) traces monetary cooperation in Europe in the post-war period until the creation of the euro.
[175] See Delors Committee (1989) for more details.

Figure 2. The Real DM-FF and DM-IL Exchange Rates, 1979-1989

2.2.3 The Planned Path towards the Euro

The first stage envisaged capital account liberalization for the countries participating in the EMS. This was to take place until July 1990. No country would be allowed to maintain capital controls.

The second stage, which began on January 1, 1994, aimed at the greatest possible convergence of fiscal and monetary conditions and policies of EU member states, as enshrined in the subsequent Maastricht Treaty of 1992, in order to achieve fiscal convergence and price stability, which were deemed necessary and sufficient conditions for monetary integration.

The third stage was the monetary union itself, which would transfer all monetary policy decisions to an independent European Central Bank (ECB).

In late 1991, after an intergovernmental conference (IGC), all EEC member states signed the Treaty on European Union, in Maastricht, The Netherlands.

Under this treaty, the EEC was renamed the *European Union* (EU), and in addition to the Single Market program, EEC members agreed on a detailed timetable and conditions for adopting the single currency. The deadlines for the introduction of the new currency were adopted by the Madrid European Council in December 1995. This Council also decided that the the name for the single currency would be the *euro*.

The timetable stipulated that until January 1, 1994, the EU would complete the single market and all national parliaments would have ratified the Maastricht Treaty. It also provided for the prohibition of monetary financing of budget deficits, the lifting of all restrictions on the movement of capital and preparation for participation in the Exchange Rate Mechanism of the European Monetary System for the countries that were not part of it, as well as the political independence of central banks. When these conditions were satisfied, the second stage of Economic and Monetary Union (EMU) would begin.

The Maastricht Treaty on the European Union also provided for the adoption the so called *convergence criteria*. These consisted of targets for,

1. reducing budget deficits below 3% of GDP
2. reducing public debt below 60% of GDP
3. reducing inflation sufficiently close to the average of the three countries with the lowest inflation rates
4. reducing reducing short term nominal interest rates sufficiently close to the average of the three countries with the lowest nominal interest rates
5. participation in the ERM of the EMS for at least two years

Achieving these objectives was considered as a prerequisite for a country to participate in the third stage of EMU. The European Commission and the European Central Bank would report, in special Convergence Reports, whether a country did or did not satisfy these criteria.

2.2.4 The 1992-93 ERM Crisis

The complete abolition of capital controls since the early 1990s made the ERM extremely vulnerable, as demonstrated by the speculative attacks of September 1992 and August 1993. The proximate cause was again related to the main macroeconomic and fiscal asymmetries among the EU economies.

A series of adverse shocks broke down the defense mechanisms of the system, such as the mechanism for coordinating macroeconomic policies and the realignment of exchange rates.
In September 1992, the credibility of the ERM was tested and the system could not withstand the pressures. Both the Italian lira and the British pound sterling, which had joined only recently, were ejected from the ERM.

After a year of realignments and periodic crises until late July 1993, and following further pressure on the exchange rates of weaker currencies, the ECOFIN decided to extend the fluctuation margins to ± 15%, in order to defuse further pressures on central parities.

There were a number of shocks and imbalances that contributed to the 1992-93 ERM crisis, in addition to the chronic macroeconomic asymmetries among European countries.

Firstly, German unification, which transformed Germany from a net creditor to net borrower in the global economy. This also caused an increase in German inflation and led the Bundesbank to tighten monetary policy by raising interest rates.

Second, asymmetries between US and EU monetary policy. In 1992, due to the elections and the recession in the US, the monetary policy of the Fed was relaxed, and the dollar entered into a depreciation path against the DM that caused increased pressures on the ERM.

Thirdly, the political crisis in Italy. This took place at a time when there was a large increase in the fiscal deficit and public debt, which caused a crisis of confidence and speculative pressures on the Italian lira.

Fourth, the negative result of the referendum in Denmark on the ratification of the Maastricht Treaty, the prospect of the French referendum and the ambiguous attitude of politicians in Great Britain. These caused a more general crisis of confidence in the system and in the process of Economic and Monetary Union.

However, following the exit of the lira and sterling from the ERM and the widening of the fluctuation margins for the rest of the participants, the crisis was defused and was gradually contained. The march towards Economic and Monetary Union gathered pace.

2.2.5 The Final Stage of EMU

The third stage of EMU began on January 1, 1999, by irrevocably fixing the bilateral exchange rates of the currencies of the participating countries and the single currency, the euro. In May 1998 it was decided which countries would participate in the third stage of EMU. The selection of the 11 countries was based on the five fiscal and monetary convergence criteria of the Maastricht Treaty and convergence reports by the European Commission and the European Central Bank.

As can be seen in Figures 3 and 4, convergence on the government deficit front had been achieved since 1998, but was anything but sufficient. The average deficit of the original 12 was below the 3% threshold, but some countries were marginally close to that threshold. In addition, government debt as a percentage of GDP was much higher than the 60% target envisaged in the Maastricht treaty, and was not converging sufficiently quickly towards that target. Nevertheless, in the haste to include as many countries as possible among the initial group, the criteria were interpreted somewhat generously.

The third phase was completed on January 1, 2001 with the introduction of the euro in accounting form. From January 1, 2002 the euro became legal tender, with the introduction of cash in everyday transactions. On this day, the circulation of banknotes and coins and the swift (within two months) withdrawal of national currencies began throughout the euro area.[176]

[176] Marsh (2011) contains a detailed account of the political process that led to the creation of the euro.

Figure 3. General Government Deficit in the Euro Area of 12 (% of GDP): 1970-2017

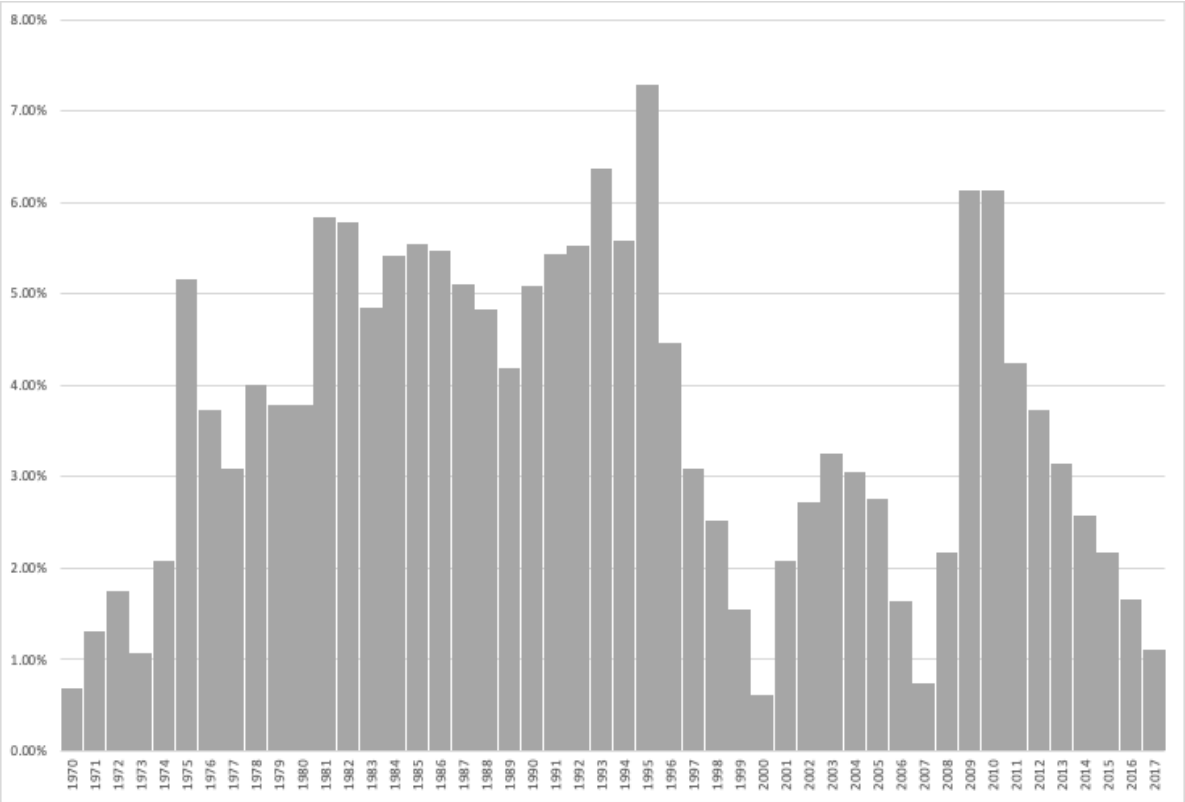
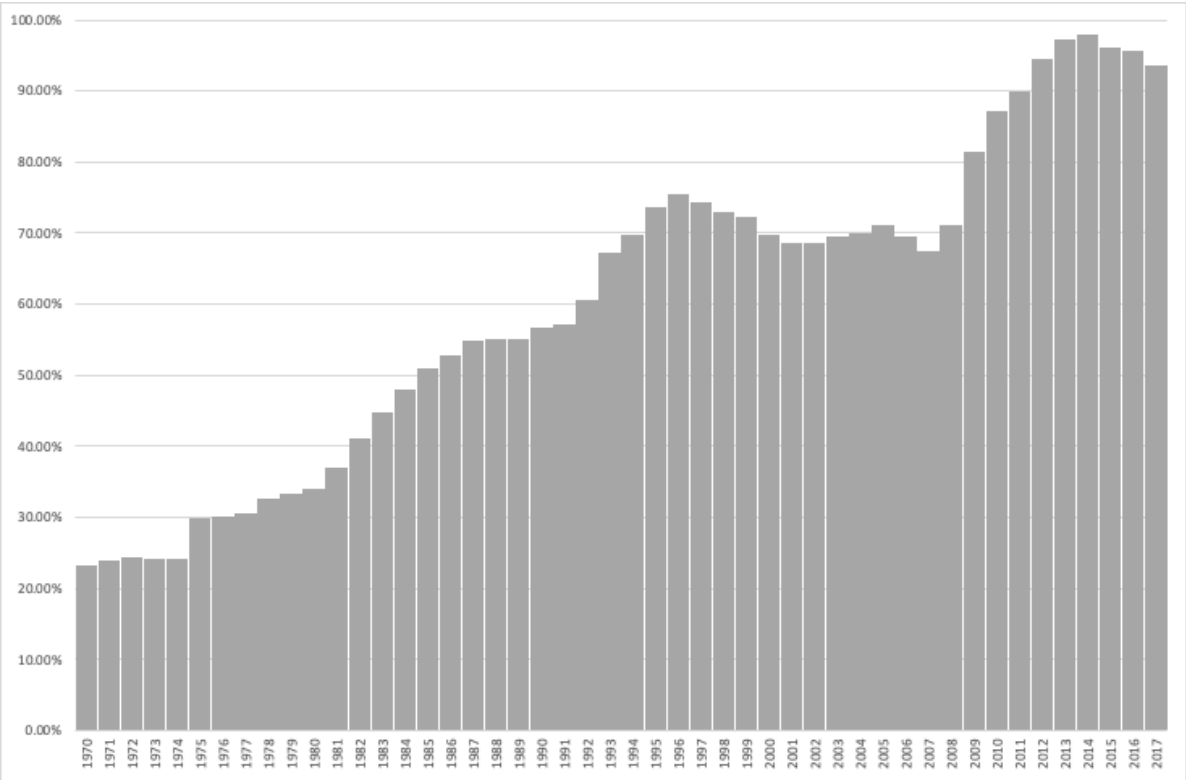


Figure 4. General Government Gross Debt in the Euro Area of 12 (% of GDP): 1970-2017



3. The Euro area Economy: From Euphoria to Crisis

From January 1, 2001 there is a single currency in the euro area economy and, therefore, a single monetary policy for all member states. This is decided upon and implemented by the European Central Bank which aims to ensure price stability.

A central pillar of macroeconomic policy coordination was supposed to be the Stability and Growth Pact (SGP). The pact required all economies in the euro area and the EU to maintain fiscal deficits below 3% of GDP, to pursue budgetary balance over the medium term and to ensure that public debt does not exceed 60% of GDP, or that it tends towards this objective.

The original Stability and Growth Pact provided for remedial action for those economies that did not meet their fiscal targets. The SGP was revised in 2005, after several economies, including Germany and France, failed to promptly correct their excessive deficits.

The revised Pact was more flexible regarding the time available for the correction of excessive deficits, but at the same time more demanding in terms of maintaining fiscal balance in so called 'good times'.

Countries were required to tend towards fiscal balance (zero budget deficits) during so called 'good times', by reducing their deficits by at least 0.5% of GDP annually. As this provision was not implemented strictly by all countries, the Eurogroup and the ECOFIN Council decided in 2007 to aim for fiscal balance for all countries by 2010. However, following the international financial crisis of 2008, the European Commission proposed and the ECOFIN Council decided to apply the pact in a more flexible way, as the EA economy entered a recession and the subsequently the euro area crisis threatened the very existence of the euro.

The first ten years of the euro saw new asymmetries develop in Europe as a result of the introduction of the single currency and the convergence of inflation rates and nominal interest rates. The new asymmetries appeared in the form of the development of current account imbalances between the "core" countries of the euro area and the countries in the periphery.

3.1. Macroeconomic Euphoria and External Imbalances

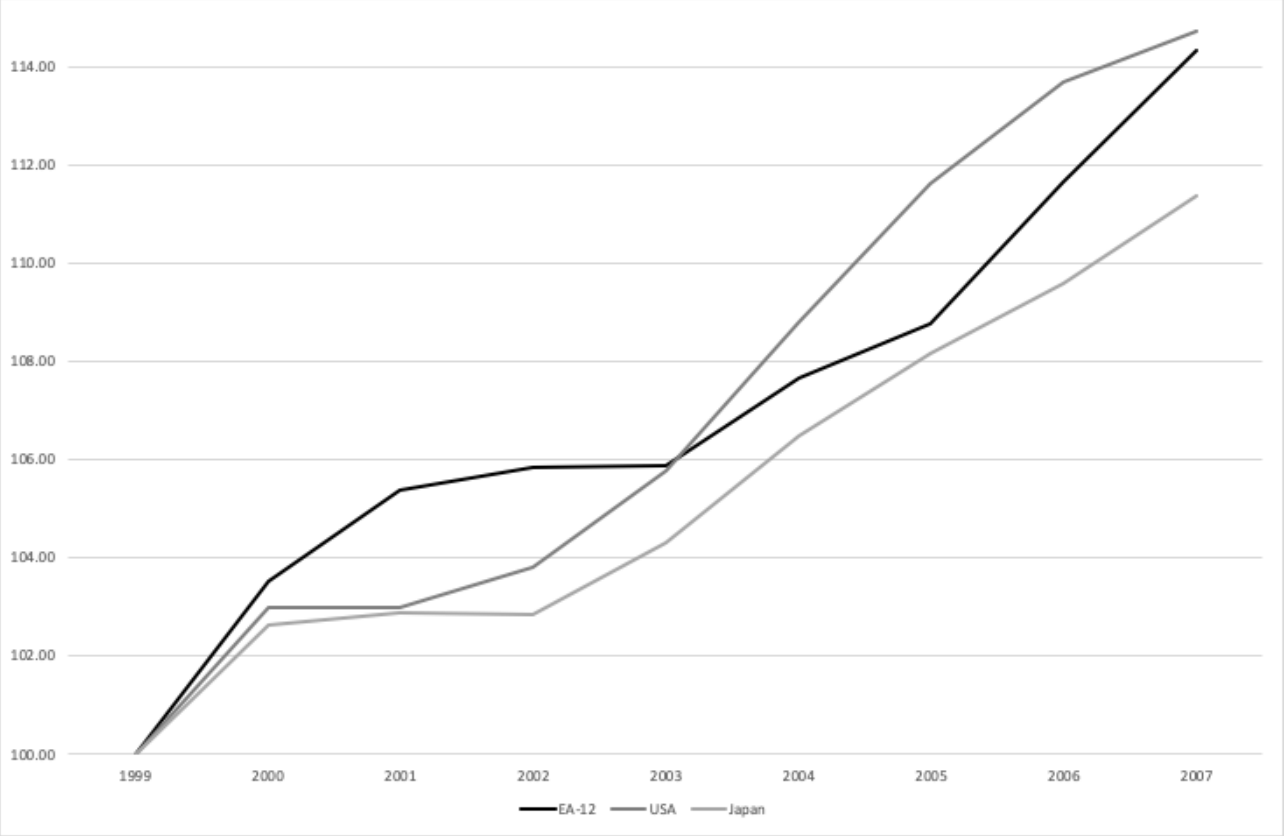
The first nine years of the euro constituted a period of macroeconomic euphoria throughout the EA. In most respects, the creation of the euro area appeared an unmitigated economic success.[177]

Growth rates remained high throughout the area, with countries in the periphery growing faster than Germany, France, Italy, and the smaller economies of the core. Inflation rates in the periphery converged further towards the low inflation rates of the core and

[177] In the remainder of this paper we shall concentrate on three groups of countries. First, the euro area of 12 (EA-12), which represents mainly the behavior of the three largest euro area economies (Germany, France and Italy). Second, the group of the smaller economies

unemployment rates were on a downward path, especially in the periphery. However, these first nine years of the euro saw new asymmetries develop as a result of the introduction of the single currency and the convergence of inflation rates and real interest rates. The new asymmetries appeared in the form of significant current account imbalances between, on the one hand, Germany and the smaller core economies and, on the other hand, Italy and the economies of the periphery. France remained somewhere in between.

Figure 5. Real GDP per capita in the Euro Area, the USA and Japan (1999=100): 1999-2007



3.1.1 Macroeconomic Euphoria

The evolution of real per capita GDP in the euro area of 12 (EA-12) is depicted in figure 5. Between 1999 and 2007, the first nine pre-crisis years of the euro area, real GDP per capita was growing at an average annual rate of about 1.7%. This was the same as in the USA and significantly higher than the average growth rate of 1.4% in Japan.

