Bachelor Thesis

Markets Liberalization and Economic Growth

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<u>Abstract</u>

It is now well established in the empirical literature that market regulation affects macroeconomic performance. A recurring argument in various policy panels is that product, labor, and financial markets liberalization, namely the lessening of government regulations and restrictions in exchange for greater participation of private entities, is a prerequisite for economies to reach their growth potential. Detractors of this view argue that the evidence for the aforementioned claim is, at best, mixed, while they often single out market deregulation reforms as the primary culprit for past socio-economic crises. This dissertation thesis joins the (de)regulation discussion by dissecting and exploring the relationship between product, labor, and financial markets liberalization reforms and economic growth. I first review the scientific literature on the subject. Using data on real GDP growth, regulation, and other indicators, I then empirically test the (de)regulation-growth nexus in the three markets mentioned above. The main results yielded from the econometric models suggest that deregulation in the Telecommunications sector and product market reforms that amplify multifactor productivity promote economic growth, increases in out of work income maintenance expenditure significantly undermine it, whereas financial market reforms, to the extent that they reduce the costs incurred in the financial system, have substantial growth-enhancing effects.

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Key Definitions

- **(Economic) Liberalization/Deregulation**: the loosening of government restrictions on the functioning of the markets. (*Liberalization | political science | Britannica*, no date)
- **Market**: A place, physical or virtual, where buyers and sellers can meet to facilitate the exchange or transaction of goods and services. (Kenton, 2020b)
- **Product Market**: A market where final goods or services are being traded. (Pelkmans, 2010)
- **Product Market Regulations**: They refer to the set of laws and regulations imposed by the state, which, broadly defined, affect producer entry and exit in a given market or industry, the incentives to create and commercialize goods and services, and the behavior of prices. (Cacciatore and Fiori, 2015)
- **Labor Market**: Refers to the supply of and demand for labor, where employees provide the supply and employers provide the demand. (Kenton, 2020a)
- **Labor Market Regulations**: Broadly defined, they refer to the set of laws and regulations imposed by the state that affect hiring and firing decisions, the number of working hours, the intensity of job search dynamics. (Cacciatore and Fiori, 2015)
- **Financial Sector:** Is the set of institutions, instruments, and the regulatory framework that permit transactions to be made by incurring and settling debts; that is, by extending credit. (*OECD Glossary of Statistical Terms - Financial sector Definition*, no date)
- **Financial Market**: Refer broadly to any marketplace where securities trading occurs, including the stock market, bond market, forex market, and derivatives market, among others. (Adam, no date)
- **Financial Market Regulations**: Refer to regulations that usually involve interest rate controls, state ownership in the banking sector, and financial market supervision. (Detragiache, Abiad and Tressel, 2008)
- **Structural Reforms**: Policies aimed at deregulating product, labor and financial markets. (Cacciatore and Fiori, 2015)
- **Active Labor Market Policies (ALMP's)**: are government programs that intervene in the labor market to help the unemployed find work. (Montane, Santorio and Yeyati, 2019)
- **Fiscal Policy**: Refers to the use of government spending and tax policies to influence economic conditions. (Hayes, 2021)
- **Monetary Policy**: Refers to measures undertaken by governments that influence economic activity by manipulating the money supply and altering interest rates. (The Editors of Encyclopaedia Britannica, no date)
- **Productivity**: Describes the efficiency, i.e., the ability to avoid wasting time, effort, materials, etc., of production.
- **Effectiveness**: The degree to which something achieves the results one wants. (*EFFECTIVE | meaning in the Cambridge English Dictionary*, no date)
- **Market Flexibility:** Refers to the speed with which markets adapt to fluctuations and changes in society, the economy, or production. This entails allowing markets to reach a continuous equilibrium determined by the intersection of the demand and supply curves.

Section 1: Introduction

In the aftermath of the 2008 Financial crisis, overcoming the paralyzing economic sluggishness and building resilient economies in preparation for future shocks became a number one priority for numerous countries around the globe. Various economic think tanks and policy panels had been (and still do) frequently arguing that changing the rudimentary structure of the economy kills two birds with one stone; it helps to unleash, achieve, and retain economic growth while better positions the economy to adjust to and assimilate economic shocks. Structural reforms, i.e., reforms that aim to lessen government intervention/regulation in the product, labor, and financial markets, are deemed to achieve this by improving the technical efficiency of the markets and the broader institutional environment, reducing impediments to the efficient allocation of resources, encouraging job creation and investment, boosting productivity and competitiveness, and amplifying an economy's flexibility/adjustment capacity (European Commission, no date; Baily *et al.*, 1992; Griliches and Regev, 1995; Barnes, Haskel, and Maliranta, 2001; Schiantarelli, 2005; Duval and Furceri, 2018). Such reforms broadly include deregulating state barriers to market entry and exit, price ceilings, (un)employment protection, interest controls, state ownership in the banking sector.

On the opposite aisle, a burgeoning body of literature has been challenging and casting doubts on the aforementioned deregulation-growth and deregulation-resilience nexuses. Prominent theoretical considerations to abstain from markets deregulation are the problems of adverse selection and moral hazard. Those lead unregulated markets to provide inefficient levels of income insurance (Kahn,2012), which have detrimental effects on economic growth (Ul Din, Regupathi and Abu Bakar, 2017). Detractors of the relationships mentioned above also point out that deregulation reforms are significantly associated with knocking-off-balance effects and short-run adjustment costs of considerable magnitude, taking the form of, among others, GDP contraction, unemployment, sociopolitical unrest, inflationary credit bubbles, and destabilizing capital flows (Johnston and Sundararajan, 1999; Adascalitei and Morano, 2016; Cacciatore and Fiori, 2016). Some researchers find that strategic government intervention in conjunction with markets liberalization can help dull the latter's short-run adverse effects, while others highlight the role of the economic environment and institutions in shaping macroeconomic outcomes (Solow, 2004; Nickell, Nunziata and Ochel, 2005; Blanchard, 2006; Duval and Furceri, 2018). These findings effectively suggest that deregulation reforms are a necessary but not sufficient condition for economic stability and growth. Finally, some evidence suggests that the very tools used to conduct research and assess reform regulation and success, the regulation indicators, have lingering methodological issues that yield biased and misleading results (Pelkmans, 2010; IMF, 2015).

Objective of this thesis is to contribute to the existing literature by reviewing the vast scientific publications on the link between structural reforms and economic growth and empirically testing the (de)regulation-growth nexus. Concerning the latter, I run four

panel regressions, two for the Product and one for each of the Labor and Financial markets. Because of the varying availability of data for the indicators used in each regression, the countries and periods employed were not identical across the regressions.

As far as the Product market is concerned, I use data for every fifth year starting from 1998 up until 2013 for 21 OECD countries. That's because the OECD Product Market Regulation Indicators (PMRs) are calculated on a five-year basis (starting from 1998), and, due to a major revision in methodology in the 2018 vintage that renders them incomparable with the others, the most recent data have been purposefully omitted. The reason for using PMRs to approximate the degree of regulation in the product market is that they are by far the most frequently utilized ones in Europe, having exerted considerable influence on national and EU analyses supporting regulatory reform strategies. To minimize possible endogeneity problems and better isolate the effects of product market reforms on (real) GDP growth, this thesis includes the OECD Multifactor Productivity (MFP) indicator as means to approximate what literature suggests to be a significant channel through which product market reforms likely affect economic growth, namely productivity. I also deemed it necessary to include the one-period lagged real GDP per capita and growth to account for the law of diminishing marginal returns and ameliorate the various coefficients' significance, respectively.

The Labor market regression concerns the period 2000-2018 for 21 OECD countries. As independent variables, I use the Employment Protection Legislation (EPL) index for regular and temporary workers. That's because EPL's lay in the heart of the contractual relationship between a firm and its employees and catalytically affect job security and firm adaptability in changing economic environments. Additionally, I include the total expenditure on Active Labor Market Policies and Out of Work Income Maintenance. The former has been shown to mitigate short-run adjustment costs, while the latter to aggravate labor market outcomes. I also include the one-period lagged Real GDP per capita to capture the degree to which the country's previous economic "starting point" affects the next period's economic growth, as well as account for business cycle conditions.

As regards the Financial Market regression, I use data spanning 1980-2006 for 21 OECD countries. In the right-hand side of the regression equation, I employ the Banking and Securities Markets Indicators. Those are compendiums of indicators of the most prominent forms of financial repression, accounting for regulation impacting the development of the Banking Sector and the Bonds and Securities Markets. Additionally, I include the Market Capitalization index to capture the degree of financial development. I deemed its inclusion imperative because financial market reforms are significantly related to financial development, to the extent that the former lower the various costs incurred in the financial system, which in turn affects economic growth. A one-period lagged real GDP per capita is also included for the same reasons as in the Labor market regression.

The main findings of this thesis are that product market reforms that spur multifactor productivity and reduce regulation in the Telecommunications sector propel economic growth, increases in out of work income maintenance expenditure significantly undermine it, whereas financial market reforms, to the extent that they contribute to financial development, have substantial growth-boosting effects.

The remainder of this thesis is structured as follows: Section 2 reviews the scientific literature. Section 3 kicks off the empirical analysis section, describing the data used in the various econometric models. Section 4 presents the regressions' results. Section 5 concludes and offers policy suggestions.

Section 2: Literature Review

<u>Product Market</u>

In the aftermath of the 2008 crisis, international agencies and policymakers on both sides of the Atlantic have been endorsing/suggesting and discussing, respectively, product market deregulation reforms. Why have product market reforms been in the limelight of policy discussions?

The core arguments supporting product market deregulation is that the latter, by facilitating producer entry, reducing the cost of doing business, boosting business creation, and enhancing competition, fosters a more rapid economic recovery, makes the economy more resilient to future shocks, increases productivity, permanently improves the economy's productive capacity and results in better overall economic performance and growth (Cacciatore and Fiori, 2015).

Theoretical considerations that support this claim include that the regulation of any market, hence including the market in question, significantly affects not only the degree of competition therein but also the very structure of its economic activity. Regulations may hinder and/or stall economic activity, stifling initiative and entrepreneurship rather than encouraging it. That is why, by reducing product market regulation, product market reforms can help unleash an economy's growth potential. (European Commission, 2004). On the empirical front, existing evidence suggests that product market regulation has predominantly adverse effects on macroeconomic outcomes, while deregulation offers benefits that usually materialize over the medium to long term. Schiantarelli (2005) finds that increasing impediments to market entry results in competition and economic performance deterioration. Aiginger (2004) finds that differences in entry conditions and administrative procedures significantly affect overall macroeconomic performance. Duval and Furceri (2018) show that product market reforms in 26 advanced economies increase productivity and output, with the gains materializing gradually. Considering product market deregulations in industries such as Telecommunications, Air Transportation, etc., they further contribute to the literature by showing that the output response to product market reforms is affected by and hinges on the credit cycle; in periods of credit growth, the output response is found to be larger whereas, in times of credit degrowth, it is found to be negative and statistically insignificant. This result may be explained by the intuition that credit growth constitutes an environment that's especially conducive to business creation and entrepreneurship, thus facilitating the entry of new firms into the market.[1] Papageorgiou and Vourvachaki (2015) argue that structural reforms permanently increase an economy's productive

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[1] It should be noted that, concerning the link between product market competition and innovation, the empirical literature has so far been inconclusive due to the poor availability of product market and innovation indicators; product market reforms take time to deliver their full effects while innovation is quite challenging to measure.

capacity, thereby increasing the tax base and creating additional fiscal space that can be used to exercise an expansionary fiscal policy to complement those reforms. Finally, Boeri et al. (2007) show that the reduction of service regulations has a positive and statistically significant effect on non-service industries, allowing for the possibility of positive cross-sectoral spillover effects.

Elaborate efforts have also been made to study the relationship between product market reforms and productivity. A comprehensive report authored by the European Commission (2004) explores the relationship between product market reforms and productivity in-depth. Dissecting the impact of product market reforms on productivity, the authors argue that there are direct and indirect transmission channels. The direct effect of product market reforms on productivity relates to reducing costs of doing business and removing barriers that previously hindered market penetration. As the indirect transmission channels through which product market liberalization affects productivity are identified the following: the decline in markups and the reallocation of scarce resources (allocative efficiency), the improvement in the utilization of the production factors by the firms (productive efficiency), and the incentive for firms to innovate (dynamic efficiency).

Ample studies in the literature highlight that product market regulations concerning producer entry and exit significantly affect productivity through the channel of allocative efficiency. Barnes, Haskell, and Maliranta (2001), Baily, Hulten, and Campbell (1992), Griliches and Regev (1995) find substantial evidence that free entry and exit from a market result in productivity growth of individual firms in the industry through a process called internal restructuring (or "within effects" of the reforms on productivity). Internal restructuring refers to the process of changing factors internal to the firm, such as the adoption of new technologies, organizational change, and reallocation of inputs, in response to a more competitive business environment.

Regarding productive efficiency, the empirical literature suggests that increases in market competition above a certain threshold tend to be associated with increases in technical efficiency, namely the obtainment of the largest possible output level using a given or the smallest possible quantity inputs. (Caves and Barton 1990; Caves et al. 1992; Green and Mayes 1991).

The empirical literature studying dynamic efficiency is relatively scarce but insightful. Blundell, Griffith, and Van Reenen (1999) find that aggregate competition leads to more innovation, but "firms with higher market share innovated more within those competitive industries" (p.550). Additionally, there is increasing evidence of an inverted U-shaped relationship between competition and R&D or innovation. (Griffith and Harrison 2004).

Duval and Furceri (2018) further find that the effectiveness of productivity-amplifying product market reforms does not significantly depend on business cycle conditions, thus

suggesting that such reforms can and ought to be prioritized (even) in periods of economic sluggishness. Studies conducted by the European Commission (2004) estimate that product market liberalization reforms could yield productivity gains of between 2 and 4 percent. Product market policies and productivity performance were demonstrated by Nicoletti and Scarpetta (2003) to be significantly interrelated, with entry liberalization being the primary driver leading to productivity gains in all of the countries considered, irrespective of their level of technology adoption. The researchers also found evidence of a twofold effect of entry liberalization that releases its impact over a ten years-time horizon. First, entry liberalization in the services industries is estimated to propel annual multifactor productivity growth within the whole economy. Second, eliminating trade and administrative barriers was found to have positive and significant effects on market entry. The intensity of the twofold effect depended on the technology gap that some countries accumulated in heavily regulated manufacturing industries.

Product market deregulations can also foster fighting the "walking dead." Using a rich firm data set for one of the OECD countries, Portugal, Gouveia and Osterhold (2018) confirm the results in the literature of the high prevalence of "zombie" firms, namely firms that are non-viable/insolvent, as well as their significantly less productive capacities when compared to their healthy counterparts. The researchers also show that a reduction in exit and restructuring barriers allows for a more effective exit channel for zombie firms. This is important because zombie firms distort competition, curb viable firms' growth, hamper productivity growth (dragging aggregate productivity down), and contribute to resource misallocation. The results of this research for Portugal are not country-specific but are relevant for other countries that face similar challenges. That's because, according to the authors, the productivity slowdown and the increased misallocation of resources are common features across several economies and zombie prevalence and patterns display cross-country regularities.

Detractors of product market liberalization often cite as a counterargument that, given the complementarities between product market reforms and active demand-side policy, successful implementation of product market reforms necessitates an active demand-side policy. Thus, in times of general fiscal retrenchment and monetary policy limitations due to the lower bound of interest rates and/or exchange rate commitments (see in the Eurozone), one may rightfully fear that the implementation of such reforms will entail considerable short-run adjustment costs with the gains only materializing over the medium term.

Indeed, Cacciatore and Fiori (2015) show that product market reforms entail short-run recessionary effects, while Duval and Furceri 's work (2018) verifies that product market reforms generally increase output over the medium term, with tangible results to be expected 3-7 years after its implementation. However, Solow (2004) finds that the short-run adjustment costs can be mitigated by an active macroeconomic policy, thus smoothing the economy's transition. A fiscal stimulus is found to have a statistically

significant impact on transition dynamics, while the monetary policy's impact on the latter seems to be statistically insignificant. These findings are partially supported by Duval and Furceri (2018), with the latter claiming that both fiscal and monetary policy can smooth the transition of an economy.

Boeri et al. (2007) point out the existence of significant policy lags (product market reforms being implemented de jure and not de facto), as well as sector-specific conditions and characteristics that can hamper or amplify the effectiveness of the product market deregulation in enhancing competition.

Blanchard and Giavazzi (2003) further contribute to the literature by outlining how the product market reforms create fertile conditions for political actors to get involved. They argue that, because of the redistributive and heterogeneous effects of a product market reform on the economic actors, such policies inevitably produce winners and losers. Thus, losing interests supporting the status quo may hinder the adoption of such policies, influencing political actors to stall and/or reject product market reforms. In the same spirit, Boeri et al. (2007) analyze the connection between the patterns of reforms and the creation of political support. They show that, for example, reforms that are gradually phased are less likely to be polemically opposed, as the slow pace with which the reforms are introduced reduces the fraction of voters immediately affected by the new provisions and thus distributes the potential friction across time.

Additionally, the evidence presented supporting product market liberalization is not undisputed, as lingering methodological issues, such as endogeneity and the absence of reliable regulation indicators, have not yet been addressed. Pelkmans (2010) takes a critical look at the OECD Product Market Regulation (PMR) indicators, the most prominent and frequently used measurements of product market regulations underpinning regulatory reform strategies in the E.U. Pelkmans argues that the initial OECD PMRs' drawbacks can be categorized in three groups: omissions which matter, weaknesses in the indicators, and the neglect of E.U. fundamentals. Although significant efforts have been made to deepen and widen them, the revised OECD indicators continue to suffer from the same drawbacks as their original counterparts. As a result, the utilization of the OECD PMR's is interwoven with a significant and systematic bias projected onto the empirical results of E.U. countries, making their (product) markets seem to be more restrictive than they really are. This, if not considered and accounted for, can lead to consistent mismanagement of the product market with ominous consequences on economic activity and general welfare relative to their potential. After all, evidence-based approaches require reliable indicators. The author concludes that creating revised PMR indicators addressing the existing issues is a prerequisite to implementing "truly" evidence-based product market reforms.

Finally, an issue that's highly debated but often neglected is the interaction between product and labor market reforms. Nicoletti and Scarpetta (2003) report that the correlation between product and labor market regulation indices is positive, thus

suggesting the existence of regulatory spillover effects. Griffith, Harrison, and Macartney (2006) show how product market reforms affect labor market outcomes. Their principal findings may be encapsulated in that the significant product market deregulation in the '90s experienced in some OECD countries was related to an increase in competition as well as increases in aggregate employment and real wages. Thus, extensive product market reforms are likely to significantly benefit both the workers and the economy through increased employment and higher real wages. These findings accord with the theoretical intuition that the higher the market competition (induced by market deregulation or otherwise), the closer the prices will be to the marginal cost (thus increased real wage), translating into increased employment demand and output. Piton and Rycx (2018), "using data for 24 European countries over the period 1998-2013" (p.2), find robust evidence that product market deregulation overall reduces the unemployment rate, in line with the aforementioned theoretical prediction. However, they show that not all types of product market reforms identically affect unemployment; liberalizing state controls and, in particular interfering with business operations, such as price controls, tends to push up the unemployment rate, whereas reduction in state barriers to entrepreneurship and trade is estimated to have the opposite effect.

The general conclusion that may be drawn is that product market deregulation seems to positively affect macroeconomic outcomes in a medium to long term horizon. However, a data-driven, evidence-based approach to effectively implementing product market deregulation reforms dictates that short-run adjustment costs and active macroeconomic policies, policy lags and sector-specific conditions, the political economy, lingering methodological caveats, and interactions with the labor market be considered when drafting such reforms.

Labor Market

The widening differences in economic growth and employment performance experienced during the nineties onwards between Europe and the U.S had been and still remain a much debated and controversial topic. According to Aiginger, "Measuring performance by the nine performance indicators … (our research) reveals that according to all nine indicators, the U.S. outperformed Europe throughout the ten years between 1994 and 2003, as well as for the entire period since 1990." (2004, p10). Many researchers and institutions, such as the OECD, IMF, and the European Commission, single out inflexible labor markets and an extensive welfare state as the prime suspects for the poor macroeconomic performance of the European economies (Aiginger, 2004; Cacciatore and Fiori, 2015), generally taking a pro-labor market liberalization stance. Others, however, challenge this view, claiming that it is backed by flimsy and

inconclusive evidence (Schettkatt, 2003). Therefore, an overview of the scientific literature on the relationship between labor market regulations and macroeconomic performance will hopefully shed light on and elucidate this contentious topic.

What exactly are labor market reforms?

Labor market reforms are new laws introduced that, according to Duval and Furceri (2018):
" .. broadly involve increasing the ability of and incentives for the nonemployed to find jobs by reducing the level or duration of unemployment benefits and/or by increasing the resources for and the efficiency of active labor market policies (ALMPs); cutting labor tax wedges; targeted policies to boost participation of underrepresented groups in the labor market, including youth, women, and older workers. Depending on the type of reform, the goal is to lift productivity, increase employment, and/or strengthen resilience to macroeconomic shocks." (p.2)

Empirical research studying the impact of labor market reforms on macroeconomic outcomes initially focused on unemployment. This focus is to be expected since unemployment's political sensitivity and broader economic significance as a touchstone of labor market and general economic health render(ed) it a key policy concern for both the USA and many European countries. Existing evidence suggests that labor market regulation has largely adverse effects on unemployment. A robust finding across countries is that more generous unemployment insurance, a state-provided insurance that pays money to individuals weekly when they lose their job and meet specific eligibility requirements, and longer potential duration of unemployment insurance benefits at least modestly increase the unemployment duration in the U.S., the U.K., and Germany, with more pronounced effects in Sweden (Atkinson & Micklewright, 1991; Hunt, 1995; Carling, Holmlund, & Vejsiu, 2001). Nickell (1997) found that certain regulation-induced rigidities of the labor market will aggravate employment. Some such regulations are generous unlimited benefits, free of obligations and without the provision of adequate assistance in finding a new job, high unionization that lacks coordination between employers and employees, and increased taxes on labor. Blanchard (2006) found that more pronounced employment protection is related to prolonged unemployment duration, decreased labor force participation, and lower flows into and out of unemployment. Other evidence suggests that labor unions bring about higher wage pressure and unemployment (Nickell and Layard 1999; Driffill 2006) while restricting the total duration of unemployment insurance, as well as making it conditional on employment seeking and acceptance, results in a more significant number of dynamic job searches and shorter duration of unemployment (Fredriksson and Holmlund 2006). Duval and Furceri (2018) show that labor market reforms generally boost employment and/or labor productivity, generally increasing output over the

medium term.[2] In a cross-national study of labor market regulations in 73 developed and developing countries, Feldmann (2009) finds that tighter labor market regulations increase unemployment. Bernal-Verdugo et al. (2012), using a rich dataset of 97 sample countries spanning the period 1980-2008, find that the flexibility of labor market institutions largely determines the impact that financial crises have on unemployment. Their analysis yields that in countries with more flexible labor markets, the impact of financial crises on unemployment is sharper but short-lived. On the other hand, countries with more rigid labor markets experience unemployment that seems to be initially more subdued but is highly persistent. However, the authors are careful in interpreting deregulation as a necessary condition for increasing employment and propose that labor market policies "should be designed in such a way as to internalize social costs and not inhibit job creation and labor reallocation, also to improve the quality of employment and to minimize possible negative short-term effects"(p12).