GDP per capita in the economies of the periphery was rising faster than the EA-12 average, about 2.6% per year. The same applied to the small economies of the core which also experienced higher than average growth rates at 2.0% per year. However, the average annual growth rates in the three largest economies were lower than the EA-12. (Germany, 1.7%, France 1.4%, Italy 1.1%).

Unemployment rates also fell significantly. For the EA-12, the average unemployment rate fell from 9.8% in the 1990s to 8.5% in 2000-2007. Average unemployment rates in the periphery fell even further, from 14.6% in the 1990s to 9.3% during 2000-2007. In the

smaller economies of the core average unemployment rates fell from 7.1% in the 1990s to 5.9% in 2000-2007.

The periphery also experienced the largest benefits in terms of further reductions of inflation. Average annual inflation rates in the economies of the periphery fell from 5.3% in the 1990s to 3.3% in 2000-2007.

There is no doubt that the first nine pre-crisis years of the euro area were a period of macroeconomic euphoria, especially for the economies of the periphery.

The proximate cause of the economic boom in the countries of the periphery of the euro area was the precipitous fall in their real interest rates, as, following the elimination of the devaluation premium, these interest rates converged with those of Germany and the smaller core economies.

3.1.2 Current Account Imbalances between the Periphery and the Core

However, not all was well. One of the main characteristics of the 1999-2007 period was the development of significant external imbalances between the economies of the periphery and Italy on one hand, and the core and Germany on the other. These external imbalances, resulted in the fast and excessive rise in international indebtedness of the countries of the periphery of the euro area, which made them extremely vulnerable in the aftermath of the international financial crisis.

Figure 6. Current Account Balances in the Euro Area (% of GDP): 1999-2007

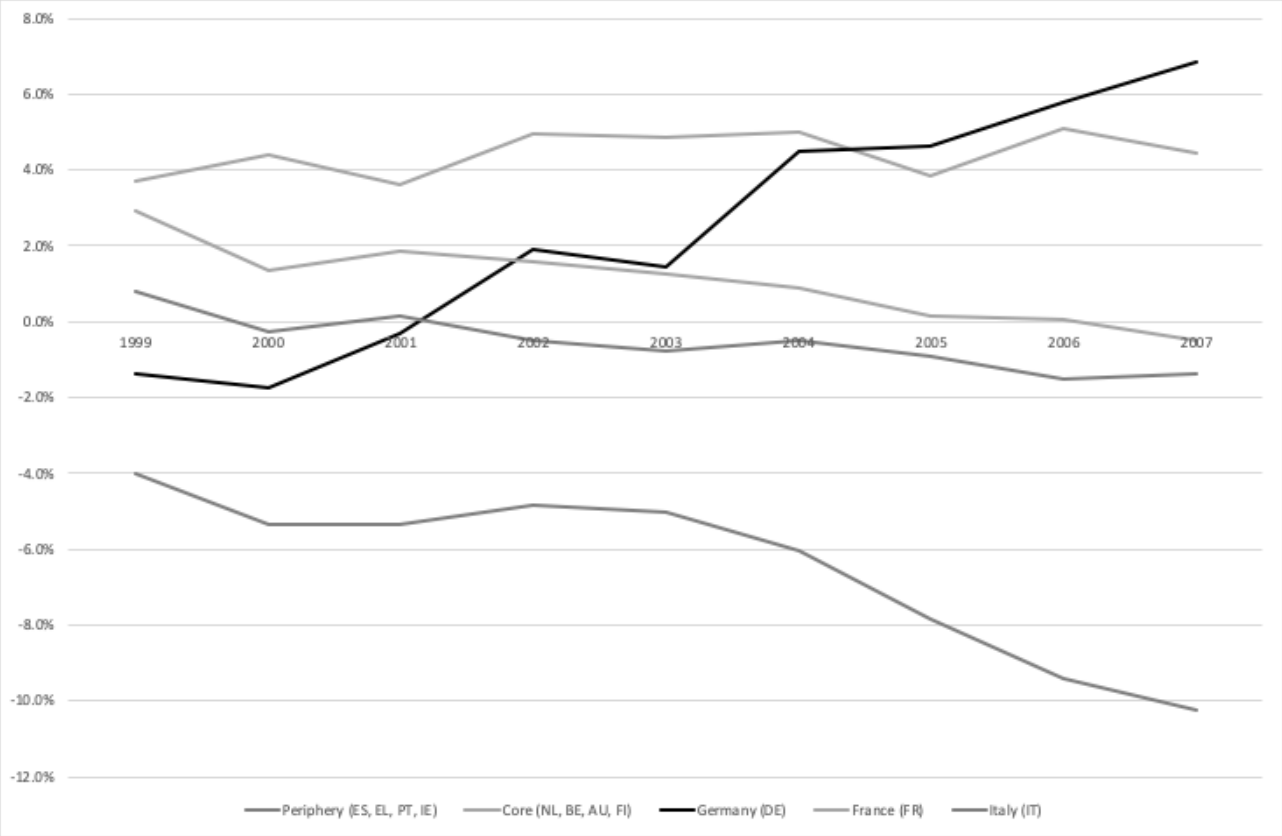


Figure 6 depicts the evolution of the average current account balances of Germany, France, Italy and the groups of smaller economies of the core and the periphery. The participation of the economies of the periphery in the euro area was associated with a significant widening of their current account deficits. On average, following the creation of the euro area, the current account of the EA-12 remained in a small surplus. The surplus rose from 0.1% of GDP in the 1990s to 0.4% of GDP in 2000-2007. However, the economies of the periphery saw their average current account deficit rise from 2.5% of GDP in the 1990s to 6.8% of GDP in 2000-2007. Furthermore the rise was almost continuous throughout the first nine years after the creation of the euro and reached almost 10% of their GDP in 2007. Italy also saw its current account surplus gradually move into deficit. These rising deficits were associated with current account surpluses in the rest of the euro area. The average current account surplus of the small core economies of the north rose from 2.4% of GDP in the 1990s to 4.8% of GDP in 2000-2007, but did not display a further significant trend in the 1999-2007 period. Germany moved from a small current account deficit of 0.6% of GDP in the 1990s to a surplus of 2.9% of GDP in 2000-2007. Italy displayed a similar if less pronounced pattern as the economies of the periphery. From a surplus of 0.6% of GDP in the 1990s it gradually moved to current account deficit averaging 0.7% of GDP in 2007. France displayed a positive but shrinking current account surplus. Thus, the first nine years of the euro area were characterized by widening current account deficits in the periphery and, to a smaller extent, Italy, and significant and rising current account surpluses in Germany and the smaller economies of the core.

The proximate cause of the external imbalances was the same as the proximate cause of the stronger post-euro boom in the periphery. The precipitous fall of real interest rates in the countries of the periphery which converged with those of the core countries.

A sharp drop in real interest rates is expected to lead to an increase in international borrowing, as private savings fall and investment rises. This is exactly what happened in the euro area. In addition, governments found it more attractive and easier to borrow at the lower interest rates that they faced.

For a long time the risks of low interest rates and the consequent widening of external imbalances were underestimated. Many even considered the fall in interest rates as highly beneficial and an indication of a successful financial integration between the periphery and the core.[178]

A significant problem was that much of the additional investment in the periphery was directed to non-tradable sectors, such as public investment and real estate, including housing. Hence, the increase in external indebtedness was not associated with an increase of the export capacity of the economies of the periphery.

Worse still, capital flows contributed to house price bubbles that eventually would inevitably burst, leading to losses for lenders, chiefly domestic banks, who had extended the loans. Due to the doom-loop between domestic banks and governments, which made governments eventually responsible for bailing out banks, the bursting of these house

[178] See Blanchard and Giavazzi (2002) for an early examination of this particular view.

price bubbles eventually led to a rise in government deficits and debts in countries such as in Ireland and Spain.

The inflows also contributed to the increase of wages and costs, which resulted in continuous losses of competitiveness that further contributed to the widening deficits in the current account. All the economies of the periphery - Greece, Ireland, Portugal and Spain - had inflation rates above the euro area average. Instead, all of the core economies, except the Netherlands and Luxembourg, had inflation rates below the average of the euro area.

Hence, the economies of the periphery were not investing sufficiently in sectors which would in the longer run help service their growing external debt. In addition, they were continuously losing international competitiveness, which undermined even their existing export capacity.

The influx of foreign capital also contributed to the smooth financing of budget deficits, which, especially in Greece and Portugal, rose again after these economies joined the euro area. However, the large accumulated deficits in the current account in Spain were not accompanied by higher corresponding public deficits.

It also has to be noted that adverse fiscal developments were not simply a problem of the periphery in the early years of the euro area. Even Germany and France experienced public debt accumulation of around 20 percentage points of GDP over this period. Italy's public debt accumulation was higher but of a similar order of magnitude. None of these countries, however, experienced major imbalances in the current account. On the other hand, Finland and Luxembourg had unusually large fiscal surpluses.

We shall examine the current account imbalances between the core and the periphery of the euro area in more detail in the sections that follow, as they are the key to understanding the causes of the euro area crisis.

3.1.3 Financial Imbalances

The cumulation of current account imbalances resulted in a corresponding cumulation of financial imbalances. These were transmitted to the economies of the core who were financing the current account deficits of the periphery, but also higher investment in the core countries.

The cumulative additional lending of Irish banks amounted to almost four times the country's GDP. For banks in Austria it amounted to 2.5 times GDP. For banks in Spain, Belgium and France cumulative new bank lending was over 100% of GDP.

By 2007, many euro area banks were not only too big to fail, they were also too big to saved. As the euro area was not a banking union, bailing out the banks remained a national responsibility. Banks in Ireland had liabilities equivalent to seven times Irish GDP. Banks in the economies of the euro area core were not in a much better position, with banks having lent more than twice the GDP of the average country. Bank lending was more than three

times GDP in Germany, France and the Netherlands. For Luxembourg, the multiple was astronomical.

In retrospect, it is surprising that these imbalances went virtually unnoticed. In a sense, this was the equivalent to the non-realization by the US authorities of the toxic nature of securities based on the soaring subprime mortgage loans.

By 2007, at around its tenth anniversary, the course of the euro area was assessed very positively. However, the euphoria gradually gave its way to anxiety during 2008, and deep anxiety following the collapse of Lehman Brothers in September 2008. Yet, before the eruption of the euro crisis, the mood was one of confidence and the risks were generally underestimated.[179]

3.2 The Euro area Crisis

Slowing growth and a growing realization of the risks in store reinforced each other for everyone, but especially for countries that had accumulated large stocks of public and private external debt due to the cumulation of large deficits in the current account.

In late 2008, interest rate spreads (risk premia), which were measured in a few basis points for years, began to climb, and reach up to two or three percentage points for Greece, Ireland, Italy and Portugal.

However, when it became clear in the summer of 2009, that the Lehman shock would not create a second Great Depression, spreads in the euro area fell significantly. Yet, this was not to last.

3.2.1 The Outbreak of the Crisis in the Periphery of the Euro area

Every crisis requires a trigger. For the euro area crisis this was the announcement of the significant widening of the fiscal deficit of Greece in October 2009.

[179] It is worth quoting from a short article from the Director General of Economic and Monetary Affairs of the European Commission and the Director of Fiscal Affairs of the IMF in December 2008. They concluded that, 'Most observers deem the euro a resounding success. However, in doing so, they often forget the magnitude of the original challenge. In this short article, we tried to look at the first decade of the euro area going back to its beginnings. The story is not over. Significant challenges lie ahead. As we write the world is living a financial and economic crisis of truly global proportions. For the euro area, the global crisis brings into sharp focus the challenges of maintaining macroeconomic stability and financial stability. ... Participation in the euro area also contributed to insulating participating countries from some adverse effects that the crisis might otherwise have had on their economies.' (Buti and Gaspar (2008)). The closing remarks of a speech given by the President of the ECB, in February 2009, were in the same wave length: 'When we look back over the first ten years of the euro, then we can do this with satisfaction. The sceptical forecasts before its birth have not materialised. The euro is a historic achievement. Its first ten years have been a success. ... We have many challenges to cope with in the years to come. Some are shared with the other important central banks in the world, like responding to the present economic and financial global situation and drawing all the lessons from the present turmoil.' (Trichet (2009)). Many others shared such views at the time.

This announcement set in motion a spiral of increases in interest rates, unsuccessful budget fiscal balancing efforts by Greece itself, the deterioration of Greece's credit rating, further interest rate increases, culminating in the 'Greek bailout' of May 2010.

The leaders of the EA decided it was unthinkable for a member country to default and opted for bailing out Greece. In this case, the 'lender of last resort' was not the ECB but the governments of the euro area and the International Monetary Fund, through an ad hoc financial instrument, the European Economic Stability Fund (EFSF). This eventually evolved into the European Stability Mechanism (ESM).

The bailout did not work well and proved insufficient. Markets reacted negatively as analysts concluded that Greece was not a clear path to debt sustainability. The constrained and politically charged design and implementation of the program did nothing to boost confidence in the ability of the euro area ability to handle the crisis. The risk premium on Greek bonds continued to rise.

Since early 2010, financial markets began to wonder if the failure of Greece to tackle the crisis could apply to other countries. These doubts - combined with the relentless logic of the debt interest rate vortex - was enough to raise the risk premium for other euro area members apart from Greece.

What proved decisive was whether a state's fiscal problems were combined with balance of payments problems. Only countries that borrowed primarily from international markets experienced problems. The borrowing costs of Portugal and Ireland rose sharply when the Greek bailout was announced.

This was the beginning of a 'sudden stop' of lending from international financial markets, which affected all countries with significant deficits in the current account. Ireland, Portugal, Spain and Italy. As it turned out, because of the 'home-bias' of European banks, euro area investors were much more wary about lending to other euro area governments than about lending to their own government.

The increase in the risk premium led to the adoption of rescue plans both for Ireland and Portugal, although with very different characteristics than Greece. In the case of Ireland, the imbalance that proved decisive was the situation of Irish banks.

3.2.2 The Doom Loop: From the Periphery to the Core

Both banks and sovereigns are subject to the possibility of a debt vortex. Banks borrow money short term to lend long term. For every euro borrowed short term, the bank makes long-term loans of twelve or more euros - this is the nature of leverage.

Leverage increases profitability but it also increases risks. Such risks materialize in bad times. The Irish banks had loans in 2008 approximately 7.8 times Irish GDP. The banking crisis led Ireland to a bailout in November 2010, which significantly increased its public debt. This was the first example of the 'doom-loop' between bank debt and sovereign debt.

The Irish bailout exacerbated the crisis. It was followed by Portugal in May 2011 and the second Greek bailout in July 2011.

In July 2011, the second Greek package was agreed in principle, but one of its elements inflamed the overall situation. As part of the EA leaders' new view that the private sector should bear part of the cost of the bailout, private holders of Greek government debt would see about half the face value of their holdings disappear, in what was euphemistically called the Private Sector Involvement (PSI).

This was a wake-up call for investors who still found the Maastricht Treaty's no-default clause credible. The markets began to demand higher yields on the government bonds of Belgium, Spain and Italy. Italy in particular, was a deadly threat to the euro area, given the size of its economy and its huge debt. The doom-loop was moving from the periphery towards the core.

3.2.3 Fiscal Adjustment, Recession and Contagion

Budget cuts in the periphery, in the aftermath of the 2010 crisis, exacerbated the problem, as countries in rescue programs or those involved in the debt vortex had no other option but to cut their budget deficits.

The euro area as a whole saw a primary deficit of about €350 billion in 2010 to be reduced to only €10 billion in 2014. This was a massive recessionary shock - equal to four percentage points of the EA economy.

Budget cuts came from both the countries of the periphery and from the core countries that had not faced a debt crisis. This was because the 2009 recession had pushed many other countries over the 3% threshold for the deficit of the general government envisaged in the stability and growth path.

Greece, Ireland, Italy, Portugal and Spain accounted for about 48% of the budget cuts, although they represent only one third of the GDP of the euro area. However, budget cuts in Germany accounted for 32% of the total, and those in France 13% of the total budget cuts in the euro area.

Because budget cuts were mainly tax increases, and to a lesser extent primary expenditure reductions, the negative repercussions on economic activity were even greater. Hence, in 2011, the euro area was again in recession.[180]

Things were plainly going from bad to worse. Each attempt to end the crisis seemed to make matters worse.

By this time, the contagion spread all the way to France. Its debt was downgraded and market yields rose substantially above those of other core EA nations like Germany and the smaller economies of the core. British Prime Minister Gordon Brown unhelpfully suggested that Italy and France might need a bailout.

[180] Alesina et al (2015) and Callegari et al (2017) have investigated the impact of this contractionary fiscal mix on the EA economy. See also Alesina et al (2019).

The Belgian problem – domestic banks in trouble due to Greek lending – spread to Cyprus. Its banks were severely affected by the Greek debt write down, so the nation asked for a bailout in June 2012 (granted in March 2013).

Needless to say, a crisis that threatened Italy and France was a crisis of global dimensions. This was no longer an issue of Greece and the other smaller economies of the periphery. This had the potential of blowing up the euro area and the EU itself. The world economy was looking at another Lehman-sized shock. With EA leaders manifestly incapable of mastering events, something had to be done.

3.2.4 "Whatever it Takes"

That something was a forceful intervention by ECB President Mario Draghi, in his now famous July 2012 speech. He told markets that the ECB would do "whatever it takes" to keep the euro area together.