A smaller empirical literature studying the impact of regulations on unemployment at a business level further confirms their positive relationship. Bertrand and Kramarz (2002) found that entry restrictions introduced in the French retail industry increased unemployment but did not significantly affect wages. Kugler and Pica (2003) find that Italy's heavily regulated product market diminishes the impact of labor market reforms on employment. At an E.U. level, Andersen, Haldrup, and Sorensen (2000) find that the increased product market liberalization because of the European Single Market Programme resulted in increased wage convergence and cross-border wage dependency.

On the other hand, some studies have found no statistically significant effects of the stringency of labor market regulation on employment and unemployment rates. The World Bank (2013) underscores that labor market regulation has an exceptionally modest impact on macroeconomic outcomes, despite its cross-country variability. Recent studies conducted by IMF (2015), ILO (2015), and Avdagic and Salardi (2013) provide further evidence for the aforementioned conclusion. This result has been attributed to various factors. Some studies stress the importance of the so-called plateau effect, suggesting that most countries have reached a level of employment protection such that changing the labor legislation framework insignificantly affects employment outcomes (World Bank, 2013; ILO, 2012). The absence of statistically significant effects has also been attributed to difficulties in measuring labor legislation's legal and effective stringency (IMF 2015).

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[2] It should be noted that while some studies indicate that lower unemployment rates typically mean better labor market performance, not all jobs are equally valuable. For example, temporary employment contracts are a common phenomenon in several European countries. Such jobs are known to pay less, offer less training, and be less satisfying than regular jobs (Booth, Francesconi, & Frank, 2002; Kahn, 2007). On the other hand, such jobs may be steppingstones to regular employment, although evidence on this issue is mixed (Booth, Francesconi, & Frank, 2002; Autor & Houseman, 2010).

Despite there being extensive literature covering the impact of labor market regulations, such as labor-related taxes and other labor market institutions, such as unions, on unemployment, the aforementioned factors alone seem to be of relatively limited explanatory power when it comes to accounting for the total variability of unemployment rates across countries and over time. Nickell et al. (2005) claim that changes in these factors can only explain roughly 55% of the rise in European unemployment from the 1960s to the mid-1990s; other factors must also be at play. Blanchard (2006) claims that a complex interaction between institutions and other shocks is of great significance and explanatory power. Griffith et al. (2006) argue that product market reforms are also likely to play a significant role in explaining the variability in unemployment. After all, in imperfectly competitive markets, firms restrict output and hence employment. As outlined in the product-labor market regulation interaction paragraph in the previous section, their research has yielded that the significant product market deregulations experienced by some OECD countries in the 1990s were related to an enhancement of competition, which was further associated with increases in aggregate employment and real wages. They also showed that the size of these effects varies with labor market institutions; the effect of product market deregulation on unemployment is amplified in countries that have increased collective bargaining and/or union density. These findings are supported by the work of Nicoletti and Scarpetta (2005), who estimated the effect of product market liberalization reforms on employment rates across OECD countries, as well as assessed a variety of likely interlinkages between product market reforms and labor market institutions, including the role of labor market institutions in shaping labor market outcomes.

It should also be noted that the empirical literature suggests that some types of labor market regulations not only have no impact on employment but can also prove to be of great utility. Ljundqvist (2003) argues that regulations aimed at employment protection reduce unemployment in easy-going times yet reduces productivity and increases unemployment in turbulent times. Cacciatore et al. (2016b) find that not diminishing firing costs during recessions smooths the short-run adjustment costs associated with this reform.

The direct impact of labor market regulatory change on economic performance is a subject relatively under-researched. The OECD growth project (OECD, 2003) showed how labor market regulation and competition might work either antagonistically or complementarily, affecting national performance. Aiginger (2004) tried to evaluate the impact of labor market reforms on economic performance, comparing that to the impact of macroeconomic policies (fiscal and monetary policy, macroeconomic cost management) and to investment-oriented policies aiming to spur long-run economic growth, such as research, education and the diffusion of technology. He finds that some labor market regulation indicators, primarily the regulation of temporary contracts, are significantly related to growth performance; growth is considerably higher in countries that had more flexible temporary contracts. On the other hand, the regulation of fixed contracts, regulation affecting the costs of or delays in dismissals, seems to be unrelated

to performance. The main result yielded from his research is that while economic performance is related to (labor market) regulation, there seem to be not enough evidence to justify the claim that regulatory differences between the U.S. and the E.U. countries (but also differences between countries that perform well and poorly within Europe) are the single most important factor in explaining the different and often divergent economic performances. Not only were those differences in product and labor market regulation present during periods of higher European growth in output and productivity, but also, they were growing ever smaller during the nineties. He concludes that one-sided, stand-alone labor market reforms will most likely not have the desired outcome on economic performance, instead endorsing "packaged" reforms and investments in research, human capital, and new technologies. The researchers Kaniovski and Peneder (2002) and Dietrich (2012) employed various regression techniques to study OECD countries and found that structural reforms seem to be instrumental in engendering economic growth. Finally, Caselli and Coleman (2001), analyzing the growth dynamics of the U.S. states, report that structural transformation is one of the primary factors steering the U.S. regional convergence.

As is the case with product-market deregulation reforms, two important questions arise when considering labor market reforms: Are labor market reforms interwoven with significant short-run adjustment costs? How soon do their "positive" effects on growth, if any, manifest themselves?

Existing evidence suggests that labor market reforms may entail short-run adjustment costs, while their growth-enhancing effects, sometimes taking other indirect growth-boosting macroeconomic forms, tend to manifest themselves in the medium term. Bouis et al. (2012) find that "it takes time for unemployment benefit reforms to pay off." (p.1). A similar conclusion is reached by Dabla-Norris et al. (2015) for a wider range of reforms. Piton and Rycx (2018) find that labor market liberalization, as approximated by the employment protection legislation indicator, negatively affects unemployment in the short run. In contrast, a positive impact, namely a reduction of the unemployment rate, manifests itself only in the long run. Interestingly, their analysis yields that limiting protection against collective dismissals helps in lowering the unemployment rate. Solow (2004) and Schindler et al. (2014) studied the short and long-run dynamics after implementing labor market reforms. Their results indicate that labor (and product) market reforms stimulate output and employment in the medium run. In the short run, they find that the reforms are in general expansionary or at least non-contractionary. Contrary to those findings, Cacciatore and Fiori (2016) studied the macro-economic effects of goods and labor-market deregulation reforms in a real business cycle model. Both product and labor market reforms were found to have short-run recessionary effects, predictions that were later tested and verified using data from OECD countries from 1982 to 2005. Additionally, short-run adjustment costs may also take the form of reform fatigue, the delay in the implementation of (labor) market reforms because of sociopolitical unrest, fatigue that, when combined with fiscal tapering, can have dire sociopolitical consequences, and is likely to backfire. Prime examples of countries that

have experienced reform fatigue are Greece, Spain, and Portugal, where the joint implementation of (labor) market reforms and austerity measures led to intense demonstrations and protests (Pereira et al. 2011; NBC 2011; RTVE 2011). [3]

Just as with product market reforms, evidence suggests that the intensity of the short-run adjustment costs induced by labor market reforms can be dulled by appropriate macroeconomic policy stimuli. Solow (2004) finds that the short-run recessionary effects caused by labor market deregulation reforms may be mitigated by an expansionary fiscal policy (monetary policy is found to have a limited impact on transition dynamics). He further buttresses this finding by reviewing past events where macroeconomic policy and market regulation interrelation was paramount in determining aggregate outcomes. Using macroeconomic policies complimentarily with labor market reforms as means to smooth transition dynamics is also supported by Duval and Furceri (2018), albeit, contrary to Solow, they argue that both fiscal and monetary stimuli improve the short-term response of the economy to job protection and unemployment benefit reforms. Similarly, Bordon et al. (2016) also highlight the role of macroeconomic policy support in amplifying the desired outcomes of labor market reforms. Thus, other than waiting for better times, policymakers can consider using supportive macroeconomic policies as means to address the short-run shortcomings of labor market reforms. Papageorgiou and Vourvachaki (2015) call attention to the fiscal instrument used to support the labor market reforms, as well as to the pace of their implementation; labor taxes are found to be the most recessionary fiscal instrument, whereas delays in the implementation of reforms are found to entail real costs. (the faster the reforms are implemented, the sooner the long-run GDP gains will materialize).

The empirical literature also suggests that labor market reforms hinge on business cycle conditions. Duval and Furceri (2018), using data of broad labor (and product) market reforms in 26 advanced economies, estimated the dynamic response of real output, employment, and labor productivity. Consistent with Solow's findings, the researchers' analysis shows that the beneficial effects of labor market reforms typically take time to materialize. However, unlike product market reforms, they find that labor market reforms significantly depend on business cycle conditions. For example, they show that cuts in labor tax wedges and increased public spending on ALMPs amplify their effects during periods of economic stagnancy. In contrast, deregulating employment protection legislation—and to a lesser extent reducing the generosity of unemployment benefit systems—can become contractionary in periods of slack, while such measures have expansionary effects if implemented during periods of economic upswing. Supportive of the aforementioned findings is the work of Cacciatore et al. (2016b), who show that

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[3] Striking the right balance between labor market flexibility and job security has been a central topic in European Labor Market Policy discussions over the past three decades and has been given its own name, "Flexicurity." Initially coined by the social democratic Prime Minister of Denmark Poul Nyrup Rasmussen in the 1990s, the term refers to the combination of pro-active labor market policies with rights and obligations for the unemployed, job and social security, and flexible labor markets.(*About: Flexicurity*, no date)

labor market reforms have different effects in recessions compared to regular times; the short-run adjustment costs related to lowering firing costs are inflated during recessions while reducing unemployment benefits seems to be more advantageous during recessions rather than in "normal" times. Adascalitei and Morano (2016) find that when investigating the effects of labor market reforms in different phases of the business cycle, deregulatory labor market reforms increase the unemployment rate in the short run when they are approved during crises, while they become statistically insignificant when implemented in times of economic upswing.

To sum up, existing evidence suggests that labor market deregulation has largely positive effects on unemployment and macroeconomic outcomes-performance, with its benefits manifesting in the medium term. However, labor market deregulation is not the single most critical determinant for economic growth; while such reforms do affect economic performance, the broader environment within which these reforms are implemented, such as labor market institutions, product market reforms, and the business cycle conditions, also needs to be taken into consideration. Finally, because of the existence of short-run adjustment costs, reform fatigue, and the unemployment's sensitive status as a vital metric of an economy's performance, labor market reforms ought to be cushioned with expansionary macroeconomic policies to mitigate their potential drawbacks.

Financial Market

It accords with common sense and experience that the financial system catalytically affects macroeconomics and our standard of living; thirteen years after the 2008 financial crisis, memories of its impact, on an individual and collective level, bear testimony to the existence of the relationship mentioned above. A healthy and flourishing financial sector can invigorate and broaden economic growth, whereas a latent and underdeveloped one can seriously hamper it. This statement becomes even more convincing if one theoretically considers some of the ramifications of having a well-rounded financial system; a stable and efficient financial system will simplify the conduct of monetary policy, broadening its choices both in day-to-day operations and in response to external shocks and allowing for a reasonably predictable and effective monetary transmission. Additionally, stable and efficient financial markets mobilize capital more effectively, putting it into more efficient use and thus achieving higher economic growth rates.

Efficient financial markets are financial markets characterized by the central role of markets in mobilizing and allocating financial resources. They offer liquidity and payment services and gather information to support investments and savings decision-making. Stable financial markets are financial markets that safeguard the value of liabilities of financial institutions. The notion of stability of financial markets is also interrelated with its macroeconomic management. This feature involves matters of

monetary control, prudential supervision, and financial regulation. (Feldman and Wagner, 2002)

Introductorily, what are Financial Market Liberalization Reforms?

Financial Market Liberalization Reforms are policies related to the functioning of the financial sector that, according to Johnston and Sundararajan (1999), broadly involve:

" Increasing autonomy to central banks in monetary management, fostering autonomy and competition in the financial system, promoting institutional development of both banks and non-bank financial intermediaries (NBFIs), eliminating restrictions on payments and transfers for current international transactions and liberalizing controls on capital movements, developing long-term capital markets, including domestic public debt management and government securities markets" (p.4)

What is Financial Development?

According to the World Bank, Financial Sector development refers to overcoming "costs" incurred in the financial system. These costs may take the form of information acquisition, transaction, effectiveness, and efficiency costs (World Bank, no date). Financial development also involves development in the size, efficiency, and stability of the financial sector, as well as improvements in the monitoring of firms, mobilization, and pooling of savings and access to the financial system.

Are Financial Market Liberalization Reforms a synonym for Financial Development?

Financial Market Liberalization Reforms and Financial Development may be used interchangeably to the extent that the former lower the costs incurred in the financial system and improve its various parameters described above.

The rejuvenescence in academic interest in the role of financial markets in economic development can be traced back to the early work of Gurley and Shaw (1960) on the interaction between financial structure and economic activity. A plethora of researchers have argued ever since that the credit market environment and finance-related metrics such as debt-equity ratios, the ratio of net worth to liabilities, and other similar ratios can significantly affect output and investment (Gertler 1988). This analysis raised the question of what countries can do to improve the efficiency and stability of their financial systems. Impactful research conducted by McKinnon (1973) and Shaw (1973) proposes that minimizing state influence over the financial sector ought to be our point of departure. In fact, up until the 1980s, state domination in the financial industry was ubiquitous in both developing and developed regions of the world. Entry restrictions and barriers to foreign capital flows were imposed in various countries as means to minimize economic volatility, effectively limiting competition. Additionally, governments owned or exerted control over banking policies. The interest rates charged by the latter were subject to ceilings or other forms of regulation, and the allocation of credit was similarly constrained and regulated (Detragiache, Abiad and Tressel, 2008). Many countries liberalized and deregulated their financial sector ever since, albeit this process got partly reversed in the aftermath of the 2008 Financial Crisis. Can we ex-post justify the

implementation of such financial market reforms? In other words, is there sufficient evidence to suggest that financial liberalization/deregulation brings about economic growth?

Empirically, a significant number of studies show that countries with better-developed, i.e., more stable and efficient, financial systems enjoy substantially faster and steady long-run growth (Feldman and Wagner 2002). King and Levine (1993a) have found positive correlations between levels of financial development and economic growth. In his comprehensive survey of the literature, Levine (2005) concludes that countries with more developed financial sectors grow faster. Fetai (2018) "empirically explored whether financial development generates economic growth or vice versa, in transition European countries, including the Russian Federation and Turkey, during 1998-2015." (p.1). The regression output indicates a positive interrelation between financial development indicators and real GDP per capita growth, thus supporting the hypothesis that financial development promotes economic growth. Yang (2019), augmenting previous models with new measures of financial development, finds that in accordance with previous studies, economic growth is positively and significantly related to financial development. The author finds evidence of the latter working through the channels of physical capital stock and total factor productivity. Olowu et al. (2018) and Purewal & Haini (2021) show that developments in financial institutions and markets positively and significantly influence economic growth, providing further evidence for the finance-growth nexus. Fung (2009), Haini (2019), Levine and Zervos (1998), and Shan et al. (2001) provide additional support for the finance-led growth theory. Various studies have also identified financial variables as critical factors influencing economic cycles. Mishkin (1978) and Bernanke (1983) analyzed data from the Great Depression and concluded that financial sector variables significantly impacted economic activity.

However, more recent studies have found little consensus for the finance-growth relationship. The findings of many researchers suggest that financial development may have a threshold effect on growth, where increasing an economy's financialization over a certain level insignificantly or even detrimentally affects economic growth (Alexiou et al., 2018; Cecchetti and Kharroubi 2019; Law and Singh 2014; Moosa 2018). This is bothering for developed economies, such as the OECD members, as they have relatively more developed financial systems. What's more is that advanced financial systems are associated with the rapid expansion of the financial sector, fast-paced progress that often causes inflationary credit bubbles that weaken the financial structure and increases growth volatility (Purewal and Haini, 2021). Purewal and Haini (2021) empirically show that excessive financialization does not yield productivity gains, providing further evidence of the debilitating impact of financial development on economic growth.

Additionally, they find that the impact of financial institutions on growth is more significant than that of financial markets, suggesting that policymakers keep the development of financial institutions in tandem with all other economic development activities and ensure that regulation within the financial institutions' sector promotes

the efficiency, depth, and accessibility of the industry. OECD (2019) points out that the excessive financial liberalization and increased financial cross-border positions in the high-income OECD countries have led to structural weakening and volatility. OECD (2018) also highlights that this extreme liberalization has significantly increased the risk of crisis contagion since closer trade and financial integration since the mid-1990s has made economies more dependent on developments abroad. Some research also indicates that finance-induced growth rates are higher for developing economies than those deemed developed (Brezigar Masten, Coricelli and Masten, 2008), raising doubts about the efficacy of financial market reforms in high-income countries.

Lastly, when reviewing the impact of financial deregulation on economic growth, one cannot overlook the primary role that lax financial regulation played in the 2008 Financial Crisis, the crisis that brought about the Great Recession. Concisely said, the intense financial deregulation (starting from the 1980s) and lack of effective supervisory mechanisms in the U.S. left fertile ground for the development of predatory lending, of cheap, wantonly issued credit, available even to those with questionable creditworthiness and led to a decline in underwriting standards and consumer protection. (Mcarthur and Edelman 2017; Tymoigne 2009).

The studies mentioned above explore the relationship between financial market and institutions development and economic growth, yet may have given no direct and satisfactory answers to a question implied by this section, namely: Are financial market liberalization reforms a necessary condition for achieving economic growth? In other words, can countries with heavily regulated financial markets achieve the same or higher levels of economic growth as they would have, had they liberalized their financial markets?

A burgeoning scientific literature suggests that financial market liberalization seems to be a necessary but not sufficient condition for economic growth and macroeconomic stability.

Financial market reforms are a necessary condition for economic growth; that is, countries that liberalize their financial markets experience higher economic growth rates than their own, heavily regulated version would have experienced, thus tapping on their pool of unrealized growth potential. Levine (2005), using sophisticated econometric methods, finds that easing external financing constraints on firms improves capital allocation and does seem to have a positive causal effect on growth. Furthermore, countries wishing to attract or retain private savings, to have effective and efficient conduct of monetary and exchange policies have little option but to reform/liberalize their financial systems and follow policies that maintain financial stability (Johnston and Sundararajan, 1999). Expanding on what was previously hinted at, a solid incentive to introduce financial market reforms is to achieve a more effective monetary policy. Many countries with repressed financial systems face problems of monetary control that render direct credit and interest rate controls ineffective. In the case of a monetary union, for example, the Euro Zone, inefficient financial markets do not allow for the uniform transmission of the European Central Bank's intended

monetary policy. As previously touched, this debilitates the ECB's ability to perform both routine operations and stabilization/adjustment policies in response to shocks. An approximate and ineffective monetary policy would lead to the fiscal policy shouldering the lion's share of the stabilization and development burden, leaving some countries with no option but to reconsider their participation in the quasi-European economic union. Furthermore, in a world of increasing capital mobility, capital moves not only as a response to competing monetary policies but also to competing financial systems. Inefficient and unstable financial markets are likely to be increasingly penalized, placing a premium on developing financial sector institutions and unsound macroeconomic policies as compensation for the relatively higher risk associated with them. (Jonston and Sundararajan, 1999).

However, financial market reforms per se, without any due regard for pacing and sequencing, will probably not achieve their stated purpose, namely, to enhance economic growth. In other words, financial market reforms are not a sufficient condition for economic growth.

Ample evidence, both theoretical and empirical, suggests that the success of financial market reforms hinges on their proper pacing and sequencing. As far as pacing is concerned, accelerating financial market reforms is interwoven with significant advantages and risks. Often, rapid financial liberalization can overcome inertia and be a catalyst for broader economic reforms. Additionally, galloping financial reforms can increase a government's credibility, as they constitute tangible evidence of the government's pledge to deliver on its promises and of the government's increased willingness to subject itself to discipline from the markets (Johnston and Sundararajan, 1999). This can result in a more significant mobilization of external resources and lower borrowing costs for the government in question, thus further increasing its fiscal space that can be used to support numerous macroeconomic initiatives. Additionally, the acceleration of reforms seems to be especially important in countries where repressed financial systems have failed to deliver adequate economic performance; such countries may be confronting severe macroeconomic and structural problems, including the sidestepping of the existing regulations, that necessitate the immediate implementation of financial reforms. However, accelerating the implementation of financial market reforms without first addressing core financial sector problems can be detrimental, as discussed below.

The sequencing of financial market reforms can mean the difference between their success and failure. Past experiences indicate that addressing problems in the financial sector, particularly the banking industry, early in the reform process is of utmost importance.[4] Failing to address these issues diminishes the effectiveness of financial sector reforms in enhancing resource allocation and risks a debilitating banking crisis that can disrupt stability and stunt economic growth. The financial crises experienced in

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[4] Incidentally, serious banking sector problems are often the result of prolonged financial repression.

countries such as Argentina, Chile, and the Philippines disordered the functioning of financial markets and bear testimony to the impact that undressed financial sector problems can have and to the interrelationship between the banking sector functionality and macroeconomic stability. On the one hand, these crises disordered the financial sector, leading to a sharp contraction in GDP and reversal of the financial deepening that initially followed the reforms. On the other hand, unaddressed banking sector weaknesses were significantly responsible for the inefficient use of capital inflows from the financial market reforms, further magnifying those crises' intensity.(Johnston and Sundararajan, 1999).

Azman-Saini et al. (2010), "using data for 85 countries over the 1975–2004 period"(p.1086), find robust evidence of threshold effects in the FDI-growth link; they find that FDI growth "kicks in" only after an economy's financial system has exceeded a threshold level of development. These findings imply that countries wishing to reap the FDI benefits from financial market reforms need to have already addressed structural problems in their financial sectors before implementing such reforms, thus further bolstering the argument for the significance of reforms sequencing. Other studies find that the ability of financial markets and institutions to achieve economic growth is directly connected with an economy's development level. (Hondroyiannis et al. 2005; Peia and Roszbach 2015). These findings suggest that, in order to reap the growth-enhancing benefits of financial market reforms, countries need to have prioritized and achieved a certain level of overall economic development before implementing such reforms.