That did the trick. It switched expectations from 2011 and 2012's 'doom-is-inevitable' back to the old 'we-will-get-through-this-thing' expectations of 2009 and 2010. As the ECB backed that statement with its quantitative easing program, borrowing costs for the affected countries gradually returned to pre-crisis levels

The basic switching mechanism that Draghi triggered is a a direct corollary of the debt-vortex logic. The rush to unload debt is driven by fear. The fear is driven by the suspicion that everyone else will sell a nation's debt, thus driving borrowing costs up to the point where the nation actually faces such fiscal difficulties that it is threatened with default. But if there is a debt buyer-of-last- resort – someone who can buy unlimited amounts of debt – the suspicion dissolves and investors are happy to hold the debt. This is what Mario Draghi did in the summer of 2012. It worked.[181]

3.2.5 Proximate Causes of the Euro area Crisis

The proximate cause of the EA crisis was the rapid unwinding of intra-EA borrowing imbalances between the periphery and the core. The built up of these imbalances occurred in the 2000s, prior to the crisis. Some of this was to private borrowers (especially in Ireland and Spain) and some of it to public borrowers (especially in Greece and Portugal), but in every case the difficult debt mostly ended up as government debt. Often private over-indebtedness ends up on governments balance sheets, so that the rise in public debt is more a consequence than a cause of a financial crisis.

The sudden stop became a crisis rather than a temporary problem since EA members could not devalue and the ECB could not bail out governments, as was the case in the US crisis of 2008-09.

[181] A detailed analysis of the euro area crisis, focusing on external and financial imbalances can be found in Baldwin and Giavazzi (2015).

A confidence crisis ensued, first about the countries of the periphery, but later also about some of the core countries, regarding their ability to service their public and private external debts. This was exacerbated by the unsuccessful efforts to address the debt problem.

The proximate causes of the crisis, external imbalances and lack of crisis management mechanisms, suggest three sorts of underlying causes: 1. Macroeconomic and financial asymmetries and policy failures, 2. Lack of institutions to absorb shocks at the EA level, 3. Crisis mismanagement.

Some of these failures involved unanticipated events. Others were a failure to implement the provisions agreed in the Maastricht Treaty. Others, such as the inability of the ECB to act as a lender of last resort in the initial phases of the crisis, or the lack of appropriate institutions to tackle the asymmetric impact of major shocks are more fundamental, and call for major euro area reforms.

4. Optimum Currency Area Considerations for the Euro Area

The politically-motivated launch of the euro in 1999 never met the acid-test of what economists have come to call an *optimum currency area*. Nevertheless, the considerations relating to optimum currency areas can prove extremely useful in thinking about reforming the euro area in order to address its main fault lines revealed by the crisis.

What are these considerations? The optimum currency area literature poses a seemingly simple question. If we forget about national boundaries and focus purely on economic relations, which is the best constellation of countries that can share a single currency. In answering this question, it considers the benefits and costs from giving up national currencies, whose exchange rates can potentially change, and substituting them by a single currency.[182]

The literature stresses four potential benefits from the adoption of a single currency. First, the reduction of cross border transaction costs, from the elimination of the need to exchange different currencies, second, the increase in transparency, that makes prices in different countries easily comparable, third, the elimination of currency risk, associated with changes in exchange rates, and fourth, applicable to countries with inflationary monetary policies, the switch to a low inflation monetary policy.[183]

The potential costs from the adoption of a single currency is the cost of the loss of the ability of each country to use monetary and exchange rate policy to tackle the undesirable macroeconomic consequences of shocks that impact the various economies asymmetrically, and, potentially, the loss of the ability of each country to use its monetary

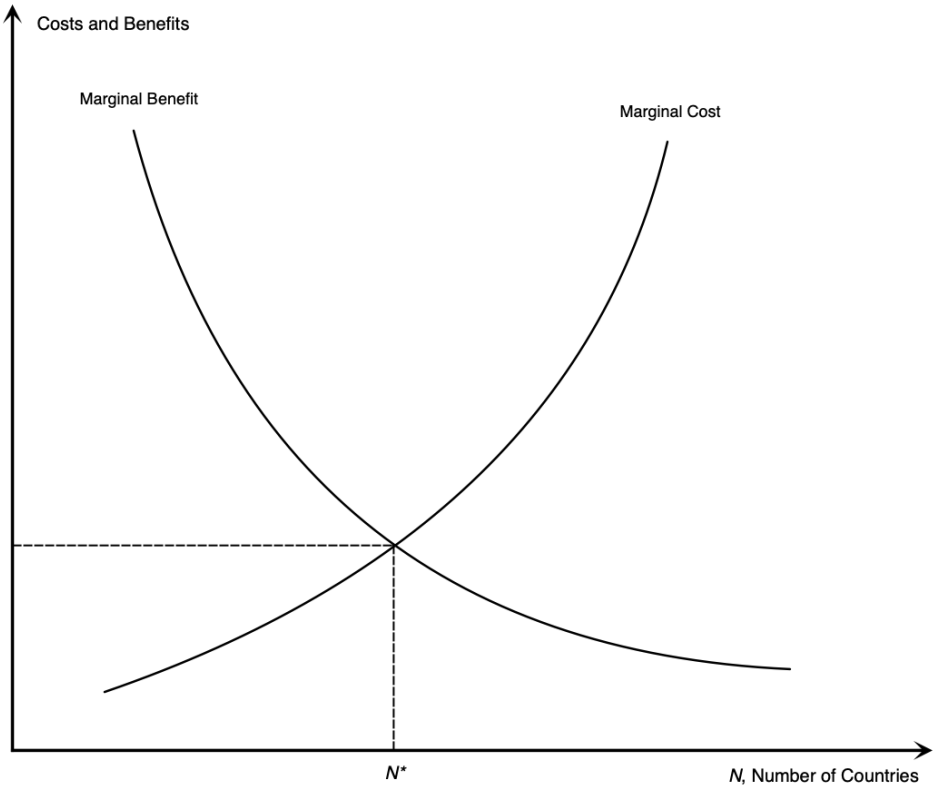
[182] This question was first posed, and partially answered, by Mundell (1961) who is rightly considered as the originator of this literature. McKinnon (1963) and Kenen (1969) were early major contributors to this literature. The literature was revived in the 1980s, as additional considerations were added. A survey of the so called 'new' theory of optimum currency areas can be found in Tavlas (1993).

[183] This last argument presupposes that the central bank administering the single currency is politically independent and cares mostly about inflation, something that applies to the euro area.

policy in choosing the appropriate inflation tax, and/or combination of inflation and unemployment, according to its own preferences.[184]

Assuming that the marginal benefit of adding a country to a currency area is positive and declining, and that the marginal cost is rising as additional countries are added, the number of countries that constitute an optimal currency area can be theoretically determined as in Figure 7, at the point where the marginal benefit of adding a country is equal to the marginal cost.

Figure 7. Benefits and Costs from Admitting Additional Countries into a Single Currency Union



The higher the position of the marginal benefit curve and the lower the position of the marginal cost curve in Figure 7, the larger is an optimum currency area, in the sense that more countries are included. What determines the position of the marginal benefit and marginal cost curves?

With regard to the position of the marginal benefit curve, a high potential trading volume among the participating countries would result in higher marginal benefits from the

[184] Given that most macroeconomists accept the Friedman (1968) doctrine that there is no long-run tradeoff between inflation and unemployment, this latter argument is not widely accepted.

reduction of transaction costs and exchange rate uncertainty. This was an argument put forward by both Mundell (1961) and McKinnon (1963), who gave emphasis to the degree of economic integration and openness. Hence, countries that are more economically open, geographically close and economically integrated, will have significant trading volumes among themselves and, therefore, higher marginal benefits from sharing a common currency.[185]

The inflation criterion, also emphasized first by McKinnon (1963) and later by Mundell (1973), is more questionable. Whereas it may be a benefit of a high inflation country to participate in a low inflation monetary union, and adopt its anti-inflationary credibility, it may be a cost for the other participating countries to accept a high inflation economy in a monetary union.[186]

With regard to the position of the marginal cost curve, the original considerations proposed by Mundell (1961) emphasized the degree of cross border factor and, especially, labor mobility. If cross border labor mobility is high, then a country hit asymmetrically by an adverse employment shock will not suffer from persistent unemployment, because the unemployed will migrate to high employment countries in the monetary union. Hence, increased labor mobility can reduce the marginal costs of joining a monetary union from the loss of the domestic monetary policy instruments, such as the interest rates and the exchange rate.[187]

Kenen (1969) gave emphasis to the degree of product diversification. His argument was that countries with a relatively diversified product mix were less likely to suffer from the impact of industry specific shocks. Hence, an increased diversification of the average product mix of participating countries will tend to shift the marginal cost curve of joining a monetary union downwards.

Another important criterion which was first emphasized by Kenen (1969) is the existence of a significant federal budget, that results in automatic transfers towards countries that are hit by an adverse asymmetric shock, from countries that have not been hit by the shock. The higher the fiscal transfers from a high federal budget, the lower the costs of joining a monetary union in the presence of asymmetric shocks. The fact that the EU federal budget is extremely low, around 1% of EU GDP, is a factor that keeps the marginal cost curve at a

[185] This is a criterion that is obviously satisfied by the EU countries, which are all geographically located in Europe, have eliminated trade barriers and created a single market and have high trading volumes among themselves. Obviously this criterion is stronger for the economies of the core than the periphery, which are geographically more detached.

[186] This may be one of the reasons why the Maastricht treaty envisages convergence of inflation rates and nominal interest rates as a prerequisite for acceptance into the euro area. The inflation tax argument is also a justification for the fiscal criteria, of budget deficits lower than 3% of GDP and government debts tending to 60% of GDP of an applicant.

[187] This also applied in principle to the EU, as the free movement of people is one of the four fundamental freedoms of the Treaties, along with the free movement of goods, services and capital. In practice however, because of both cultural, administrative and tax-benefit considerations, labour markets in the European Union remain segmented.

higher level, suggesting that due to the small size of the EU federal budget, the optimal euro area is probably on the low rather than the high side.[188]

Finally other criteria that affect the position of both the marginal benefit and the marginal cost curve include the homogeneity of national preferences and the existence or not of political solidarity among member states in a monetary union.

One cannot, and in any case would not want to use these optimum currency area considerations to determine in an absolute fashion whether the current euro area is an optimum currency area or not. In all probability no single currency area is an optimum currency area, including the United States. However, on prima facie grounds, admitting the countries of the periphery into the EA may have been premature, as they did not satisfy some of the important optimum currency area criteria suggested by the literature.

In any case, as O' Rourke and Taylor (2013), among others, have recently argued, the United States is much closer to the optimum currency area criteria than the euro area.

First and foremost, US markets are much more closely integrated that EA markets, as cross border inter-state trade amounts to 66% of US GDP, whereas cross border inter-country trade amounts to only 17% of EA GDP.

Second, with regard to the asymmetric impact of shocks, there do not seem to major differences between the US and the EA. The average correlation coefficient of GDP growth rates across US states in 0.46 and across EA countries it is 0.50. Macroeconomic asymmetries seem to impact the EA and the US in roughly the same degree.

However, the US is far ahead of the EA with regard to the labor mobility criterion. The average share of people in a US state born outside that state is 42%, while the equivalent share in a EA country is only 14%. On the basis of this criterion, labor mobility is four times larger in the USA than in the EA.

In addition, the US is far ahead on the fiscal federalism criterion, which is related to fiscal transfers and the effectiveness of automatic stabilizers in the presence of shocks that affect states and countries asymmetrically. In the US about 30% of a state income shock is offset through federal fiscal transfers. In the EA, the relevant percentage is only 0.5%. Thus, the low level of the EA federal budget relative to the US has major implications for the ability of the EA to address shocks with an asymmetric impact through transfers from countries not affected by the relevant shock.

[188] This so-called fiscal federalism criterion was investigated by Sala-i-Martin and Sachs (1991), who pointed to the large automatic transfers across US states, due to the large US federal budget of more than 20% of GDP, and the federal tax benefit system. In effect a federal budget acts as an automatic stabilizer in the presence of shocks that have asymmetric effects, mitigating their impact. A small federal budget, of the order of 1% of GDP, such as the EU budget, is clearly an ineffective automatic stabilizer. Darby and Melitz (2008) have documented the positive impact of automatic stabilizers in the OECD economies, while Bargain et al (2013) demonstrate that a bigger EU federal budget would have mitigated the adverse effects of the euro area crisis for the economies of the periphery, by absorbing about 10-15% of the shock.

Given that macroeconomic and financial asymmetries seem to have increased following the creation of the euro, as we shall show below, these considerations suggest the direction of the reforms that would take the euro area closer to an optimum currency area.

5. Macroeconomic and Financial Asymmetries in the Euro area

In our narrative of both the evolution of monetary cooperation in Europe, and the operation of the euro area, both before and after the crisis, we have kept alluding to macroeconomic and financial asymmetries as a root cause of the problems of all cooperative monetary regimes before the creation of the euro, and the operation of the euro area itself. Economic and financial asymmetries play a key role in the optimum currency area literature as well. In this section we concentrate on taking a closer look at the nature of these asymmetries in the case of the euro area.

We concentrate on the original euro area of 12. We consider asymmetries between the large economies of the euro area, which were also founding members of the EEC, the smaller core economies of central and northern Europe, and the smaller economies of the European periphery. The three large euro area economies of Germany, France and Italy account for about two thirds of the GDP of the euro area. Hence, the aggregates for the euro area of 12 (EA-12) mainly reflect these three largest economies. The smaller core economies (The Netherlands, Belgium, Austria and Finland), account for about 15%, and the economies of the periphery (Spain, Greece, Portugal and Ireland) account for 17.5% of the GDP of the EA-12, and are treated as the core and the periphery respective.[189]

5.1. Macroeconomic Performance in the Euro Area

Before we focus on euro area asymmetries it is worth examining the overall macroeconomic performance of the euro area. To put it in perspective, we shall compare it to the macroeconomic performance of the USA, the dollar area, which is roughly the same size as the euro area.

A comparison of macroeconomic performance in the euro area of the original twelve members (EA-12) and the USA suggests that he countries of the EA-12 had higher growth rates of GDP per capita in the 1960s and the 1970s. Since the beginning of the 1980s the US growth rate overtook that of the EA-12. Thus, during the two decades of deepening monetary integration, that resulted in the eventual creation of the euro, the EA-12 was lagging behind the US in terms of growth of real per capita GDP. For the first 8 years, since the creation of the euro, the EA-12 was growing as fast as the USA, albeit at a slightly lower rate than in the previous two decades. Since the financial crisis of 2008-09 the growth performance of the EU12 has been significantly worse than that of the USA. The EA-12 real GDP per capita essentially stagnated, as it grew only at 0.1% on average between 2008 and 2016. Since 2008, the growth rate of real GDP per capita in the USA was 0.5% per year, much higher than in the EA-12.

[189] These weights are based on the Area Wide Model (AWM) database of the European Central Bank. They are GDP based, adjusted for PPP, and reflect the PPP adjusted real GDP of each particular economy as a share of the Euro area economy GDP in 2001. See Fagan et al (2005) for more details.

This worsening of the EA12 relative macroeconomic performance is also reflected in unemployment rates. Whereas the countries of the EA12 had significantly lower unemployment rates in the 1960s and 1970s, unemployment rates have remained persistently higher than in the US since the early 1980s. This is a well documented fact, and has not been reversed by the creation of the Euro area. In fact, EA-12 unemployment rates rose significantly after the 2008-09 financial crisis, as also happened in the USA.[190]

Where the euro area seems to have outperformed the USA is in the evolution of inflation and the current account. Whereas average inflation rates in the countries of the EA-12 were higher than in the USA from the 1960s to the end of the 1990s, the creation of the euro area has resulted in a significant improvement in inflation performance, both in absolute terms and in relation to the USA. Average inflation in the EA-12 was about 2% in the 2000-2007 period, versus 2.8% for the USA. Inflation fell even further in the post crisis years of 2010-2016, to 1.3% in the EA-12 and 1.6% in the USA.

The divergence in current account balances is even more in the EA's favor. While the USA has been running significant current account deficits since at least the early 1970s, amounting to more than 3% of GDP in the last 15 years, the EA12 has been running surpluses, which have risen to 1.6% of GDP on average in the years since the crisis,

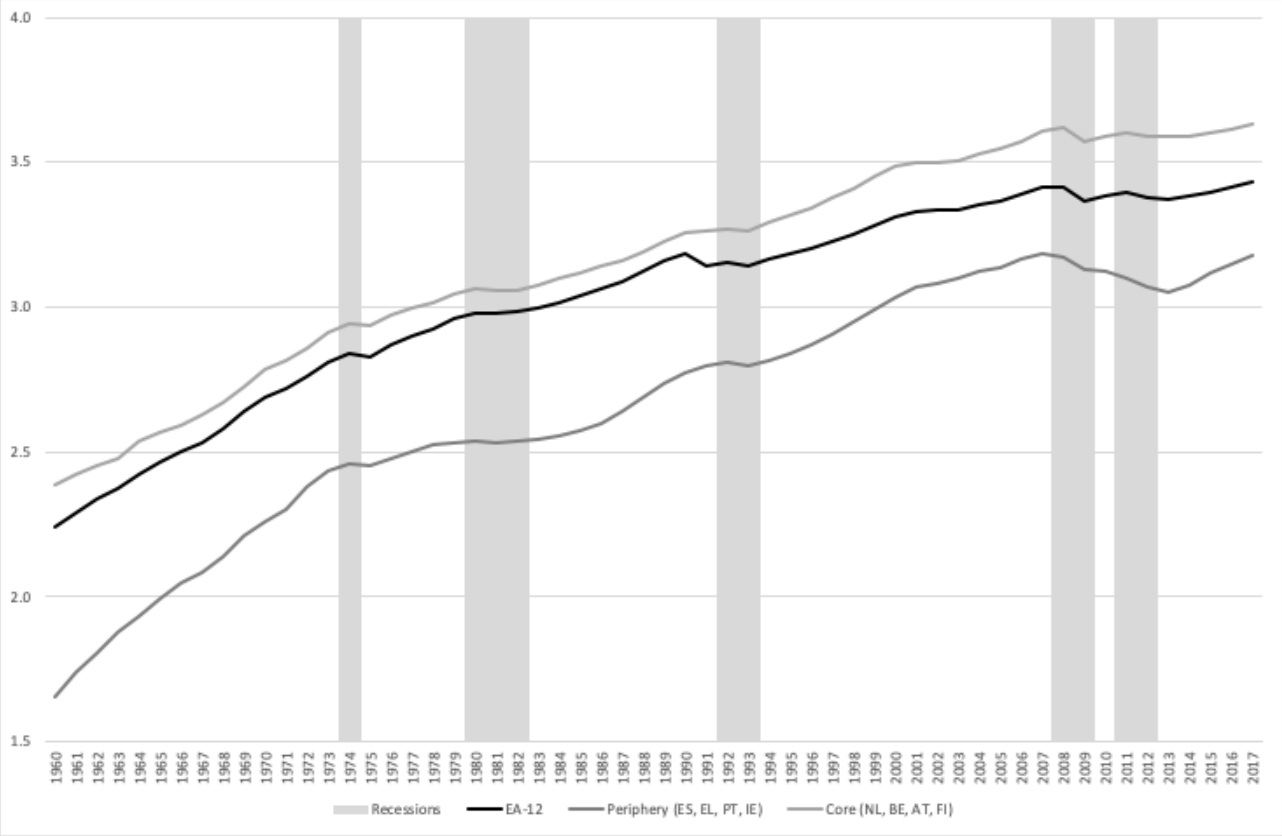
However, the macroeconomic performance of the EA has been extremely uneven. It is characterized by significant macroeconomic asymmetries between the core and the periphery. It is to such asymmetries that we now turn.