An additional cause of concern is "large" capital inflows. Capital inflows that exceed the recipient's economic capacity to absorb them can negatively affect the financial sector and, ultimately, the real economy. Short–term capital inflows are often the result of speculative considerations, namely, interests aiming to exploit an interest rate differential and/or having expectations concerning the direction of exchange rates. Such inflows can be easily reversed should expectations change. Sizable capital inflows can cause excessive real exchange rate appreciation as demand for the currency of interest increases. As a result, such capital inflows may erode competitiveness, widen current account deficits, and economically derail banks' clients, derailment that may have ominous repercussions on debt repayments. Empirically, Feldman and Wagner (2002) state that "large capital inflows have been associated with rapid credit expansion and riskier lending practices in emerging markets." (p.19). The aforementioned researchers argue that effective regulation and supervision, namely, a legal framework theoretically robust and properly implemented in practice, can provide the best insurance against mishandling of capital flows by ill-equipped banks. Last but not least, Feldman and Wagner argue that financial market imperfections associated with asymmetric information (e.g., moral hazard, adverse selection, etc.), which a liberalized capital account can magnify, can be contained by introducing a bankruptcy framework and

improving the integrity and availability of financial information as well as the corporate governance structure of financial institutions.

When examining regulation in the financial sector, a final consideration is the strategic usage of the latter [5] as an indirect way for governments to have the private industry pay down public debts, a process also known as "financial repression." In 2011, economists Reinhart and Sbrancia (2011) argued that financial repression was a key element in explaining periods where advanced economies were able to reduce their public debt at a relatively quick pace. These periods tended to follow an explosion of public debt.

To sum up, financial market liberalization reforms seem to be an avenue worth exploring; ample evidence suggests that such reforms can, among others, improve the efficiency and effectiveness of the monetary policy, attract and retain capital, help to build government credibility, and thus lower governments' borrowing costs. Advance in these variables builds stable and efficient financial systems which drive economic growth. However, it cannot be overemphasized that policymakers need to consider that numerous factors affect the effectiveness of financial markets reforms, including the level of financialization and overall economic development of the economy and the sequencing and pacing of the reforms. Lastly, they should keep in mind the risks involved in undertaking financial liberalization reforms, such as increased growth volatility, crisis contagion, inflationary credit bubbles, and speculative capital flows of considerable amount and their repercussions, as well as the fact that the empirical evidence on financial market liberalization reforms remains mixed and inconclusive.

Section 3: Empirical Analysis-Data

To measure countries' regulatory stance and track reform progress over time, indicators (measurements) of market regulation need to be assembled. Choosing appropriate and reliable indicators measuring market regulation is of utmost importance. That's because market regulation indicators seem to be the only means/proxies available that allow us to approach, quantify, and generate empirical economic analysis (i.e., generate evidence) on the relationship between regulatory practices and economic performance. Additionally, the quality and comprehensiveness of the adopted indicators significantly determine the conclusions and policy suggestions that will eventually be drawn from the empirical analysis, as well as the underpinning and ultimate success of the market regulation reforms per se; the utilization of narrow, exclusive, and biased indicators yields unreliable conclusions and leads to dubious policy suggestions, which, if fleshed out, may hamper economic activity and growth. After all, evidence-based research and recommendations necessitate accurate and reliable measurements to be their pillars.

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[5] According to the authors, these may take the form of caps or ceilings on interest rates, government ownership or control of domestic banks and financial institutions, restrictions on entry to the financial industry, directing credit to certain industries, and creation or maintenance of a captive domestic market for government debt.

The following sub-sections present the various indicators and variables that will be used in my econometric models.

- **Indicators of Product Market Regulation**

  ➤ **OECD Product Market Regulation Indicators**

The most prominent empirical approach to quantifying degrees of restrictiveness of product market regulation, and the one used in this thesis, is that of the OECD Indicators of Product Market Regulation (PMR's). Albeit alternative indicators exist, the reason for singling out the OECD ones is that they are by far the most frequently utilized product market regulation indicators in Europe, having exerted considerable influence on national and EU analyses supporting regulatory reform strategies (Pelkmans, 2010).

The OECD PMR indicators measure the degree to which policies promote or inhibit competition in markets for goods and services. Since 1998 on a five-year basis, the OECD has been developing this set of indicators in order to measure and track reform performance over time and understand where a country stands compared to internationally accepted best practices. The OECD PMR indicators set includes an economy-wide indicator and a group of indicators that measure regulation at the sector level. (OECD, 2020b)

The Economy-Wide Indicator quantifies distortions to competition caused by State involvement in the economy, such as the imposition of barriers to entry and expansion to domestic and foreign firms in various sectors of the economy. The Economy-Wide Indicator is "complemented by a set of Sector Indicators that measure regulatory barriers to competition at the level of specific network and service sectors."(OECD, 2020b)

A key characteristic of the PMR indicators is that the latter are de jure indicators; that is, they reflect the status of the existing laws and regulations yet do not capture the level of enforcement or adoption. The PMR values range between zero (0) and six (6) from the most to the least competition-friendly regulatory regime.

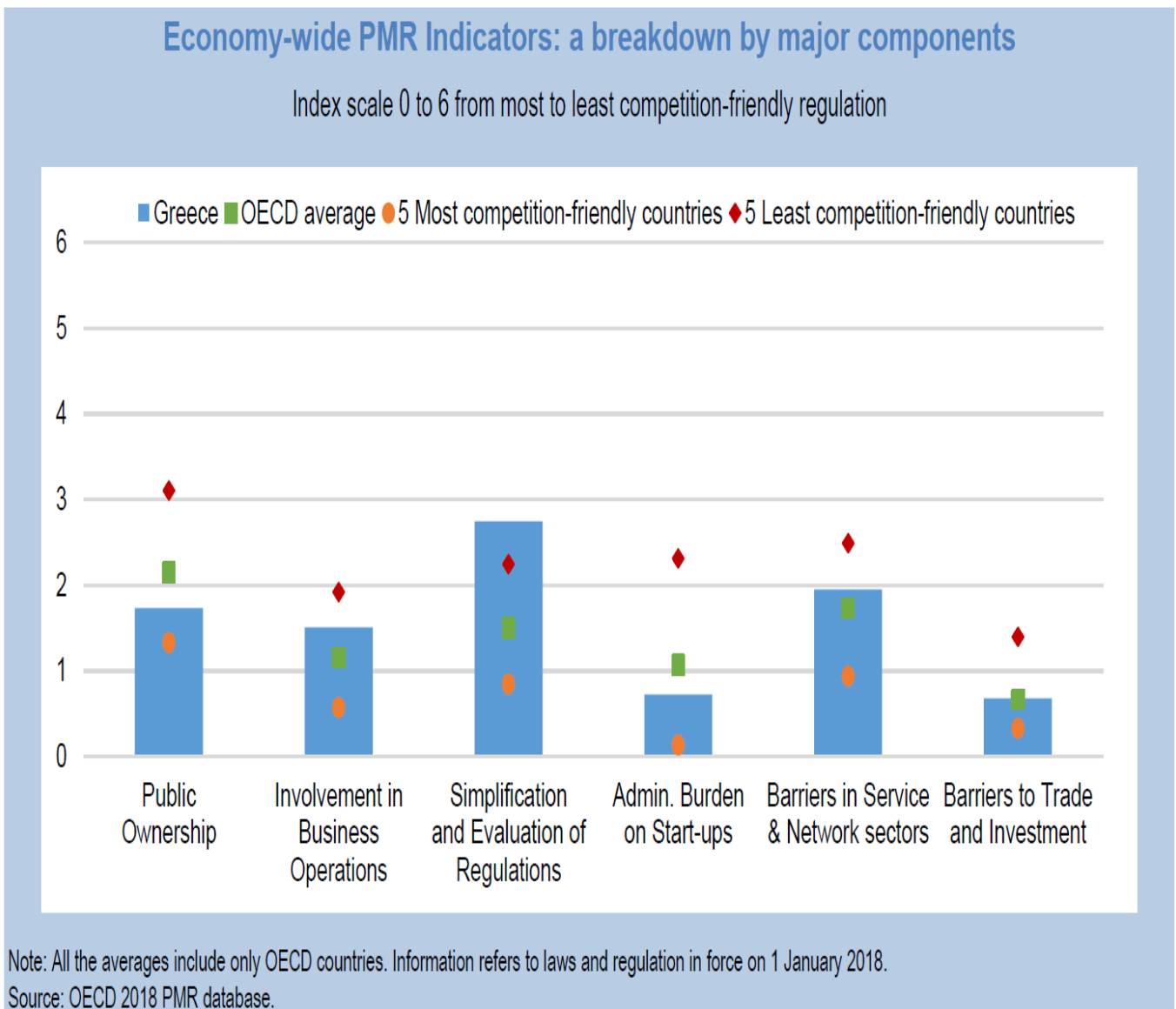According to the OECD (2020b), the database used to build the PMR indicators covers:

- Several network sectors, such as natural gas, electricity, water, mobile and fixed E-communications.
- Several service sectors, such as retail distribution, retail sales of medicines, professional services provided by estate agents, lawyers, etc.
- Several cross-sector regulatory domains, such as administrative burden on start-ups, licensing and complexity of regulatory procedures, presence of state-owned enterprises (SOEs), barriers to foreign trade.
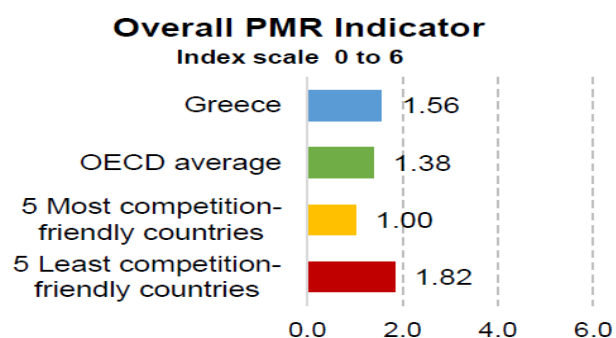
Regarding the information sources of the PMRs, the information on laws and regulations is collected through a questionnaire and vetted by OECD experts. Ministries, regulators fill in the questionnaire, and other relevant authorities in the countries surveyed.

It should be noted that, due to a major revision of the methodology, the 2018 vintage of the PMR indicators is significantly different from and cannot be compared with previous vintages. To maximize the available observations, I only use data on the 1998-2013 PMR vintages for 21 OECD countries.

The following graphs draw upon a real-world example, Greece. They illustrate the 2018 Overall, Economy-Wide, and Sector-Specific product market regulation indicators for Greece. This mini case study further illuminates how PMR's work.

Figure 1: Overall, Economy-wide, and Sector-Specific PMR Indicators for Greece

Economy-wide PMR Indicators: a breakdown by major components

Index scale 0 to 6 from most to least competition-friendly regulation

Note: All the averages include only OECD countries. Information refers to laws and regulation in force on 1 January 2018.
Source: OECD 2018 PMR database.

Overall PMR Indicator
Index scale 0 to 6

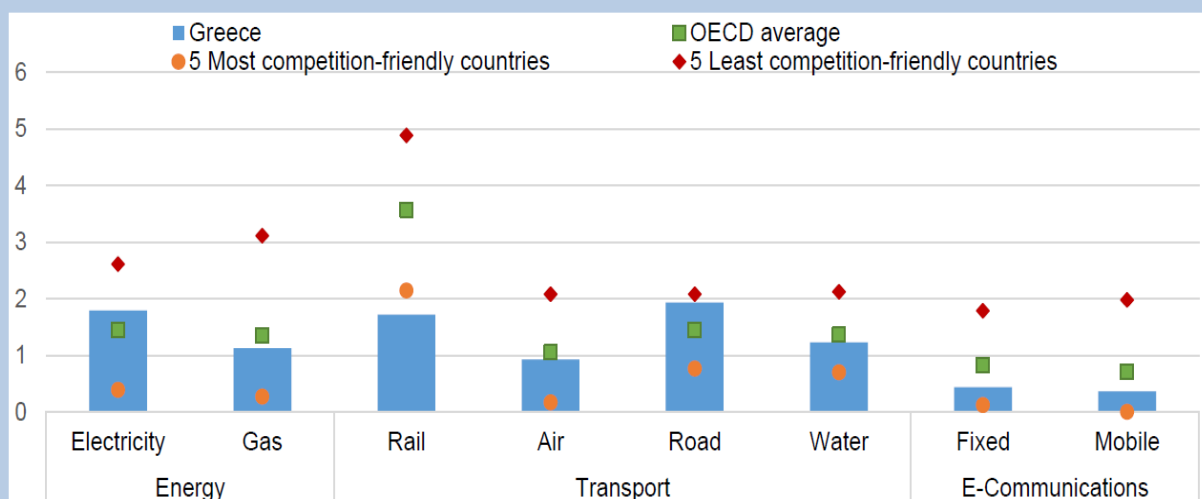|	
Greece	1.56
OECD average	1.38
5 Most competition-friendly countries	1.00
5 Least competition-friendly countries	1.82

0.0   2.0   4.0   6.0

Regulation in network and service sectors

PMR Indicators for network sectors

Index scale 0 to 6 from most to least competition-friendly regulation

- ■ Greece
- ■ OECD average
- ● 5 Most competition-friendly countries
- ◆ 5 Least competition-friendly countries

Electricity | Gas — Energy
Rail | Air | Road | Water — Transport
Fixed | Mobile — E-Communications

PMR Indicators for professional services* and retail distribution

Index scale 0 to 6 from most to least competition-friendly regulation

- ■ Greece
- ■ OECD average
- ● 5 Most competition-friendly countries
- ◆ 5 Least competition-friendly countries

Lawyers | Notaries | Accountants | Architects | Civil engineers | Real estate agents — Professional services
Retail distribution | Retail sale of Medicines — Retail trade
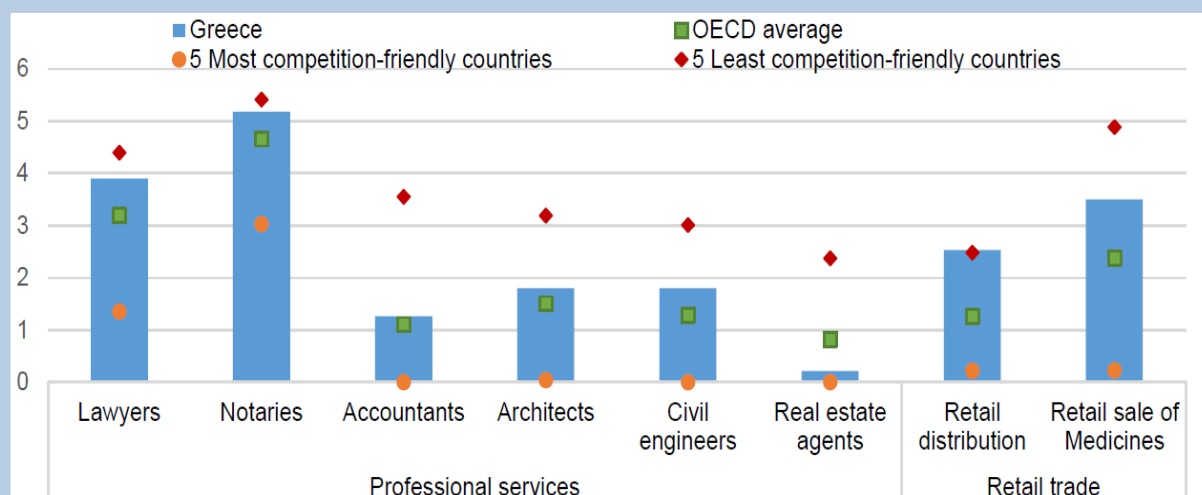
* When comparing the indicators across countries, it should be kept in mind that the activities undertaken by specific professions may vary between countries.

Note: All the averages include only OECD countries. Information refers to laws and regulation in force on 1 January 2018.

Source: OECD 2018 PMR database.

As can be deduced from the graphs above, Greece scores an overall PMR Indicator of 1.56, higher than the OECD average of 1.38. This means that the 2018 status of Greek laws and regulations seem to, de jure, restrict competition in markets for goods and services more than the respective regulatory regime in other OECD countries does, on average. However, Greece's product and service market regulatory regime is not to be frowned upon since the aforementioned country has a significant safety margin of 0.26 points from the five least competition-friendly OECD countries, scoring an overall PMR indicator of 1.82.

> ## OECD Multifactor Productivity Indicator

To minimize possible endogeneity problems and better isolate the effects of product market reforms on GDP growth, this thesis includes the OECD Multifactor Productivity (MFP) indicator as means to approximate what seems to be a significant channel through which product market reforms may affect economic growth, namely productivity. The MFP indicator "captures the overall efficiency with which labor and capital inputs are used together in the production process. Changes in MFP reflect, among others, the effects of changes in management practices, brand names, organizational change, economies of scale."(OECD, 2021a). Measurement-wise, growth in MFP is considered the part of GDP that cannot be explained by changes in labor and capital inputs; in other words, if capital and labor inputs stayed put between two periods, any changes in output would reflect changes in MFP. This indicator is measured as an annual growth rate. (OECD, 2021a). In accordance with the data used on the OECD PMR indicators, I include MFP observations from every fifth year starting from 1998 up until 2013 for the same 21 OECD countries.

• Indicators of Labor Market Regulation

> ## OECD Employment Protection Legislation Indicators

Regulations on the hiring and dismissal of employees – or Employment Protection Legislation (EPL) in short – are one of the most discussed areas of labor market policy. That's because they lay at the heart of the contractual working relationship between a firm and its employees (OECD, 2020a). More formally, Employment Protection Legislation is defined as the set of regulations that aims to protect workers against abusive dismissals, provides (financial) compensation for the income loss related to layoffs, and has the firm dismissing a worker carry some of the social costs incurred by its action. (Piton and Rycx, 2018). A more stringent EPL usually takes the form of increased costs of firing staff, whereas an elastic one decreases or nullifies layoff costs altogether. As will be justified below, EPL is of utmost importance predominantly because of its impact on firm adaptability and job security; thus, an indicator quantifying it will be included in the model.

In the scientific literature, it is frequently argued that flexible EPL plays a central role in achieving economic growth. That's because the former influences the firm's ability to attract new staff and dismiss workers to react to economic conditions and technology changes. Thus, an elastic EPL is considered indispensable to achieve rapid adjustments in the workforce to adapt to changing economic environments and reallocate labor toward more productive activities (Piton and Rycx, 2018; OECD, 2020a)

As regards the employees, EPL is a crucial element of the stability of their job, as it affects the risk of being dismissed and the chances of moving into a job. Admittedly, losing a job and finding one are pivotal moments in many people's lives, making job protection provisions a key determinant of societies' well-being.

As can be deduced, hiring and dismissal regulations involve an inherent trade-off between job security for employees and adaptability to changes in demand conditions or technology for firms. Hence, because of the EPL's significant impact on the well-being of virtually every employer and employee in the labor market, an index capturing the degree to which legislation protects employment comes naturally as a prime candidate to be included as an indicator measuring Labor Market Regulation.

The OECD Indicators of Employment Protection Legislation quantify just that. The former evaluate the regulations concerning the dismissal of workers on regular contracts and the hiring of workers on temporary contracts. They comprise "both individual and collective dismissals. The indicators are compiled using the Secretariat's reading of statutory laws, collective bargaining agreements, and case law, as well as inputs from officials of OECD countries and advice from country experts." (OECD, 2020a). The indicators are scaled from 0 to 6, with higher values indicating increased level of strictness. Although EPL is challenging to encapsulate in an index, the EPL indicator provides a quantitative and comprehensive measure that's comparable across countries and over time. These indicators have stood the test of time, as, over the past three decades, they have become one of the most widely used sources for benchmarking labor market regulation(OECD, 2020a).

The index is available for the period 1985–2019 and is computed every year. As previously touched, the index combines information on the strictness of employment protection for regular contracts (individual and collective dismissals) and the use of temporary contracts. As can be inferred from the graphs depicted below, by 2019, amongst the reforming countries, most had retained or reduced their regulatory strictness towards employment protection for both regular and temporary workers compared to 2013. In particular, 21 OECD countries undertook at least one reform, as evidenced by a change in the OECD indicator score for job dismissal regulation for regular workers or hiring code for temporary employment.

This labor market deregulation development was a sign of the times; the 2013-2019 period follows the more immediate aftermath of the global financial crisis, during which several countries – including Greece, Portugal, Spain, and others – had eased strict

dismissal regulations for regular workers to enhance competitiveness, increase productivity, and lower labor market dualism.[6]

As a final note, the discussion concerning employment protection legislation is particularly pertinent to our times. The current COVID-19 health and economic crises have substantially increased the risk of dismissal for many workers in the private sector, challenging social cohesion and resurfacing the job security- firm adaptability dilemma.