5.2. Macroeconomic Asymmetries

The evolution of real GDP per capita in the EA is depicted in figure 8.[191]

[190] See Blanchard (2006) for a survey of the evolution of European unemployment and alternative explanations.
[191] The weights used for constructing the group aggregates are the ones used in the Area Wide Model (AWM) database of the European Central Bank. They are GDP based, adjusted for PPP, and reflect the PPP adjusted real GDP of each particular economy as a share of the Euro area economy GDP in 2001. See Fagan et al. (2005) for more details. The weights for the different countries are as follows: Germany (DE) 28.3%, France (FR) 20.1%, Italy (IT) 19.5%, Spain (ES) 11.1%, Netherlands (NL) 6%, Belgium (BE) 3.6%, Austria (AT) 3.0%, Greece (EL) 2.5%, Portugal (PT) 2.4%, Finland (FI) 1.7%, Ireland (IE) 1.5%, Luxembourg (LX) 0.3%. The source for the original data used and depicted in figures 8 to 15 is the November 2018 Annual Macroeconomic Data Bank (AMECO) of the European Commission. In the figures, we do not present the three largest euro area economies (Germany (DE), France (FR) and Italy (IT)) separately, as the aggregates for the EA-12 mainly reflect the characteristics of these three economies, which constitute more than two thirds of the EA-12. We thus present the evolution of aggregates for the EA-12, the 'core' small economies (Netherlands (NL), Belgium (BE), Austria (AT) and Finland (FI)), and the economies of the 'periphery' (Spain (ES), Greece (EL), Portugal (PT) and Ireland (IE)).

Figure 8. Real GDP per capita in the Euro Area (2010 prices, log scale): 1960-2017



The real GDP per capita and growth asymmetries between the core and the periphery of the EA are striking. Whereas the economies of the core, large and small, have roughly similar levels of GDP per capita and rates of economic growth, the economies of the periphery have much lower GDP per capita than the rest, with very weak and temporary tendencies for convergence. The average real GDP per capita of the economies of the periphery had reached 71.2% of the EA-12 average during the 1990s. During 2000-2007 there was relatively rapid convergence, as it rose to 78.6% of the EA-12 average. However, since 2008 in has fallen back to 76.6% of the EA-12 average. Thus, although the creation of the euro area originally resulted in conver- gence of real GDP per capita between the core and the periphery, after the euro crisis the gap widened again. In addition, the coefficient of variation of growth rates among the original 12 EA members tripled from 55% in 2000-2007 to 162% in 2008-2016, indicating a significant worsening of growth asymmetries after the crisis.[192]

The economies of the periphery have also experienced significantly higher unemployment rates, especially since the 1980s. The evolution of unemployment rates is depicted in figure 9. Unemployment rates in the periphery converged towards the unemployment rates of the core economies in the pre- crisis years since the creation of the euro, but unemployment rates in the periphery have more than doubled since the crisis. They rose from 9.3% of the labor force in 2000-2007 to 18.7% in 2008-2016. For the EA-12 the post-

[192] The coefficient of variation is the standard deviation over the mean of a variable, and is probably the most suitable measure of asymmetries among the 12 in this case.

crisis rise of unemployment has been much smaller, from 8.5% of the labor force in 2000-2007 to 10.3% in 2008-2016. The coefficient of variation of unemployment rates in the EA-12 has risen four times, from 21.9% in 2000-2007 to 86.6% in 2008-2016, indicating a significant worsening of unemployment asymmetries.

Figure 9. Unemployment Rates in the Euro Area (% of civilian labor force): 1960-2017

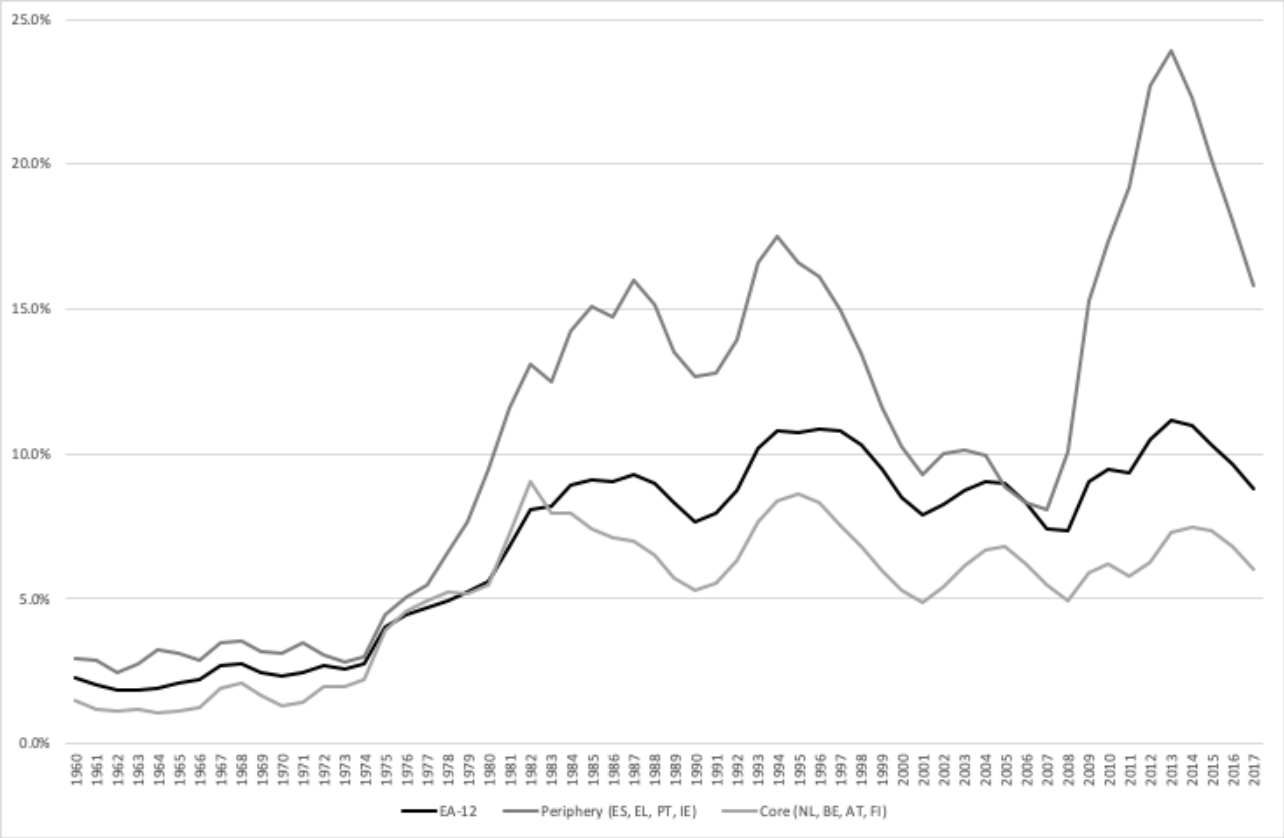


Figure 10 depicts the evolution of consumer price inflation. Inflation rates in the periphery were much higher than the core before the creation of the euro. However, they converged quickly towards the lower inflation rates of the core around the time of the creation of the euro and converged even further during the crisis. Furthermore, the coefficient of variation of inflation rates in the EA of 12 has fallen since the crisis, from 47.0% in 2000-2007 to 31.0% in 2008-2016. The convergence of inflation rates can certainly be counted as probably the only enduring macroeconomic success since the creation of the euro.

Figure 10. Inflation Rates in the Euro Area (% per annum): 1960-2017

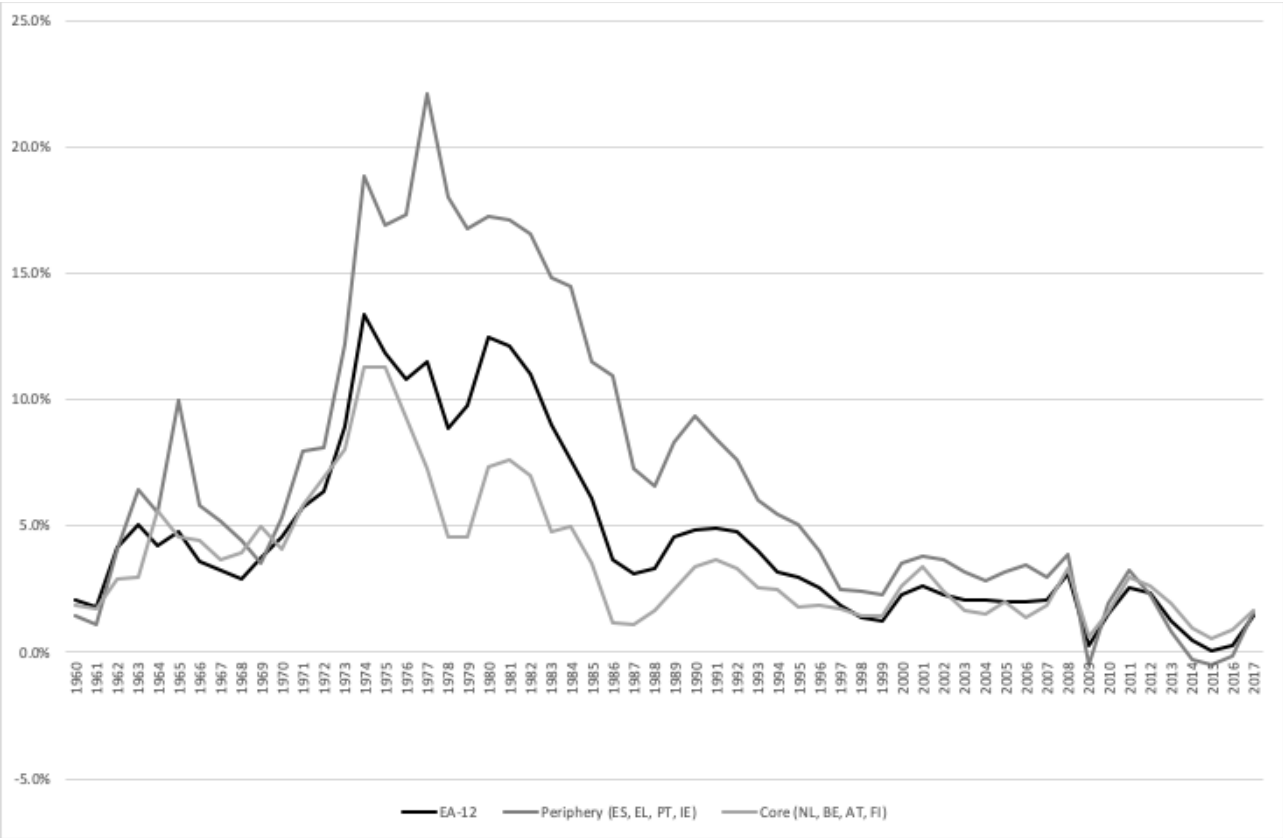
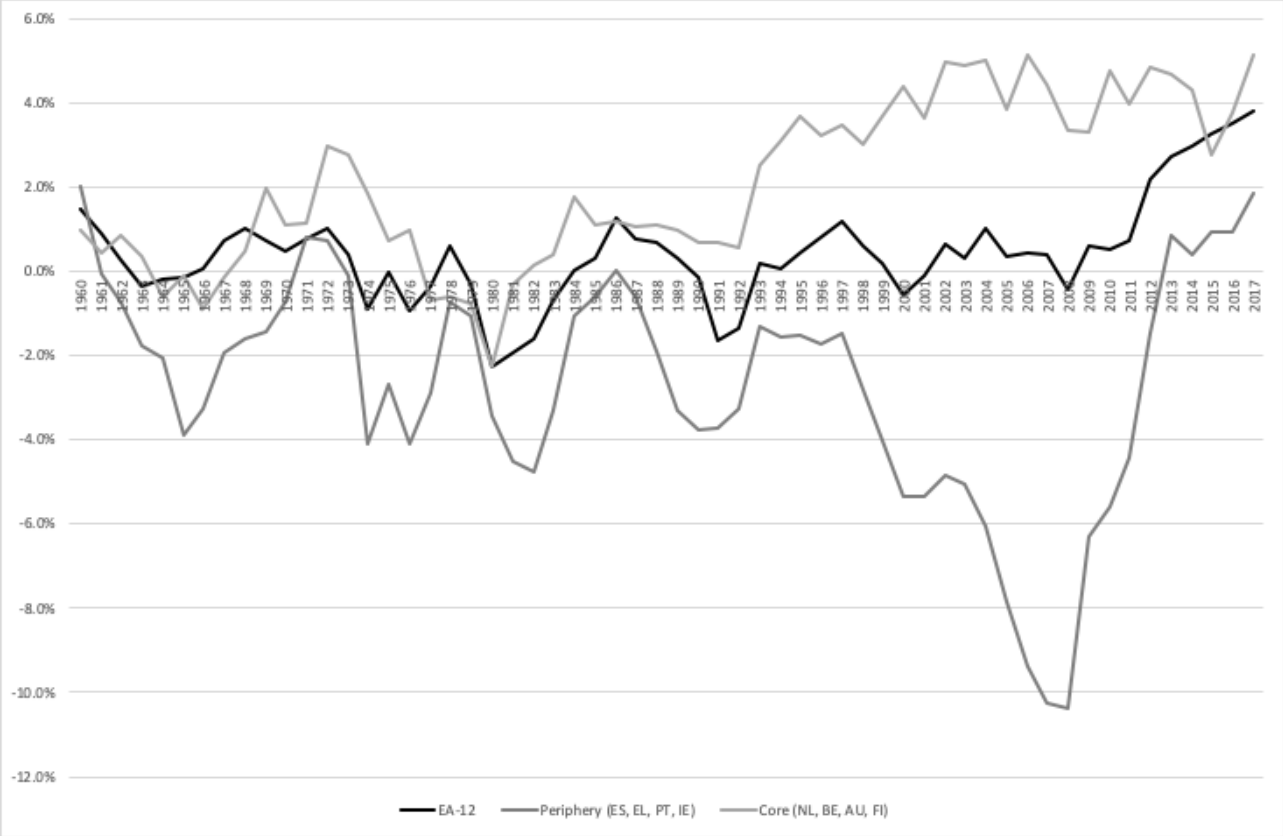


Figure 11 depicts the evolution of current account balances. External imbalances between the periphery and the core worsened significantly since the creation of the euro. As we have already discussed, the economies of the periphery have had much higher current account deficits, both historically, and especially during the first nine years since the creation of the euro. This was a major destabilizing factor and a serious contributor to the euro area crisis of 2010. The standard deviation of current account deficits in the EA of 12, relative to GDP, almost doubled to 5.6% in the 2000-2007 period, and has only fallen slightly since the crisis, to 4.2% in the 2008-2016 period.

Macroeconomic asymmetries also exist within the various groups, but their common elements are much stronger than these differences.[193]

[193] Probably the most important development that does not conform with our classification is the divergence of the GDP per capita of Italy since the euro area crisis. In this, the behavior of Italy is more similar to that of the countries of the periphery than the core. On the other hand, Ireland is recently demonstrating features that would justify classifying it in the small core rather than the periphery.

Figure 11. Current Account Balances in the Euro Area (% of GDP): 1960- 2017



5.3. Financial Asymmetries

We next turn to financial asymmetries, focusing on the evolution of long-term interest rates, real exchange rates, general government balances and general government debt.