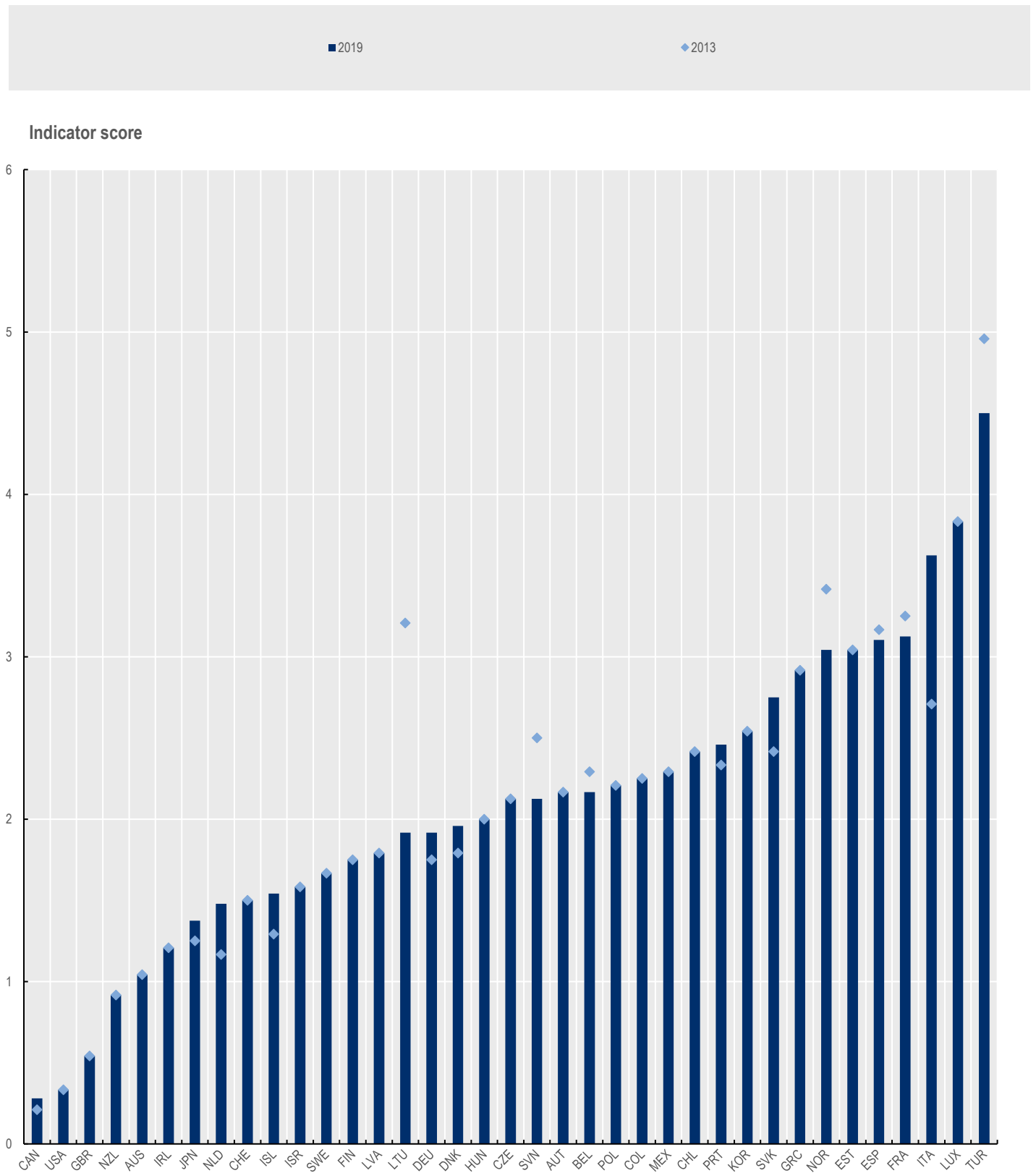## Figure 2: Quantifying recent reforms in employment protection legislation

A. Strictness of regulation for individual and collective dismissals of regular workers
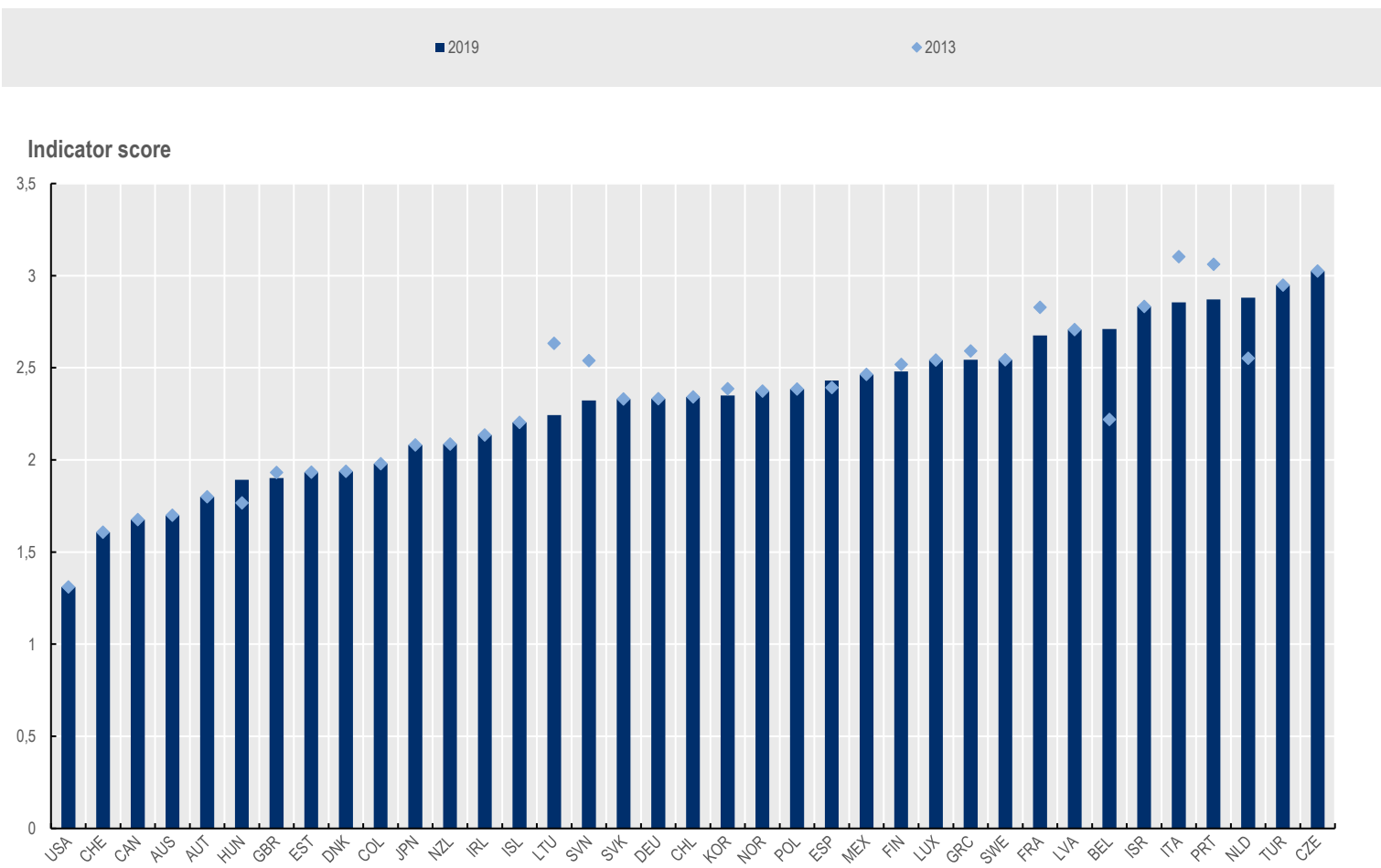
Note: Range of indicator scores: 0-6. Data for Colombia and Lithuania refer to 2014 instead of 2013.
Source: OECD Employment Protection Legislation Database, http://oe.cd/epl.

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[6] "Labor Market Dualism refers to the theory that a labor market is separated into two categories: the Primary Sector and the Secondary Sector. Employees in the Primary Sector have jobs with good pay, good job roles, company status and job security, as well as clean and safe working conditions, and the potential to be promoted. Such laborers also tend to be unionized, which has a big impact on both the job security and the benefits they have access to. On the other hand, the Secondary Sector has workers with low-status jobs who make a low-to-minimum wage, operate in poor working conditions, and have poor job security and little opportunity for promotion." (bambooHR, no date)

B. Strictness of regulation of hiring temporary workers

Indicator score

■ 2019   ◆ 2013

X-axis categories: CAN, USA, GBR, NZL, AUS, IRL, JPN, NLD, CHE, ISL, ISR, SWE, FIN, LVA, LTU, DEU, DNK, HUN, CZE, SVN, AUT, BEL, POL, COL, MEX, CHL, PRT, KOR, SVK, GRC, NOR, EST, ESP, FRA, ITA, LUX, TUR

Note: Range of indicator scores: 0-6. Data for Colombia and Lithuania refer to 2014 instead of 2013.
Source: OECD Employment Protection Legislation Database, http://oe.cd/epl.

➢ Total Spending on Labor Markets & Out of Work Income Maintenance Expenditure Indicators

Fiscal policies aimed at improving labor market conditions significantly affect the functioning of the latter. As discussed in the literature review, Active Labor Market Policies seem to play a central role in mitigating the short-run adjustment costs of implementing labor market deregulation reforms.

This thesis uses the OECD total public spending on labor markets index to proxy the total amount of money spent on active labor market policies to account for the aforementioned effect. According to OECD: "Public spending on labor market programs includes public employment services (PES), training, hiring subsidies, and direct job creations in the public sector, as well as unemployment benefits. In particular:

- PES comprises placement and related services and benefits administration.
- Training includes institutional, workplace, and alternate/integrated training and extra support for apprenticeship.
- Employment incentives include recruitment incentives, employment maintenance incentives, job rotation, and job sharing.
- Unemployment benefits (also known as unemployment insurance) are state-provided insurance that pays individuals weekly when they lose their job at no fault of their own and meet specific eligibility requirements. OECD classifies unemployment benefits in the data as out-of-work income maintenance and support." (OECD, 2021b)

The data used to build this index are based mainly on information about individual labor market programs that appear in state budgets and the accounts and annual reports of bodies that implement the programs. This indicator was calculated on a yearly basis for 37 OECD countries during the period 1985-2018 and is measured as a percentage of GDP. (Kagan, 2020; OECD, 2021b)

However, since a robust finding of the empirical literature is that generous unemployment benefits aggravate labor market outcomes (Atkinson & Micklewright, 1991; Hunt, 1995; Carling, Holmlund, & Vejsiu, 2001; Nickell, 1997), this thesis includes, in addition to the total public spending on the labor market index, an unemployment benefits index. That's pursued in order to isolate the effects of the two and minimize possible endogeneity problems.

To this end, drawing from the total public spending on labor markets data pool, I use out-of-work income maintenance and support spending to proxy the unemployment benefits and construct the relative indicator. The data available on the latter span, just

as with the total public spending index, the period 1985-2018. The index is calculated on a yearly basis and is measured as a percentage of GDP.

The following figure depicts the 2018 total public spending on labor markets (dots) and out-of-work income maintenance support (rhombuses) for 32 OECD countries as a percentage of GDP. The colored dots and rhombuses represent 22 of the 27 EU member-states. Data on the 2018 Total public spending on labor markets are not available for Greece and Mexico.