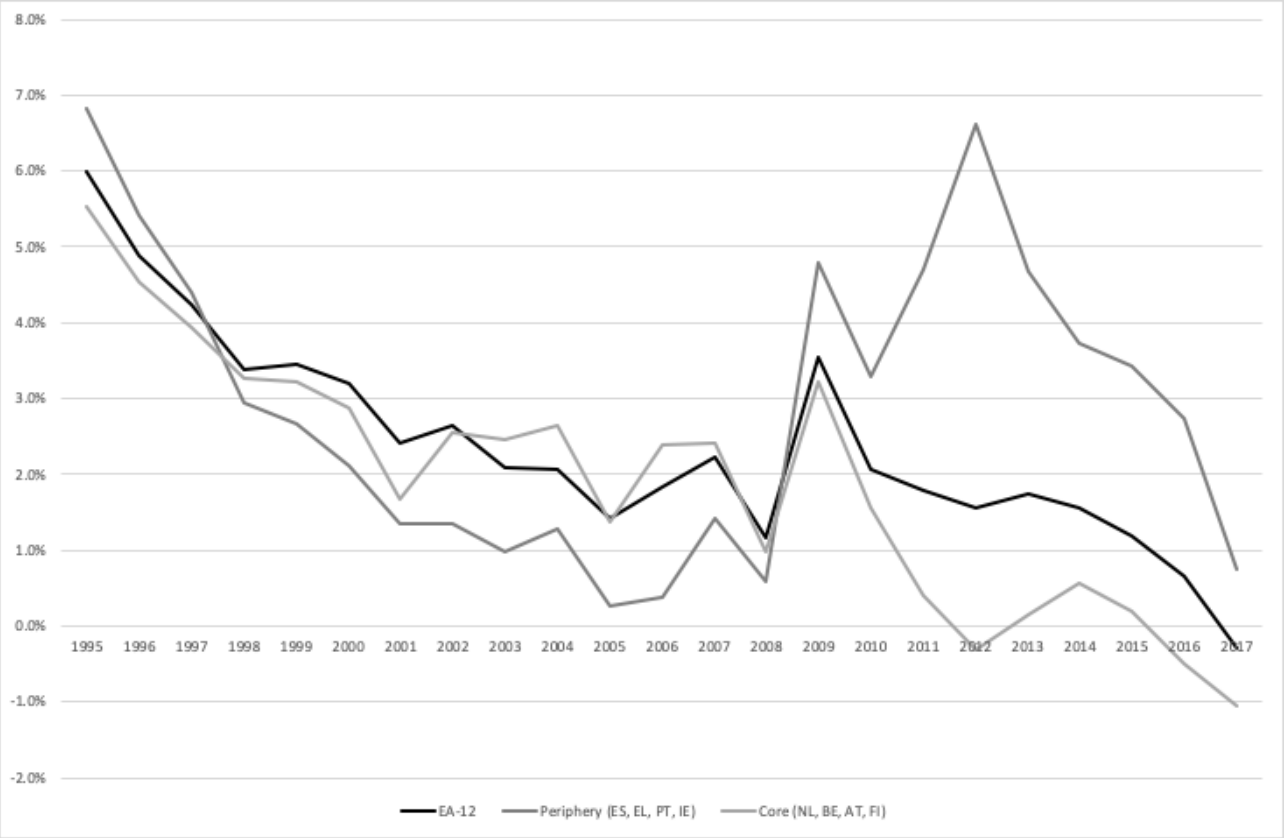
The euro area has been a monetary union among sovereign states with national budgets, national banking systems and financial markets and national labor markets. The EU budget, with a upper limit of 1% of EU GDP cannot function as an effective automatic stabilizer, and labor mobility is low. This has resulted in significant financial asymmetries, which were papered over before the euro area crisis but have since taken centre stage.

Figure 12 depicts the evolution of real long-term government bond rates in the period 1995-2017.[194]

[194] Real long term interest rates have been calculated as the difference of annual yields of 10 year government bonds from current annual rates of consumer price inflation. Source: EU Commission, *Annual Macroeconomic Data Bank* (AMECO), November 2018.

As can be seen from the figure, the creation of the euro resulted in a much more significant reduction of real interest rates in the periphery than in the core. Real long-term interest rates on government bonds in the periphery fell from 5.2% in the 1990s, to 1.1% in 2000-2007. This was mainly the result of the convergence of nominal interest rates following the elimination of the risk of currency devaluation for the economies of the periphery. Real interest rates in the core economies fell much less in the relevant period. Savings thus fell and investment rose much more in the periphery during the 2000-2007 period, contributing to the significant widening of current account deficits. Since the crisis, interest rates have again moved asymmetrically. Long term interest rates also continued falling in the core EA economies, but they rose significantly in the periphery. External imbalances have been partly corrected, but at the cost of much deeper recessions in the periphery than in the core.

Figure 12. Real Long-Term Interest Rates in the Euro Area (% per year): 1995-2017



External imbalances have also worsened due to the behavior of real exchange rates. Real effective exchange rates rose by almost 16% in the periphery in the twenty years before the creation of the euro, while those in the core fell by almost 7% in the case of the large core economies, and 4% in the case of the smaller ones. Furthermore, real effective exchange rates continued appreciating in the periphery during the 2000-2007 period. The sustained loss of

competitiveness of the economies of the periphery is another major asymmetry induced by the process of monetary integration in Europe, that has been strengthened since the early 1980s, and appears to be a significant determinant of the external imbalances that led to the euro area crisis. Since the crisis, real exchange rates in the periphery have depreciated and are back to the levels of the mid-1990s.[195]

Real effective exchange rates, based on unit labor costs, for the 1995-2017 period, are depicted in figure 13.[196]

Figure 13. Real Effective Exchange Rates in the Euro Area (2010=100): 1995-2017

Figure 14 depicts the evolution of general government balances, while figure 15 depicts the evolution of general government gross debt.[197]

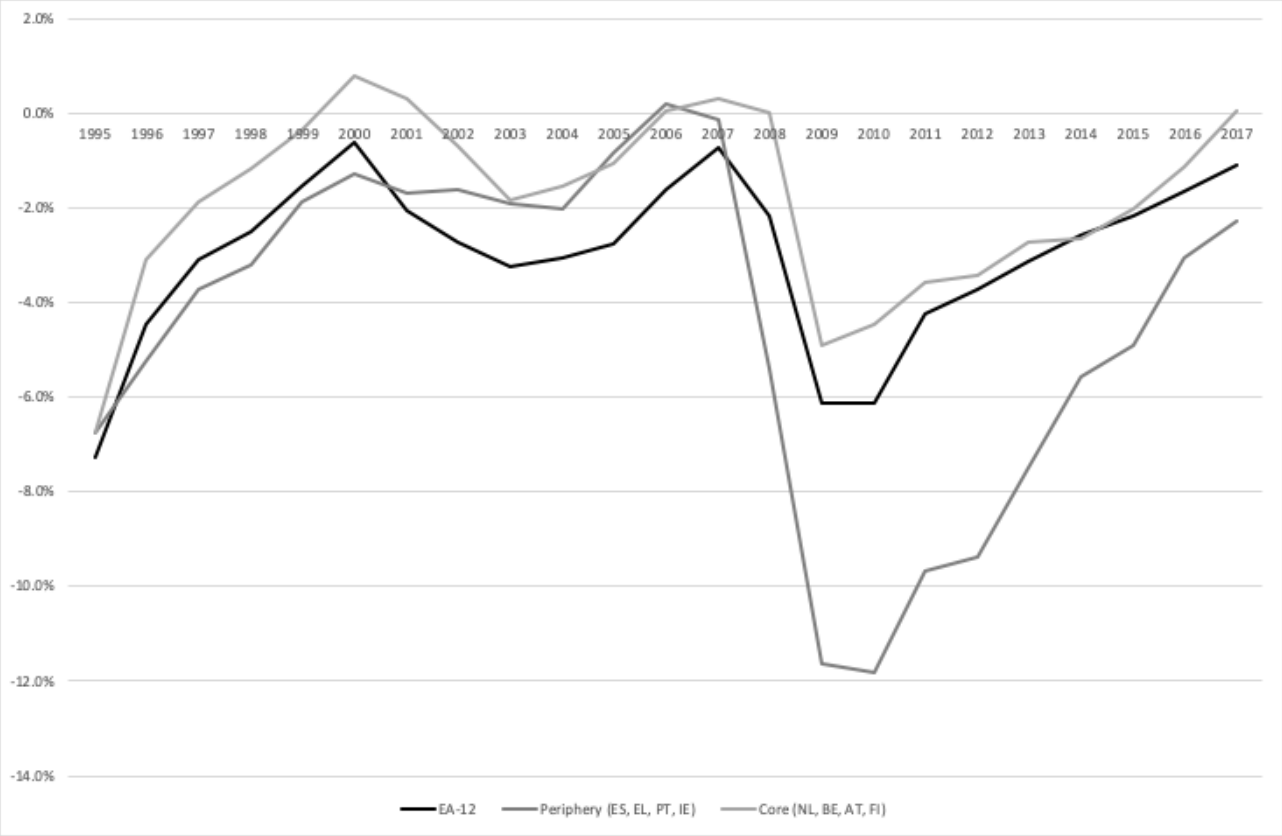
[195] Chen et al (2013) analyze how changes in competitiveness affected current account imbalances in the euro area.

[196] Real effective exchange rates are based on unit labour costs (total economy) and are measured relative to 24 industrial economies, using double export weights. They are presented as an index set to 100 in 1995. Source: EU Commission, *Annual Macroeconomic Data Bank* (AMECO), November 2018.

[197] These are presented as % of GDP. Source: EU Commission, *Annual Macroeconomic Data Bank* (AMECO), November 2018.

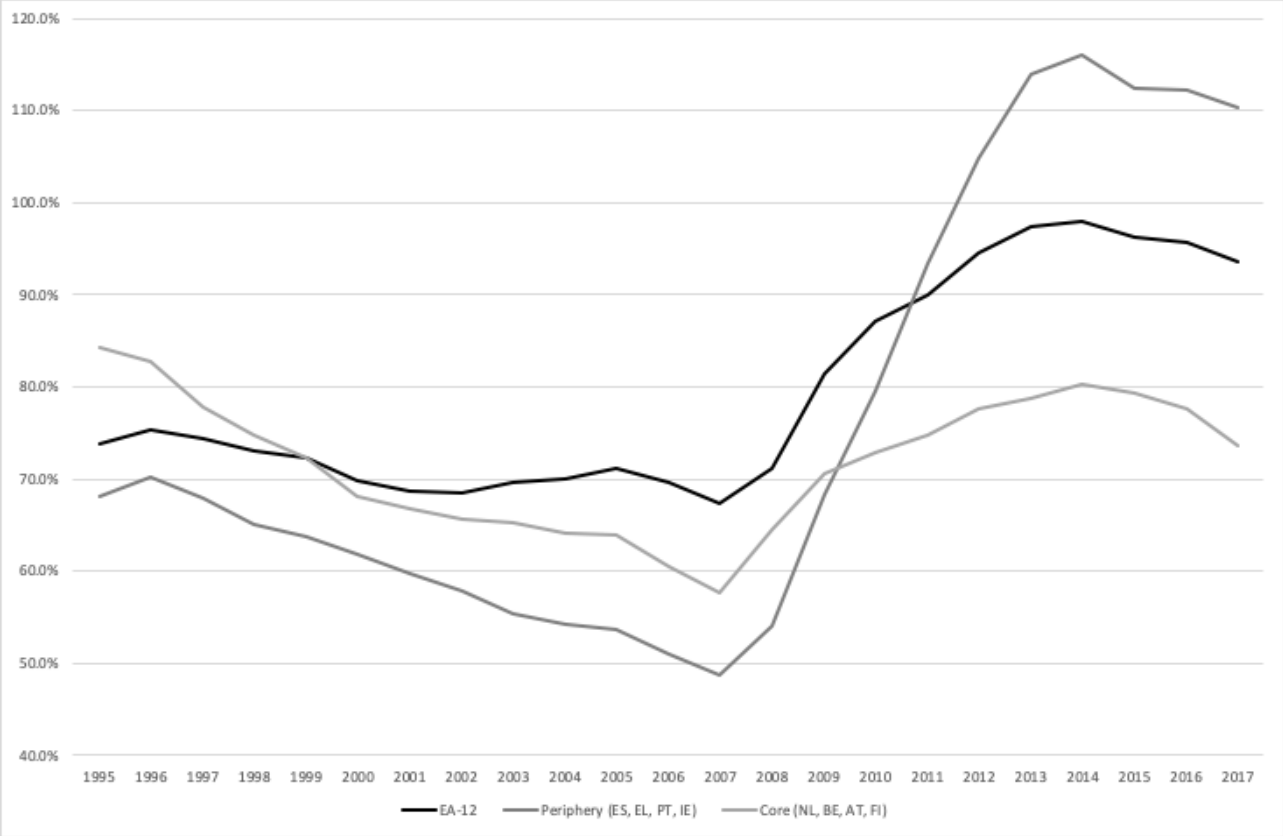
Fiscal asymmetries between the periphery and the core are less significant than usually thought. The behavior of current government balances, or government debt was not that much different between the periphery and the core before the euro area crisis. In fact, before the 2008 international financial crisis, as a percent of GDP, both government deficits and debts were lower on average in the periphery than the EA average and the small economies of the core. However, fiscal imbalances in the periphery widened significantly after the crisis, despite their fiscal consolidation efforts, due to the deeper and longer recessions that these countries had to go through.[198]

Figure 14. General Government Balances in the Euro Area (% of GDP): 1995-2017



[198] The exception to this pattern is Greece, which was characterized by significant fiscal imbalances for a number of years before the euro area crisis. For a detailed analysis of the Greek crisis along the lines suggested in this paper see Alogoskoufis (2019).

Figure 15. General Government Debt in the Euro Area (% of GDP): 1995- 2017



The main financial asymmetries between the periphery and the core of the euro area seem to be due to the segmentation of financial markets and differences in their anti-inflationary credibility before the creation of the euro area. These factors determined the evolution of real interest rates, savings- investment imbalances and current accounts in an asymmetric fashion. Differences in wage and price setting institutions, and the different inflation experiences in the periphery also seem to have affected the evolution of real exchange rates and current account positions. With the exception of Greece, fiscal asymmetries seem to have been a much less significant source of financial asymmetries before the international financial crisis of 2008.

6. Reforming the Euro Area

Although financial market integration and effective regulation of financial markets have taken a priority since the 2010 crisis, the euro area remains a single currency area with significant real and financial asymmetries, segregated national fiscal systems, weak coordination of fiscal

policies and a virtually non-existent common budget. At the same time, the European Central Bank (ECB) remains the only major central bank in the industrialized world which cannot function properly as a lender of last resort to governments and commercial banks. In addition, labor markets in the euro area remain fragmented, contributing to major differences in unemployment rates, which are exacerbated by the notoriously low degree of labor mobility in Europe.

Hence, not only does the euro area not satisfy the main criterion suggested by optimum currency area considerations, namely the absence of asymmetries and asymmetric shocks, it furthermore lacks the other two main criteria for macroeconomic stabilization, namely integrated financial and labor markets and a federal budget that would act as an automatic stabilizer in the case of asymmetric macroeconomic developments. Furthermore, in its response to major financial crises the Euro area is hampered by the lack of an effective lender of last resort, the creation of the European Stability Mechanism (ESM) notwithstanding. The euro area is in urgent need for additional fiscal, financial and labor market reforms.

Since the crisis, there have been scores of proposals for reforming the euro area. However, there has been very little progress towards actual reform. The heads of the European institutions issued a blueprint for the future, the *Four Presidents' Report* in June 2012 (Van Rompuy et al. (2012)). In a statement on 29 June 2012 the euro area heads of state agreed on breaking the vicious circle between banks and sovereigns by establishing a banking union. The agenda, which was endorsed by the European Council, has not been completed and the roadmap for the future remains a matter of fierce controversy. At the June 2018 summit, despite the prior Franco-German rapprochement and the joint 'Meseberg Declaration' by President Macron and Chancellor Merkel, the euro area heads of state could only agree to call for further work on a series of still-divisive issues. Why is it that it remains so difficult to reform the euro area?

As suggested by Pisani-Ferry (2018), p. 1, "There are essentially two possible theories for this enduring state of controversy: the 'battle of interests' and the 'battle of ideas'. The first posits that problems are fundamentally distributional ? decisions are controversial because they pit creditors against debtors, high-debt against low-debt states, stable against crisis-prone countries, or global banks against local banks. The second emphasises cognitive issues. According to this reading, a major factor behind disagreements is that actors do not share the same representation of reality, but rather work with different implicit or explicit models of it."

An attempt to reach a consensus in the battle of ideas was made recently by a group of 14 French and German economists, in Benassy-Quere et al. (2018). They suggest that the euro area 'remains vulnerable, underperforming and divided'. (p. 2). They highlight three main weaknesses for the euro area: 'First, the euro area continues to face significant financial fragility and limited institutional capacity to deal with a new crisis. Stabilisation and recovery have relied mainly on monetary easing by the ECB. ... Second, the euro area lacks adequate institutional conditions and incentives for long-term prosperity. Incomplete banking union and fragmented capital markets pre- vent it from achieving full monetary and financial integration, which would boost both growth and stability. ... Third, and perhaps most worrisome, the flaws of the euro area's fiscal architecture have given rise to political

problems. This has to do partly with the poor design and complexity of the EU's fiscal rules and partly with the euro area's inability to deal with insolvent countries other than through crisis loans conditioned on harsh fiscal adjustment.'

Our analysis of economic and financial asymmetries in the euro area broadly supports the proposals for reforming the euro area put forward by Benassy-Quere et al. (2018) in their attempt to provide a resolution to the battle of ideas within Europe.[199]

The Benassy-Quere et al. (2018) proposals aim to reconcile risk sharing with market discipline, and concentrate on four main areas:

1. *Reform of fiscal rules*, including of the enforcement device: Introduction of a debt-corrected expenditure rule (acyclical discretionary spending), the ditching of EU sanctions, and the assignment of more individual respon- sibility to countries.
2. *More and better risk sharing*: Reduction of home bias in bank sovereign portfolios through concentration charges, introduction of common deposit insurance with national compartments, the promotion of a 'safe asset' based on diversified sovereign debt portfolio (e.g. ESBies), the creation of low- conditionality access to ESM liquidity for pre-qualified countries, and the creation of an unemployment/employment reinsurance fund.
3. *A targeted role for market discipline*: They suggest the enforcement of the fiscal rule via mandating the issuance of subordinated (junior) bonds for the financing of excess spending, and making sovereign debt restructuring a credible last resort when debt is clearly unsustainable.
4. *Clarify role of institutions*: Separation of the roles of 'prosecutor' (watchdog) and 'judge' (political), the upgrade of the ESM to an IMF-like institution, the introduction of political accountability and the strengthening of national fiscal councils.

However, we would go beyond those proposals in two directions. First the need for a common euro area budget, and, second, the need to strengthen the role of the ECB as a lender of last resort in times of crisis.

We would argue for the introduction of a moderate and appropriately targeted common EA budget that would help smooth out the asymmetric impact of macroeconomic shocks through the operation of automatic fiscal stabilizers. It would also help countries in recession face smaller national fiscal and financial consequences of such recessions, and would also partly address labor market fragmentation. A significant part of the fragmentation of labor markets in Europe is the result of the lack of a cross border system of unemployment and health insurance. This could be addressed in a reform that would allow for a separate EA budget, targeted to unemployment in- surance. A EA unemployment insurance scheme would have common rules, such as common replacement ratio and eligibility rules, and would reduce the divergence the national fiscal balances in the case of asymmetric cyclical shocks.

[199] The battle of ideas that emerged after the euro area crisis was first analyzed and highlighted by Brunnermeier et al. (2016).

We would also argue for an explicit recognition of the responsibility of the ECB to act as lender of last resort to banks and sovereigns in times of crisis. This would help avert 'sudden stops' and the market disruptions associated with sovereign debt crises much better that an upgrade of the ESM to an IMF-like institution, due to the higher capacity of central banks to create liquidity.

At the same time, the banking union should proceed as planned and national reform efforts that enhance international competitiveness should be strengthened, especially in the periphery.

All proposals for a common EA budget go against the arguments of those opposing a transfer union, chiefly the countries that are net contributors to the EU budget. We feel that these objections are misplaced. The EU and, in particular, the EA are already transfer unions, through the operation of the single market and the monetary union. They encourage significant economic transfers from weaker and less competitive sectors and economies in the periphery, to stronger and more competitive ones, as suggested by the disparate macroeconomic performance of the core and the periphery following the creation of the Euro area.

A fiscal transfer union, which would partly correct the effects of such transfers through fiscal redistribution is a logical counterpart of the single market and the monetary union. The transfers we suggest are modest, but certainly higher than the current EU ceiling of 1% of GDP. They could be concentrated in key cyclically sensitive areas such as unemployment insurance.

The objections of net contributors to a moderate increase in the EU budget could in principle be overcome by an appropriate rules based fiscal reform that would address moral hazard and other coordination problems and ensure an appropriate balance between risk sharing and market discipline, as is also the case with the Benassy-Quere et al. (2018) proposals.

7. The Covid-19 Crisis and the Recovery and Resilience Fund

The pandemic and the restrictive measures it has demanded after the crisis of early 2020 have deeply disturbed the world economy and of course the economy of the EU. As a result of restrictive measures to address the pandemic, global demand, global supply chains, labor supply, industrial production, commodity prices, foreign trade and capital flows have shrunk significantly. The pandemic hit the European economies hard at a time when they were still vulnerable to new disruptions.

The consequences across EA states will depend not only on the severity of the pandemic and the duration and severity of the measures to contain it, but also on the specific economic side effects and the initial conditions of the various Member States, as well as the flexibility of their fiscal policy.

Once again, as in 2010, the EU and the Euro area are proving relatively unprepared to deal effectively with a major international economic crisis. The necessary reforms in the functioning of the euro area after the international financial crisis of 2010 had proceeded too slowly. However, unlike in 2010, when the cost of adjustment was passed on to the economies of the periphery, in 2020 the EU countries finally agreed to set up a significant new temporary crisis management mechanism. The agreement on the Recovery and Resilience Facility (RRF) and other initiatives totalling 750 billion euros creates a temporary mechanism to jointly deal with this latest crisis. This is a positive, albeit limited, initiative in the right direction.

8. Conclusions

This paper has provided a perspective on the Euro Area (EA), focusing on macroeconomic and financial asymmetries among its member states, and in particular between the core and the periphery. This perspective highlights the need for major and fundamental EA reforms.

After surveying the evolution of EU macroeconomic and monetary co- operation and developments since the creation of the euro, and particularly the euro area crisis, we argue that the euro area needs fundamental fiscal, financial and labor market reforms.

In addition to the banking union and other reforms currently contemplated, and the proposals of Benassy-Quere et al. (2018), which we support, we stress the need for two additional major reforms, so as to deal with the asymmetries of the EA and deal with potential future crises.

First, a common EA budget of moderate size, focused on a EA system of unemployment insurance. This would shift the EA nearer to being an optimal currency area. It would help smooth out the asymmetric impact of macroeconomic shocks through the operation of automatic fiscal stabilizers and would thus help countries in recession face smaller national fiscal and financial consequences of such recessions. The reform we propose would also partly address labor market fragmentation. A significant part of the fragmentation of labor markets in the EA is the result of the lack of a cross border system of unemployment insurance. This could be addressed as the EA budget that we propose is targeted to euro area wide unemployment insurance.

Second, it would also help in the avoidance of future crises if the scope for the ECB to act as a lender of last resort in times of crisis was expanded and officially recognized, as the limited scope of the ESM would not suffice in a future crisis, especially if it involved one of the larger EA economies.

Finally, the establishment of the Recovery and Resilience Fund, following the Covid-19 crisis of 2020, appears to be a step in the right direction.

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Chapter 16. The Return of Geopolitics in US-Greece Relations

Katerina Sokou[200]

1. Introduction

Accounting for the significant deepening in U.S.-Greece of recent years, this paper argues that the Greek debt crisis played a key role in America's re-engagement in Greece. Even as it focused on the economic aspects of the crisis, the Obama administration was driven by the geopolitical imperative of keeping Greece in the Eurozone to prevent destabilizing the country amid a devastating drop in Greek GDP. A confluence of geopolitical threats in the region during the later stages of the crisis, from Russia's annexation of Crimea to Syria's civil war and the refugee crisis it caused, further underlined that imperative for the U.S. administration. At the same time, Turkey's authoritarian turn after the failed 2016 coup was complemented by a revisionist foreign policy that undermined the security interests of the U.S. in the Eastern Mediterranean and challenged Greek sovereign rights, leading the U.S. and Greece to seek a closer security and defense cooperation, both bilaterally and with other U.S. allies in the region.

After the fall of the military junta in 1974, an era of wide-sweeping change started for Greece. The direction of the country shifted from the Cold-War era dependence on the US to integration in the European Economic Communities. At the time, close association with Western Europe was considered necessary to secure the Greek democracy and its place in the West and was supported by the US. During the three decades of European Union membership that followed until the financial debt crisis, successive Greek governments linked their aspirations of modernizing the country to the process of Europeanization. For Greek foreign policy, participation in the EU symbolized a transition from dependence on the U.S. to the assertiveness of a new-found foreign policy independence. Greece discovered the geopolitical benefits of being an EU member: it used its power within the powerful Euro-Atlantic institutions to block Turkey's candidacy to the EU and threatened to do so in the case of FYROM's NATO membership, frustrating American priorities in the region. But in the process of Europeanization of its foreign policy, the instances of Greek dissent gradually gave way to consensus building, notably when Greece supported Turkey's EU application in

[200] Washington D.C. Correspondent, Kathimerini and SKAI TV, Nonresident Senior Fellow, Future Europe Initiative, Atlantic Council

1999.[201] And after EU enlargement, U.S. attention shifted elsewhere, as Greece lost the strategic significance it held during the Cold War.

In 2010, the debt crisis forced the U.S. to shift its attention back to Greece in a different context, to address the economic concerns of a potential meltdown in the Eurozone. American officials considered the crisis a European problem, but the lacking EU response concerned them about its potential effect on the markets and the global economy. Hence, U.S. engagement in Greece was an exercise in crisis management, rather than a strategic priority for the Obama administration. In 2015, as the crisis reached its peak at a time when regional challenges amassed, the stabilization of Greece became a geopolitical priority for the US. The country was seen to be at the heart of a "triangle of turbulence", from Ukraine in the North to Libya and Syria in the South. The U.S. administration focused its effort in avoiding a break with Europe that would lead Greece out of the Eurozone.

As we will show, American diplomacy has since capitalized on the goodwill it built during the crisis to promote U.S. interests in the region, from regional energy diversification to expanded defense cooperation and the resolution of the Macedonian name dispute. Officials in both countries characterize US-Greece relations as the best they have ever experienced, noting an "unprecedented alignment of interests". Yet while Greece has invested in regional partnerships with the support of the U.S., Turkey has weighed in the various conflicts in the region by sending its own or proxy troops, has taken a hard line on the Cyprus issue and exerted maritime claims that challenge Greek sovereign rights. The U.S. response to Turkey's revisionism will test bilateral relations, and the past experience of Cyprus shows that it may shape them for decades to come. This time, however, the stakes are higher as Turkey also undermines NATO's security and the balance of power in the region with its acquisition of the Russian S-400 missile systems. And as more U.S. allies in Europe and the Middle East feel the heat of Turkey's interventionist foreign policy, it threatens to destabilize its Southern Flank to the benefit of Russia, Iran, and China.

2. Historical context: Overcoming dependence

"Our interest in Greece is by no means restricted to humanitarian or friendly impulses… if Greece should dissolve into civil war it is altogether probable that it would emerge as a communist state under Soviet control… It is not alarmist to say that we are faced with the first crisis of a series which might extend Soviet domination to Europe, the Middle East, and Asia."

[201] See Th. A. Couloumbis, S. Dalis, "Greek foreign policy since 1974: from dissent to consensus"

Secretary of State George C. Marshall, February 27, 1947

U.S. engagement in Greece is not new. The Cold War shaped American relations with Greece in the second half of the 20th century, when Greece was considered one of the front-line states of the West. Indeed, it was the concern that Greece and Turkey would fall to the Soviet sphere of influence that drove the U.S. to devise the Marshall Plan to provide aid for European reconstruction. President Harry Truman recognized that the aid plan symbolized a turning point in America's foreign policy: "It means", he said, "the United States is going into European politics."

Military support to Greece and Turkey was the cornerstone of U.S. policy to prevent Soviet influence from spreading South, in the Eastern Mediterranean, and the Sixth Fleet was the force projecting U.S. hegemony in the region.[202] In his presentation to President Truman on February 27, Secretary of State George Marshall laid down the geopolitical argument: "Our interest in Greece is by no means restricted to humanitarian or friendly impulses… if Greece should dissolve into civil war it is altogether probable that it would emerge as a communist state under Soviet control… It is not alarmist to say that we are faced with the first crisis of a series which might extend Soviet domination to Europe, the Middle East, and Asia."[203]

Hence began the period of American support to the Greek economy, but also of Greek political dependence on the U.S. Dependence on foreign powers was not a new phenomenon in the history of modern Greece. According to Couloumbis, "in the area of Greek-Great Power relations, political scientists classified Greece among those states with penetrated (dependent) political systems."[204] This dependency continued after the colonels' coup of 1967 and broke with the implosion of the Greek junta following Turkey's invasion of Cyprus in 1974. Amid the Greek public, American engagement with the junta undermined the former's ethical authority and gave rise to anti-Americanism. As historian Eirini Karamouzi notes, "the dependence of Greece on the USA, or at least the Greek public's perception of this, is important in explaining the wave of vehement anti-Americanism that dominated the Greek domestic scene during, and especially after, the military dictatorship and the Cyprus debacle that followed."[205]

After the Turkish invasion of Cyprus, Greece reassessed its strategic dogma.[206] As far as it was concerned, the imminent threat no longer came from the Communist North but from the

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[202] Monteagle Stearns, Entangled Allies: U.S. Policy Toward Greece, Turkey and Cyprus, Council on Foreign Relations, 1992

[203] L. S. Wittner, American Intervention in Greece, Columbia University Press, 1982

[204] Theodore Couloumbis, Fotini Bellou and Theodore C. Kariotis (eds.), Greece in the Twentieth Century, London, 2003

[205] E. Karamouzi, "Greece, the EEC and the Cold War", Palgrave Macmillan, 2014, p. 17

[206] In "Greece's Strategic Dogma", Professor Athanasios Platias noted that "Greece in the last sixteen years (since 1974) has been trying to develop its own [strategic] doctrine"

East. NATO and the US had failed to protect Greek interests in Cyprus, so after the restoration of democracy Prime Minister Constantine Karamanlis turned to Europe in his effort to secure democratic governance and to seek a more effective security provider vis-à-vis Turkey. Even as the main reason behind Prime Minister Karamanlis' determination that Greece needed to join the EEC was "to render the establishment of a liberal democratic model irreversible,"[207] strengthening external security was also a consideration. Greece was still in search for an external guarantor of interests and provider of security, and as Spyros Economides argues since 1974 Greece gradually shifted away from American tutelage to that of the European Union.[208]

At the same time, EU membership helped detach Greece from the great dependence it had on the US during the Cold War and towards a more independent foreign policy, sometimes conflicting to America's goals. Still, whenever tensions with Turkey rose to a boiling point it was the US and not the EU that prevented the crisis from escalating to war. During the Imia crisis of January 1996, the US played "the role of fire-fighter" and was actively engaged to diffuse the crisis, while European institutions were slower to respond. As the U.S. ambassador to Greece put it in a wire from Athens, "we are all somewhat frustrated by the extraordinary tardiness of the Italian presidency as regards the resolution of this dispute."[209]

The Greek Prime Minister Kostas Simitis publicly thanked the US for its role in diffusing the crisis in the Greek parliament – and was viewed as a leader "with a more realistic approach towards Turkey and the US".[210] Later that year, he was reelected to power and kickstarted a new approach towards Turkey. In 1999, the effort to normalize relations with Turkey led to a major change of policy at the Helsinki Summit, where Greece dropped its veto on the prospect of Turkey joining the EU.

Other thorny issues continued to complicate US-Greece relations. Among the problematic legacies of the 70s, domestic terrorism continued to stain bilateral relations until a major security operation ahead of the 2004 Athens Olympic Games led to the dismantling of the terrorist group November 17. And the Greek dispute with FYROM over the latter's name, which the US recognized as "Republic of Macedonia" in 2004, delayed for more than 10 years the U.S. goal of bringing the country into NATO as the threat of a Greek veto stopped short a NATO invitation to the former Yugoslav Republic in 2008. Still, before the Greek debt crisis, disagreements with the EU over foreign policy had eased. In fact, as soon as the late 1990s, "Europe was hardly a divisive issue in Greek politics".[211] In the case of the two major parties, PASOK and New Democracy, which ruled the country in turns from the fall of the junta until

[207] E. Karamouzi, p. 46
[208] See Spyros Economides, "Greek Foreign Policy Since the Metapolitefsi", Oxford University Press, 2020
[209] A. Ellis & M. Ignatiou, Imia, p. 17 (in Greek)
[210] Ibid., as per U.S. embassy wire, p. 19
[211] K. Gemenis, Z. Lefkofridi, "The Europeanization of Greece: a critical assessment"

2015, working with the US on defense, and increasingly on counterterrorism, was also taken as a given.

However, due to the Cold-War history of dependence, the junta and the Cyprus fallout, there was no public opinion consensus on the benefits of U.S. engagement in Greece. The left maintained a fiercely anti-American rhetoric and routinely condemned NATO and the EU, limiting the potential for a more active Greek role within the North Atlantic alliance. This changed when SYRIZA came into power with the promise of tearing down the austerity memoranda. When the Greek government's effort to avoid a new bailout program failed and Greece was faced with economic disaster, the Obama administration helped Prime Minister Alexis Tsipras reverse course and leveraged its influence to secure a deal with Greece's creditors that would keep Greece in the Eurozone. As a result of this mediation, and for the first time in Greece, a leftist party became, in both its rhetoric and its policies, pro-American. For bilateral relations, this was as important a break from the past as the fall of the junta. Since then, the US and Greece have expanded and deepened their partnership in all aspects of the bilateral relationship.

3. The Greek debt crisis: "As severe a test" as its civil war

"The United States has a national interest in Greece emerging from its extended economic crisis stronger, stable and playing a stabilizing role in its region. That is the current job of US diplomacy".

Ambassador of the U.S. to the Hellenic Republic David Pearce, Fall 2014

In their effort to avoid Grexit, senior U.S. officials who were involved in the management of the Greek crisis say they were acting on the tradition of post-World War II American engagement in Europe. As the former Treasury Secretary Jack Lew put it, "every step towards European integration has been supported by the US, from setting up the EEC to the euro and EU enlargement."[212] This was especially true in the case of Greece, when the U.S. effort to keep it in the Eurozone was also aimed at safeguarding its place amid European institutions. The irony was not lost to pundits of modern Greek history: a Greek diplomat noted the paradox that the US, which had supported Greece's participation in the EU as a way for the country to graduate from a "badly managed" American security concern, should have to

[212] Interview with the author

"return" to Greece as a result of the problematic management of the Greek crisis by the Eurozone.[213]

As Secretary Lew explained, "What I think motivated our involvement in Greece, really drew on this tradition of caring deeply about the success of the European project - concern for the European project as a matter of principle, both as a security alliance and as an economic entity. From our perspective it was important as it had direct bearings on U.S. interests but was more important directly in Europe. So, it was not without self-interest but there's always a mix of self-interest and interest in the European project."[214]

The U.S. reading of the political situation in Greece was more alarmed of the perils of Grexit than the European take on the issue. Since the Cold War, American engagement in Europe has had both a security and an economic dimension, and the security element had been particularly prominent in its relations with Greece. So even as the Greek debt crisis was predominantly a financial concern, with the Treasury heading the response to avoid contagion, there was an understanding that a Greek default and a breakup of the Eurozone would have important geopolitical consequences for the region. The U.S. stance was different to that of Europe in that it stressed the need for a quick move to stabilize the situation and provide the financial support necessary, crashing any doubt that some country would leave the euro. According to a former U.S. Treasury official, "we believed that robust intervention was needed and that their half-measures invited speculation that they would need to do more, and that in the process some people can make money."[215] When it was clear that the Eurozone was reluctant to provide enough support to stop the speculation, the Americans deemed that the IMF would be critical to the stabilization process, and hence supported the biggest IMF program until then. In a wire back to Athens, a Greek diplomat at the Embassy of Greece in Washington noted that a Treasury official encouraged him to ask the IMF for as large an amount as needed.[216]

The Europeans were worried about contagion too, but their approach was to make an example of Greece to other struggling European nations by insisting on excessive austerity as the only way to avoid default. In his book "Stress Test", former Treasury Secretary Timothy Geithner characterizes this attitude as "old testament punishment," while in the leaked transcripts of his interviews for the book, he remembers a G20 Summit in Iqaluit Canada, where he conceded to the Europeans: "You can put your foot on the neck of those guys if that's what you want to do. But you've got to make sure that you send a countervailing signal of reassurance to Europe and the world that you're going to hold the thing together and not let it go. [You're] going to protect the rest of the place." He was asking for credible

[213] The Consul of Greece in Boston Stratos Efthymiou made the comment during the author's presentation at Emmanuel College in Boston, Nov. 9, 2018
[214] Interview with the author
[215] Interview with the author
[216] See M. Ignatiou, Troika: The road to disaster, p.422-425 (in Greek)

reassurance that they would not allow the crisis to spread, even as they were "teaching the Greeks a lesson…"[217]

So, it was not for punishment purposes that Secretary Geithner did not support a haircut in Greece's debt at the beginning of the crisis. Despite arguments within the U.S. administration that the Greek debt was not sustainable, he believed that the banking sector was still very vulnerable on both sides of the Atlantic for an upfront Greek haircut. As a result, in 2010 the U.S. government ended up sharing the European position, of the ECB but also of France and Germany, whose banks had the biggest exposure to Greek debt, of no haircut for Greece before or soon after the IMF program. The U.S. position started shifting as Europe built its policy and institutional defenses, limiting the risk of financial contagion. Secretary Lew, in particular, supported the case for Greek debt relief, as the cost of the unprecedented austerity became evident beyond the economy. In the fall of 2014, the U.S. ambassador to Athens David Pearce even compared the crisis to the Greek civil war. Even as he noted signs that things were "finally starting to look up", Ambassador Pearce noted that the economic crisis had been "Greece's most severe test since its civil war", and would have "profound, long term effects on politics, economics, and society". Writing for the Council of American Ambassadors, he stressed that "the US has a stake in the outcome of Greece's six-year crisis".

His analysis described the sources of domestic instability that the State Department had identified early in the crisis: a deep disenchantment with the political establishment which had weakened traditional parties and strengthened parties of the far-left and far-right, and a need for reforms to put the country on a stable path while creating growth and jobs. He warned that "Greece is in transition and only the next few years will tell, to what" and noted that "the outcome matters for the United States, because it matters for the stability of not just Greece, but the Eastern Mediterranean region, and our largest trading partner, the European Union. Our military priorities in Europe have been shifting north to south and west to east. Our defense and security relationship is more important than ever. And Greece is an essential counterterrorism and law enforcement partner. We have a stake."[218]

The stakes rose further in January 2015, when SYRIZA was elected to power with a pledge to get rid of the Greek bailout. Some early efforts by the newly elected government to find alternative sources of financing from China and Russia fell through, but not before creating unease in Washington. State Department officials were worried about the future direction of Greece and its standing in the West. In the White House, President Obama's National Security Advisors were also concerned, and geopolitical arguments were increasingly weighing in in their engagement. According to a former White House official, the Obama administration

[217] https://www.ft.com/content/5704c0bf-43de-3787-a981-dd1e952f8120
[218] https://www.americanambassadors.org/publications/ambassadors-review/fall-2014/the-united-states-has-a-stake-in-the-outcome-of-greece-s-six-year-crisis

"really thought that the geopolitical trajectory of the country was at stake, as Russia was trying to increase its influence in the region".[219]

At the same time, the regional security situation had deteriorated. In the aftermath of Islamic terrorism attacks in Europe and the refugee crisis, the importance of domestic security in Greece became evident, making it easier for the US to argue for the geopolitical importance of a stable Greece within the Eurozone. It was a point in time when most Europeans were persuaded that a Greek exit from the Eurozone would have no economic repercussions for the rest of the block, as private creditors had reduced their exposure to Greece to minimal levels and Europe had built its defenses to avoid contagion. The U.S. administration did not share this hypothesis, and the Treasury made the argument that the risk of contagion, even if reduced, was still there. It also made a point of increasingly stressing the geopolitical implications of the crisis and the security risks of a Greek exit from the Eurozone.[220]

Most importantly, however, Secretary Lew was in frequent, direct contact with the Greek Prime Minister. In the first six months of 2015, they talked so many times that he developed a personal bond of trust with Prime Minister Tsipras. So much so, that before the July 12 negotiations in Brussels that would define the fate of Greece, the Greek Prime Minister was on the phone with Secretary Lew, who urged him not to leave the room until he had secured a new bailout, keeping Greece in the Eurozone, warning him that this was his last chance.[221] As he put it, the US was an indispensable, interested and trusted outsider in European conversations during the crisis.[222] European officials are keen to stress the "outsider" and not the "indispensable" part, noting that the US did not put its own money on the table. But when talking to Greek officials of successive governments, the trusted part stands out.[223] This was particularly evident in 2015, as the Obama administration was a valuable diplomatic arbiter who advised the Greek government and played a mediating role between Greece and its creditors.

Even in the last hour, in the summer of 2016, with just a few more months in power for the Obama administration and the Greek government well into the third bailout, Secretary Lew was using the failed Turkish coup to make the argument for Greek debt relief, reverting to a geopolitical argument. As he told the Financial Times on July 20, "I would hope [the recent

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[219] Interviews with the author

[220] Based on multiple interviews with US and Greek officials, during the difficult weeks before and after the Greek referendum in July 2015, US diplomatic efforts took many different channels to avoid a Greek exit from the Euro. In addition to Treasury Secretary Lew, President Barack Obama personally engaged in multiple calls with his European counterparts, including Chancellor Merkel and Prime Minister Tsipras, while former president Clinton was also informally advising the Greek Leader. They all stressed that Grexit would have unpredictable strategic consequences, potentially threatening the entire European project and resulting in a failed state at Europe's most vulnerable gateway.

[221] V. Dendrinou, E. Varvitsioti, "The last bluff", p. 286-287

[222] Interview with the author

[223] Interviews of European Union and Greek officials, Brussels, Frankfurt, Luxembourg and Athens, Spring 2018

regional upheaval] would change the climate in which discussions of debt relief happen, just because it's the right thing to do on its own, and at a time when Greece is in a position [of] geopolitical significance that's a good time to reinforce their fiscal future."[224] However, he was not able to persuade his European counterparts to offer further debt relief, as the Greek government was no longer actively pushing the case.

Recognizing his role, Prime Minister Tsipras publicly thanked President Obama for his government's support when the latter visited Athens in November 2016. As he said at the time, "With this opportunity, I want to recognize publicly the role and the contribution of President Obama, during those difficult moments when as a young government, we were asked to take very difficult decision, to recognize his moral and political support (that) he gave to my government in the effort to find a political solution." The trip took place during the transition to the Trump administration, but the diplomatic preparations for President Obama's trip helped provide some valuable continuity in US-Greece relations. Jeffrey Pyatt, the newly arrived U.S. Ambassador to Greece, used the momentum and built on the success of the trip to both expand and strengthen bilateral ties.

As a presidential candidate, Donald Trump had expressed the view that the Greek crisis should be left to the Germans to deal with, or even the Russians, but as President he did not question the role of the IMF in the Greek program. While President, in June 2017, his chief economic advisor Gary Cohn noted that the IMF was very helpful in stabilizing the Greek financial crisis and working with Europe, at a time when its supervision of the Greek financial program was still considered critical for Greece's European creditors. Meanwhile, amid a policy drive to reduce U.S. expenditures for international organizations, the former Treasury Secretary Steven Mnuchin explained that the IMF last commitment to Greece was quite small, "more like a stamp of approval", and may not be used – which turned out to be the case.[225] And when Prime Minister Tsipras visited the White House in October 2017, President Trump publicly supported "a responsible debt relief" for Greece. To be sure, he also praised Greece's 2% of GDP contribution to NATO and announced a defense sale: "a possible purchase at an estimated cost of $2.4 billion for the upgrade of Greek F-16 aircrafts", a deal that he presented as serving his pledge to create more American jobs.[226]

Even though it was not the primary intention of the U.S. administration, the mediating role of the US during the Greek debt crisis helped improve bilateral relations, opening the way for deeper cooperation on a wide range of issues, most notably in defense and security. American and Greek diplomats and politicians all confirm that US-Greece relations improved during the Greek debt crisis. All but former Finance Minister Varoufakis, who resigned from the SYRIZA

[224] https://www.ft.com/content/97f8a4be-4e26-11e6-8172-e39ecd3b86fc
[225] https://www.newsmax.com/John-Gizzi/imf-mnuchin-lagarde/2017/06/30/id/799142/
[226] https://www.whitehouse.gov/briefings-statements/remarks-president-trump-prime-minister-tsipras-greece-joint-press-conference/

government when his policy of breaking with Europe was not followed through, agree that the US played a positive role in mediating between Greece and its creditors.[227] Public opinion data also support this assessment, although admittedly the starting point is low: According to Kapa Research, positive views of the US increased to 57.5% in 2016, from 28% in 2005. As a notable comparison, if not too surprising given the blame-game among European countries during the crisis, positive views of Germany followed the opposite trend, falling from 78.5% to 44.5% in the same period.

U.S. popularity is largely due to its well reported stabilizing role it played during the summer of 2015, even as many other incidents of American support for Greece during its decade-long crisis have not been fully assessed yet.[228] When asked to evaluate the role of foreign governments in the crisis, about one in three Greeks believe that the U.S. showed solidarity. As Kapa Research puts it, "the traditional anti-Americanism in Greek society throughout the biggest part of the post war era seems to have burst with the 2010 financial crisis and the advent of Germany as the most unpopular country in Greece."[229]

The financial crisis monopolized the Greek public and government's attention for the better part of a decade, and the U.S. position that Greece should remain in the Eurozone, reform its economy, and reach an agreement that will support its recovery through debt relief was popular in Greece, facilitating its constructive role in the crisis. On the contrary, in Germany and its fiscally conservative allies in Northern Europe, public opinion limited policy options like debt easing with its tough stance on Greece, hardening their ideological insistence on fiscal consolidation. According to the testimony of an American official posted in Germany at the time, the negative public opinion towards Greece was a disincentive for the German government to agree to a resolution of the crisis, straining relations with Greece.[230]

On the contrary, the U.S. administration was not constrained by public opinion in its engagement. This allowed it to approach the Greek debt crisis with a sense of pragmatism, with the goal of reaching a sustainable solution that would keep the country in the Eurozone, which would require both reforms and debt relief. The most powerful Finance Minister in the Eurozone, Germany's Wolfgang Schaeuble, tried to fend off the U.S. calls for debt relief by noting that it was easy for Americans to ask for it, as they had no money on the table. Yet exactly because they were a third party to the Eurozone debt crisis, U.S. officials were able to mediate between the sides and help avoid a catastrophic Grexit. Given that staying in the Euro was the strong preference of most Greeks and, at the end of the day, of the Greek government, it also created valuable goodwill towards America in Greece. By contributing to

[227] Interviews with Greek officials in Athens and Washington D.C., March-June 2018
[228] See, for example: https://www.kathimerini.gr/politics/825102/paremvaseis-dyo-amerikanon-proedron/ (in Greek)
[229] Kapa Research on Greece and the United States, November 2016, https://kaparesearch.com/wp-content/uploads/2018/01/Greece-USA_Poll__2016_EN.pdf
[230] Interview with the author

a resolution of the crisis within the Eurozone, the U.S. was able to safeguard its interests in Greece and the region, providing a case study of how constructive engagement in Europe can work to the benefit of transatlantic relations.

4. Current State of US-Greece relations: Defining a strategic alliance

"We are constructing a long-term strategy to bolster the U.S. presence in the Eastern Mediterranean. We are cultivating Greece as an anchor of stability in the Mediterranean and Western Balkans and working to systematically strengthen security and energy cooperation with Cyprus."

Assistant Secretary of State A. Wess Mitchell, Senate Foreign Relations testimony, June 26, 2018

When Greece secured a third international program -and with it its future in the Eurozone- U.S. engagement gradually shifted from international crisis diplomacy to the various aspects of the bilateral relationship. Once stabilization had been achieved, both the US and Greece were able to focus on expanding their cooperation to strengthen their ties and pursue their common interests of prosperity and security in the Western Balkans and the Eastern Mediterranean. While Greek defense capabilities, including commitments to NATO, remained a priority during the years of the crisis, the long-held argument of successive governments that Greece is a "beacon" or "pillar" of stability in a troubled region became more persuasive once the crisis subsided.

The Eastern Mediterranean in particular has gained attention as a separate geographical entity in the context of strategic competition, even as the Trump administration has taken steps to disengage from Syria.[231] In its National Defense Strategy, the US identifies interstate strategic competition, not terrorism, as the primary concern of U.S. national security.[232] In it, Russia features highly on the list of American adversaries, and so does Iran. Both peripheral powers are threatening the balance of power in the region, against which the US has a strategic interest in strengthening its own allies, including by supporting collaboration among them. Stabilizing NATO's periphery is key to containing not only Russia's, but in the longer-term also China's, influence in the area.

[231] See A. Tziampiris, "The New Eastern Mediterranean As a Regional Subsystem"
[232] https://dod.defense.gov/Portals/1/Documents/pubs/2018-National-Defense-Strategy-Summary.pdf

Tensions in the wider area have upgraded the strategic significance of Greece. As the U.S. Ambassador to Greece Jeffrey Pyatt has put it, "We see Greece's position as critical and unique in the world, and particularly along Europe's Southern Flank. Greece exists at the nexus of three separate strategic problem sets which come together over Greece. On the one hand there is the ongoing Syrian conflict, the threat of Iran and asymmetric threats from the eastern Mediterranean. To the south the instability and emergence of refugees, and other problems emerging from a yet-to-be united Libya, and to the north, the malign influence of Russia exercised through its illegal annexation of Crimea and increased militarization of the Black Sea. Greece is a critical ally in dealing with all three of these problems."[233]

At his testimony in Congress in July 2018, Assistant Secretary for Europe and Eurasian affairs Wess Mitchell provided a picture of how Greece fits into this picture for U.S. policy in the region. As he noted, "we are constructing a long-term strategy to bolster the U.S. presence in the Eastern Mediterranean. We are cultivating Greece as an anchor of stability in the Mediterranean and Western Balkans and working to systematically strengthen security and energy cooperation with Cyprus. We are also increasing U.S. engagement in the Western Balkans. Through active U.S. diplomacy and close coordination with the EU, we supported the visionary leaders Prime Minister Tsipras and Prime Minister Zaev in achieving a potentially historic breakthrough in the Greece-Macedonia name dispute."[234]

From its part, Greece readjusted its priorities in the aftermath of the debt crisis to deal with increased domestic and external security challenges, by focusing on border security, deepening its regional alliances, and building its defenses. Faced with a difficult economic reality, an aggressive neighbor in Turkey and a dangerous neighborhood, Greece sought to build constructive relations with key states in the region such as Israel, Egypt, and Jordan, and further stabilize its relations with traditional allies such as the United States.[235] The former Greek Prime Minister Alexis Tsipras publicly shared his government's strategic judgment that Greece should work closely with the Americans. "The strategic partnership between Greece and the US is the best foundation for a new potential for our country and the wider region. A potential of security, growth, peace and stability," he tweeted from the Thessaloniki Trade Fair in September 2018, when the US was the honored country.

Diplomats from both countries note that the bilateral relationship is the strongest they remember, something that they attribute to a strategic alignment of interests.[236] During a visit to Athens in October 2019, Secretary of State Mike Pompeo shared with his Greek audience that the relationship is the best it has ever been as "you are beginning to see the world just as we do… You've secured the Prespa agreement. It's a step towards stability in the

[233] https://gr.usembassy.gov/ambassador-pyatts-remarks-hellenic-national-defense-college/
[234] https://www.foreign.senate.gov/imo/media/doc/062618_Mitchell_Testimony.pdf
[235] E. Cheila, p. 27 https://ieres.elliott.gwu.edu/research-publications/policy-papers/
[236] https://www.thenationalherald.com/223131/it-has-been-an-exceptional-year-for-the-u-s-greek-relationship-matthew-palmer-says/

Balkans. You've upheld sanctions on Russia for its invasion of Crimea and eastern Ukraine. You've refused an Iranian ship filled with oil, oil for the Assad [regime] dock in Greek harbors. And you're taking a hard look at the risks of allowing China to build sensitive 5G networks. You've made good decisions. You've grown ties with Israel to secure energy supplies."

Greece dramatically improved its standing in Washington earlier that year by ratifying the Prespa Agreement. In what then White House National Security Advisor John Bolton called "a remarkable achievement," the agreement renamed the Former Yugoslav Republic of Macedonia to Republic of Northern Macedonia and opened the way for its NATO membership, initiating a change of attitude towards Greece in Washington from a potential source of instability during the financial crisis to a country that is leading geopolitical stabilization efforts in its neighborhood. American diplomacy encouraged the initiative to resolve the Macedonian name dispute as the catalyst to reinvigorate the Euro-Atlantic process for the Western Balkans, and NATO membership for North Macedonia was seen as a key step to countering Russian influence in the Western Balkans.

The State Department applauded "this historic opportunity to advance stability, security, and prosperity in the region," while former Deputy Assistant Secretary of Defense Michael Carpenter -and foreign policy advisor to former Vice President Joe Biden- called it a "huge win" on Twitter. Carpenter called the agreement "historic" and "a win against ethnic nationalism and demagoguery", while he noted that "it is impressive how Prime Ministers Zaev & Tsipras got this over the line despite Russian meddling". The New York Times even called the agreement "a rare victory for the EU and NATO" -the "West"- over Moscow.[237]

American and Greek officials agree that the Prespa agreement, together with Greece's decision to diversify its energy sources and its bold response in the face of Russia's "malign activities" in Greece when it expelled two Russian diplomats accused of spying, have done much to change the image of Greece – according to a State Department official, they have reaffirmed "the sovereignty of the Greek nation" and signaled a change in the nature and importance of US-Greece relations for both countries". And even though US officials steer clear of linking the bilateral improvement to their increasingly thorny relations with Turkey, Greek officials note that the US focus on Greece also reflected its troubled relations with Turkey and the need for the US to strengthen cooperation with its reliable allies in the region.[238]

Security was at the heart of the US-Greece strategic dialogue inaugurated in 2018 as a symbol of the new era in bilateral relations, when the two countries agreed to tackle common

[237] https://www.nytimes.com/2019/01/25/world/europe/greece-macedonia-name-change-protests.html

[238] Interviews with American and Greek diplomats, December 2018. For the Prime Minister Tsipras' take after his visit to the White House in October 2017, see https://www.newsmax.com/John-Gizzi/turkey-greece-tsipras/2017/10/18/id/820525/

security concerns, such as international terrorism and the instability in the Eastern Mediterranean. A year later, this led to a new defense and security cooperation agreement that expanded U.S. access to military bases in Greece from the ever-important Souda Bay in Crete to two more locations in mainland Greece. The new agreement is already bearing fruit in easing the move of U.S. personnel and equipment in and out of theater.

Closer military cooperation is particularly important for NATO's Southern Flank. As Ambassador Philip Reeker, at the time the highest-ranking civilian at the U.S. European Command (EUCOM), put it, "consistent high-level cooperation has brought the level of US-Greece defense cooperation to its highest point in the modern era - through the alliance, but also bilaterally... It is in a regional context that the US supports Greece taking the initiative to build bridges and to be an ever-broadening group of regional partners with a mutual interest in security, stability and prosperity." He also noted that the leadership that Athens plays in the neighborhood is "of utmost importance: Greece exists at the nexus of three separate strategic problem sets that we face in 2018 and going forward. Its position is therefore critical and unique in the world and particularly along Europe's southern flank."[239]

A potential area for further collaboration is maritime security, as strategy analysts note that Greece could play a key role within a Euro-Atlantic maritime security strategy in the Eastern Mediterranean. A country with extensive sea borders, Greece is a traditional naval power, with one of the largest merchant fleets in the world. Due to its location, political instability in the region heavily affects it, as the possibility of diffusion of terrorism and migration flows through the Aegean Sea are threatening Greek interests such as tourism and security of sea-lanes. NATO and the EU are in a process of developing a strategy on maritime security, while the US has set collective maritime security as a major goal, in order to address common threats and safeguard mutual interests.[240] Within this context, Greece has a comparative advantage at sea, which makes it a valuable asset – this is already evident in the numerous navy exercises with its allies in the region, and it may lead to Athens assuming an enhanced role for the protection of its own as well as the broader Euro-Atlantic interests.[241]

This is all the more important as Western interests are increasingly challenged by Turkey. After the failed coup of 2016, President Erdogan has become more authoritarian while pursuing a revisionist foreign policy. Issues such as the detention of U.S. citizens, its military operations in Syria and its business dealings with Iran are all thorny issues for bilateral relations. Despite being as old a NATO member as Greece, Turkey's decision to purchase and deploy the Russian S-400 missile system has undermined NATO interoperability and led the U.S. Pentagon to halt Turkey's participation in the F-35 fighter jet production program due to

[239] https://gr.usembassy.gov/greek-america-n-relations-conference-remarks-by-ambassador-philip-t-reeker/
[240] J. S. Reller, *Think Globally, Act Locally. Global Maritime Partnership Initiative and the Necessity for Cooperation and Coalition*, Naval War College, 23 April 2008, for the US initiative Global Maritime Partnerships.
[241] See M. Skordeli, "The Greek Approach to the EU's Maritime Security Strategy"

security concerns. Furthermore, as President Trump's National Security Council advisor for Europe Fiona Hill put it, Turkey's decision shifted the strategic balance in the region, contributing to U.S. efforts to form a strategic partnership with Greece – something that she predicted would continue under the Biden administration as it is not ideological.[242]

In his testimony to Congress, Assistant Secretary Mitchell underlined that Turkey has a vested strategic interest in checking the spread of Russian and especially Iranian influence and in having a safe and stable border with Syria. However, he noted Turkey's increased engagement with Russia and Iran and warned that Ankara "should be mindful of the risks in making strategic concessions to Moscow in order to achieve its tactical objectives in Syria." Since then, Ankara has further facilitated Moscow's strategic objectives in Syria as, "by obtaining the withdrawal of U.S. forces from northern-eastern Syria, Turkey has facilitated a takeover of their bases by Russia".[243] Turkey also provoked the strong objection of the State Department -and the dismay of Israel- when President Erdogan met with two leaders of Hamas, which is designated a terrorist organization by the US and the European Union.[244] As a result, there is a growing consensus amid American foreign policy experts that the US needs a strategic hedge in the region, and Greece has filled part of this role bilaterally as well as with its partnerships with other U.S. allies in the Eastern Mediterranean.[245]

A major driving force for those partnerships is hydrocarbon development in the Eastern Mediterranean, while energy more broadly is also a strategic focus in bilateral relations, as U.S. policy aims to reinforce European energy security by reducing Europe's dependence on Russian gas. During his presidency, Donald Trump also pushed for increased exports of American LNG to Europe to support the U.S. energy sector. Greece has been at the forefront of this trend, with LNG supplies from the US nearly quadrupling since the first half of 2019 and accounting for nearly half of Greece's imported gas in the first half of 2020.

In light of the recent energy discoveries in the Eastern Mediterranean, the US has encouraged increased cooperation among countries in the region. Greece's trilateral partnership with Cyprus and Israel has had strong bipartisan support from the U.S. Congress, whose Eastern Mediterranean Security and Energy Partnership Act was signed into law by President Trump in late 2019. Indeed, trilateral cooperation has had both a security and an energy component, with the US adding its weight in an energy working group aptly called 3+1. The State Department has also encouraged regional cooperation on energy and security through the ambitious East Med Gas Forum, which also brings to the same table Egypt, Israel, and the

[242] https://www.ekathimerini.com/opinion/interviews/1156964/the-strategic-upgrade-of-greek-us-relations-will-continue-under-biden/
[243] See Marco Pierini's analysis https://www.eliamep.gr/wp-content/uploads/2020/09/Policy-Paper-38-FINAL-11.09-1.pdf
[244] https://www.state.gov/president-erdogans-meeting-with-hamas-leadership/
[245] Assistant Secretary of State Wess Mitchell talked about "profound challenges" in U.S. relations with Turkey during his June 2018 testimony at a Senate Foreign Relations Committee hearing on U.S. policy in Europe.

Palestinian Authority, among others. Improving U.S. relations with Cyprus recently led to the partial lifting of the U.S. arms embargo, and the US supports its right to exploit its oil and gas resources.[246]

These developments provoked the ire of Turkey, which does not recognize the Republic of Cyprus and has strained relations with both Egypt and Israel. In response, it proceeded to a delimitation agreement with the Government of National Accord of civil war-torn Libya, asserting gas exploration rights in waters off the coast of Crete that ignore the sovereign rights of Greece. The same area is claimed in the intergovernmental agreement signed by the leaders of Israel, Greece, and Cyprus for the construction of the East Med Pipeline, an ambitious project that would bring natural gas from Israel to Europe via Cyprus, Greece, and Italy. Greece has signed Exclusive Economic Zone agreements with Italy and Egypt, while it has agreed with Albania to refer their maritime differences to the International Court of Justice, as it aims to settling its maritime zones diplomatically, in accordance with international law. But as Turkey does not recognize the rights of Greek islands to a continental shelf but instead promotes the claims of its own Blue Homeland dogma, an EEZ agreement with Turkey is still nowhere on the horizon. Turkey has also ignored a Greek invitation to let an international mediating court settle their maritime claims in accordance with international law.[247]

Turkey's aspirations in the Eastern Mediterranean have also raised alarms in the US, causing the State Department to break with its own tradition of not taking sides in the two nations' maritime disputes. As Ambassador Pyatt first put it, based on U.S. legal analysis, Turkey's claim that inhabited Greek islands do not have continental shelves "is contrary to customary international law".[248] U.S. diplomats routinely encourage dialogue between Athens and Ankara, but as a Turkish ship engaged in seismic research in the Greek continental shelf accompanied by warships for a whole month last summer, hopes for dialogue gave way to a military mobilization that raised the danger of an accident between the two NATO allies. President Erdogan defied U.S. calls to stop these activities and work for a peaceful resolution, including a call by President Trump to both leaders at the height of tensions on August 10th. It was only after the European Union threatened sanctions against Turkey late last year that he decided to pause its exploratory activities in contested waters and restart exploratory talks with Greece.

During the same time, a less contentious energy development was the completion of the Trans-Adriatic Pipeline (TAP), which started bringing non-Russian gas to Europe in early 2021.

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[246] https://www.state.gov/r/pa/prs/ps/2018/11/287187.htm

[247] Prime Minister Mitsotakis made the statement during a townhall at the Atlantic Council on January 7, 2020: https://www.atlanticcouncil.org/event/a-town-hall-conversation-with-prime-minister-of-greece-kyriakos-mitsotakis/

[248] https://www.ekathimerini.com/249739/article/ekathimerini/news/pyatt-islands-entitled-to-eez-continental-shelf

The US supported TAP as part of a backbone of infrastructure to diversify routes and energy supplies to Europe and particularly Southeast Europe. An interconnector to transport such gas to Bulgaria broke ground in 2020, while Greece and North Macedonia are negotiating a second pipeline. As a matter of U.S. national security interest, the U.S. International Development Finance Corporation has indicated its intent to support U.S. investments that promote Greece as an energy hub that helps diversify the supply sources available to Southern Europe. To that end, it may also fund Black Summit's bid for the development of the Alexandroupolis and Kavala ports, as well as committing to support ONEX' bid for the privatization of the Elefsis Shipyards. The US is also "keeping a close eye" on opportunities such as the privatization of Hellenic Petroleum, which together with ExxonMobil and Total have been granted two of the exploration licenses to develop Greek energy resources off the Western coast of Crete.

The US and Greece also formed a trade and investment working group since former Commerce Secretary Wilbur Ross led a team of American business executives in Greece during the 2018 Thessaloniki Trade Fair. There, the two countries committed to boosting bilateral trade and investment, including in key sectors such as energy, defense, IT, entertainment, and infrastructure. Even as the US supported Greek aspirations to become a regional hub, in the past investor interest lagged behind public statements. Since his election in 2019, the New Democracy government of Prime Minister Kyriakos Mitsotakis has focused on bridging the gap through a wide-sweeping effort to attract investment and boost recovery efforts. One of the biggest investment projects is the Elliniko real estate development in Athens, where U.S.-based Mohegan won the bid to build an integrated resort casino. Investor interest has also expanded on high tech sectors and value-added functions, including research and innovation. For instance, drug-maker Pfizer is developing one of its Global Digital Technology Centers in Thessaloniki, Cisco has invested in a technology center, while software giant Microsoft acquired Greek IT firm Softomotive and Applied Materials invested in yet another innovating Greek firm, Think Silicon.

Perhaps not surprisingly given tensions with Turkey, the Greek Prime Minister has also supported defense cooperation with the US, suggesting during his visit at the White House that Greece is interested in joining the production program for the F-35 fighter jets in the future.[249] So, even as U.S. investment in Greece is still relatively small, the trend supports further collaboration on some of the most strategically important sectors, including on defense, infrastructure, research and energy. If anything, his visit at the White House in January 2020 was a testament to the momentum of the U.S.-Greece alliance. For President Trump's White House, the goal was "to advance the two nations' longstanding strategic

[249] https://www.whitehouse.gov/briefings-statements/remarks-president-trump-prime-minister-mitsotakis-hellenic-republic-bilateral-meeting/

interests in enhancing stability, prosperity, and cooperation throughout the Balkans and eastern Mediterranean."[250]

This is a sentiment shared by the Biden administration. During his Senate confirmation, Secretary of State Antony Blinken noted that the bilateral security relationship between the United States and Greece has grown significantly and is important to U.S. interests in the Eastern Mediterranean.[251] With its foreign policy emphasis on values, multilateralism, and safeguarding democracy, the Biden administration adds another factor of strength to bilateral relations – and yet more opportunities for cooperation with Greece. In a joint paper for ELIAMEP and the Atlantic Council with George Pagoulatos, we argued that as President Biden aims to reinvigorate the transatlantic partnership, he will find a key ally in Greece as a member of the European Union with strong democratic credentials, unwavering commitment to NATO, a constructive engagement with multilateral organizations and an increasing nexus of regional partnerships.[252] Bilateral relations have come a long way to overcoming a complicated history that was defined by Cold War considerations, withstand dramatic political change in both countries and even managed to defy the Trump-era tensions in the transatlantic partnership.

5. Conclusion

In the context of the Cold War, Greece and Turkey were geopolitically important for the US as a backstop to Soviet expansion. Despite their historic ties, US-Greece relations were strained post-1974 due to perceived U.S. support to the Greek military junta and tolerance of Turkey's invasion in Cyprus. The two countries also developed diverting priorities after Greece joined the European Union, even as the US remained the fire-fighter in Greece's relations with Turkey.

The Greek debt crisis acted as a catalyst for closer bilateral relations. Geopolitical considerations started becoming relevant again in 2010, when the Greek debt crisis threatened the foundations of the Eurozone, prompting the US to support the biggest until then IMF bailout in the history of the international financial organization. Even as Europe built its defenses under the urging of the U.S. Treasury to avoid financial contagion, the prescribed

[250] https://www.whitehouse.gov/briefings-statements/statement-press-secretary-regarding-visit-prime-minister-kyriakos-mitsotakis-hellenic-republic/
[251] https://www.ekathimerini.com/news/261534/us-greece-security-relationship-key-to-american-interests-in-east-med-says-blinken/
[252] https://www.atlanticcouncil.org/blogs/new-atlanticist/us-greece-relations-in-the-biden-era-why-the-road-to-rebuilding-the-transatlantic-alliance-runs-through-athens/

austerity took a toll in Greek institutions and people alike. Combined with the growing axis of instability in the region, from Ukraine to Syria and Libya, the resulting political unrest in Greece awakened the geopolitical reflexes of U.S. foreign policy to help secure Greece's place in the West.

In 2015, the Obama administration played a mediating role between Greece's leftist government and its creditors with the goal of keeping Greece in the Eurozone. Successive Greek governments also benefited from U.S. efforts to ease the prescribed austerity and the Greek debt burden. This stance helped improve perceptions of the US amid the Greek public, as American policy on Greece was politically non-controversial for the first time in the postwar era.

After the financial crisis, Greece also played a positive role in regional stability. The SYRIZA government reached a compromise that resolved the Macedonian name dispute, opening the way for the renamed Republic of North Macedonia to join NATO. Under the New Democracy government of Kyriakos Mitsotakis, Greece has honored this agreement, deepened its alliances in the region and expanded its ties with the US, including in the critical for security purposes sectors of mobile technology, energy, and defense. By all accounts, bilateral relations are at their best state as the strategic interests of the two countries aligned more closely.

Yet the future breeds significant uncertainties. Sustained American support on the strategic and operational level is required for Greece to continue to be a stabilizing force in the wider region. Even as U.S. diplomacy has reset its sight on Greece after decades of geopolitical neglect, Turkey's challenge to Greek sovereign rights and its unilateral actions to force the maritime claims of its Blue Homeland dogma in the Eastern Mediterranean are threatening security in the region – and are bound to test not only bilateral relations but also NATO's cohesion and relevance.

Sustaining American engagement with its allies on the ground will shape future developments in the region. So will the U.S. stance towards Turkey, and whether it follows a values-based approach based on international law while securing its interests and NATO's Southern Flank. The first indications from the Biden administration are positive. As Secretary Blinken put it in his first testimony to Congress, "it is very important that the U.S. stands up and engages in advancing stability, sovereignty, and territorial integrity of all parties in [the] Eastern Mediterranean and insists that any disputes that arise will be resolved peacefully, diplomatically, not militarily, not through provocative actions."[253]

[253] https://www.ekathimerini.com/news/1156884/blinken-us-has-called-out-turkey-for-actions-against-greece/?utm_source=dlvr.it&utm_medium=twitter

If the past provides any guidance, a potential military confrontation with Turkey that the US does not take a swift and active role in averting may see public opinion in Greece shift against the US, a move that may further destabilize the region. That would be a missed opportunity of historic significance in the context of great power competition, especially as the groundwork for a mutually beneficial partnership that stabilizes the Eastern Mediterranean is already laid. Even more so as, in a break from the past, this time the concern over geopolitics is not tilted to the U.S. side. As a country bordering a turbulent region, Greece has an existential interest in containing the instability on its doorstep, especially given its exposure to refugee and immigration flows. It also has a comparative advantage in its maritime power, EU membership and regional partnerships to play that role. This time, the return of geopolitics does not translate as much to Greek dependence on the US as to interdependence: an alliance to help stabilize an increasingly contested neighborhood.

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