Figure 3: Total public spending on labor markets / Out-of-work income maintenance and support, % of GDP, 2018
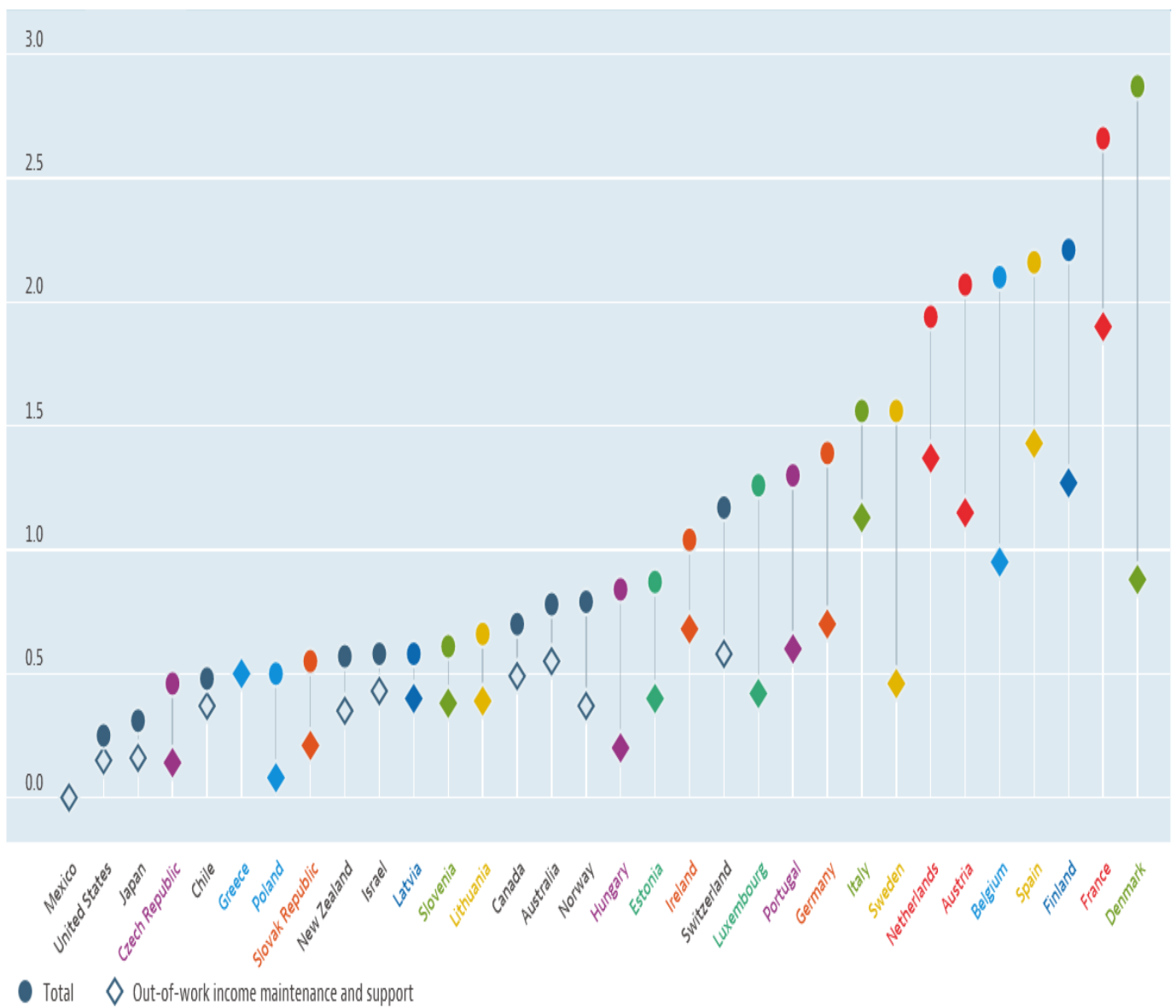
Source: Labour market programmes: expenditure and participants, (OECD, 2021b)

As can be deduced from the graph portrayed above, European countries tend to favor a more interventionist approach, expending more money (as a percentage of GDP) on both ALMP's and unemployment benefits than their other OECD counterparts. In contrast, the United States, Mexico, and Japan are the most fiscally retracted countries from the sample regarding spending on labor market policies.[7]

- ## **Indicators of Financial Market Regulation**

  ➢ ## **Interest Rate Controls**

Detragiache, Abiad, and Tressel (2008) discuss what interest rate controls are:

"One of the most common forms of financial repression is interest rate controls. In the most restrictive case, the government specifies both lending and deposit rates by fiat or equivalently sets ceilings or floors tight enough to be binding in most circumstances. An intermediate regime allows interest rates to fluctuate within a band. Finally, interest rates are considered fully liberalized when all ceilings, floors, or bands are eliminated" (p.284)

Why do countries introduce interest rate controls?

Consumer protection is the primary objective of most countries implementing interest rate controls, particularly to those with ceilings on lending rates. Achieving financial stability is another goal set by many countries, especially in those that use a ceiling on deposit interest rates. Other grounds, such as financial inclusion or bolstering the monetary policy transmission channels, are reported primarily by countries setting a floor for deposit interest rates (Calice and Garcia Mora, 2020). Finally, interest rate controls are a popular strategy used during crises (including the Covid-19 pandemic) to bolster economic activity; by keeping down the cost of borrowing, governments aim to stimulate demand in the hopes of revitalizing economic activity ((Detragiache, Abiad and Tressel, 2008; Calice and Garcia Mora, 2020).

  ➢ ## **State Ownership in the Banking Sector**

Detragiache, Abiad and Tressel (2008) further illuminate another important dimension of financial sector regulation:

"Ownership of banks is the most direct form of control a government can have over credit allocation. Although often the result of a conscious policy decision by the

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[7] For all the indicators used in the Labor Market Regression, I use data spanning the period 2000-2018 for 21 OECD countries. Those are not identical to the 21 countries used in the Product Market regression due to lack of data availability for specific countries.

authorities (e.g., in India beginning in 1969), state ownership can also be the result of nationalization following a banking crisis (e.g., Mexico in 1982 or Indonesia in 1998). In coding the database, one ought to look at the share of banking sector assets controlled by state-owned banks. Thresholds of 50 percent, 25 percent, and 10 percent are often used to delineate the grades between total repression and full liberalization." (p.284)

> ## ➤ Credit Controls

Many countries require that a minimum amount of bank lending be directed to specific "priority" sectors (e.g., agricultural firms, selected manufacturing sectors, or small-scale enterprises) for industrial policy purposes or for the government to finance budget deficits.

> ## ➤ Banking and Securities Markets Indicator

All the financial market regulation indicators mentioned above are encapsulated in the Banking and Securities Markets indicators, constructed by Gokmen *et al.* (2021). "The indicator of reforms in the banking sector is coded by considering the removal or reduction of: (i)"credit controls, such as subsidized lending and directed credit"; (ii) "interest rate controls, such as floors or ceilings"; (iii) restrictions on competition, such as barriers to the entry in the banking market (e.g., "licensing requirements or limits on foreign banks") and "limits on branches"; (iv) degree of ownership of banks by the public sector." (p.8). The securities market index considers independent regulators and legal restrictions that impact the development of markets for equities and bonds. (Gokmen *et al.*, 2021).

The original database spans 35 years (1973–2006), and it comprises numerous countries (91 advanced and developing economies). I use data on 21 countries spanning 1980-2006 because of missing values in the financial indicators and/or the real GDP growth and GDP per capita databases. "The financial indicators take values between zero and one, where higher values denote a greater degree of reforms in the sector under consideration" (Pratiet al.2013, p.948). As a result, higher indicator values imply more market-oriented reforms and limited regulation in the financial sector. (Gokmen *et al.*, 2021)

> ## ➤ Market Capitalization Index

This thesis uses the World Bank's Market Capitalization of listed domestic companies Index, one of the most widely used indicators in the literature (Fetai, 2018), to capture the degree of financial market development. I deemed its inclusion necessary because, drawing from the various studies explored, I suspected/hypothesized that financial

market reforms are significantly correlated with financial development, which in turn affects economic growth.

Market Capitalization is defined "as the share price times the number of shares outstanding (including their several classes) for listed domestic companies and is calculated as a percentage of GDP" (World Bank, no date c). The World Bank's database excludes investment funds, unit trusts, and companies whose only business goal is to hold shares of other listed companies.[8]

- ## **Indicators of Economic Growth and Development**

  ➢ **IMF's Real GDP Growth Indicator**

As regards my dependent variable, I use the IMF's Real Gross Domestic Product (GDP) growth indicator to approximate economic growth. As expressed by the Gross Domestic Product, the latter measures annual changes in economic development, adjusted for inflation or deflation. (IMF, 2021) In other words, this indicator captures the changes in the economic output of a country, avoiding the distortions induced by price fluctuations (Banton, 2021). The IMF's real GDP growth database concerns the period 1980-2021, including forecasts up until 2025, for 223 countries and regions. I tailored this data according to the availability of information for the various countries and periods of interest.

  ➢ **World Bank's Real GDP per Capita Indicator**

Additionally, I included the World Bank's Real GDP per capita indicator as an extra control variable in all regressions. That's because the literature suggests that business cycle conditions affect many of the variables already included in my models. At the same time, I wanted to test the hypothesis that the previous period's economic level affects the next period's economic growth. The rationale behind the latter is that the more advanced an economy is, the more (real) economic growth should slow down because of the law of diminishing marginal returns. For example, raising the average education level of the population by two years from a tenth-grade level to a high school diploma, ceteris paribus, would increase production by a certain amount. An additional two-year increase in the education level, such that, on average, people had a two-year university degree, would increase production even more, yet the marginal output gain from the last two-year increase would be diminished. The original database is constructed using constant 2010 US dollars for 185 countries spanning 1960-2019 (World Bank, no date b). Data are tailored according to each regression's needs.

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[8] For all the Financial Market Regression Indicators, I used data from 1980 to 2006 for 21 OECD countries.

Section 4: Econometric Models and Results

Product Market

In the Product Market, I consider two separate regressions. That's because when the regulation in the Telecommunications Sector and overall Product Market Regulation indicators are jointly considered, PMR's statistical significance drops dramatically.

The first regression comprises the following variables:

$$RealGDPGrowth_{it} = \beta_0 + \beta_1 LRGDPGr_{it} + \beta_2 LRGDPPC_{it} + \beta_3 MFP_{it} + \beta_4 PMRRoC_{it} + \varepsilon_{it} \quad (1)$$

LRGDPGr and LRGDPPC denote the one-period lagged real GDP growth and real GDP per capita for the countries i=1,..,n and periods t=1,..k, respectively. MFP stands for the multifactor productivity and PMRRoC for the rate of change of the overall Product Market Regulation indicator. LRGDPGr's inclusion was deemed necessary because it ameliorated the various coefficients' statistical significance. The PMR was transformed into the respective rate of change between the t and t-1 periods because it becomes relatively more significant in this form when compared to a level one. I also used country fixed effects to account for unobserved time-invariant heterogeneities across the countries i=1,…,n. Such heterogeneities could entail differences in the (de)regulations adoption, implementation, etc.

Table 1: Panel Regression Output for the first Product Market Regression Model.

VARIABLES	(1) RealGDPGrowth
LRGDPGrowth	-0.07006499
	(0.12308633)
LRGDPPC	-0.00005910
	(0.00007446)
MultifactorProductivity	0.42587338***
	(0.15009458)
PMRRoC	-1.69306710
	(2.55062687)
Constant	3.44611622
	(3.53810252)
Observations	63
Number of countries	21
R-squared	0.27

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 1 presents the first regression's results. Both the one-period lagged real GDP growth and GDP per capita seem to be negatively related to economic growth. This

accords with the theoretical intuition described in the previous section, namely that, production-wise, the higher an economy's "starting point" is, the lower its (real) economic growth is expected to be due to the law of diminishing marginal returns. Multifactor productivity seems to positively and significantly (at 1% confidence level) affect economic growth. This result is in line with the rich empirical literature that suggests that improvements in the overall efficiency with which labor and capital inputs are used together in the production process significantly affect economic growth. Hence, since a recurrent finding of the empirical literature, as discussed in Section 2, is that product market deregulation reforms can improve various aspects of productivity (including the one in question), it can be deduced that product market liberalization indirectly boosts economic growth, to the extent that it enhances productivity. Regarding the PMR indicator, increased overall regulation in the Product Market seems to negatively affect economic growth, yet I find no evidence of it being a statistically significant effect.

The second regression considered in the Product Market is the following:

$$RealGDPGrowth_{it} = \beta_0 + \beta_1 LRGDPGr_{it} + \beta_2 LRGDPPC_{it} + \beta_3 TelecomRoC_{it} + \varepsilon_{it} (2)$$

Just as in the previous regression, LRGDPGr and LRGDPPC denote the one-period lagged real GDP growth and GDP per capita, respectively. TelecomRoC is a component of the PMR indicator that captures the degree of regulation in the Telecommunications sector. Similar to the PMR, it was codified as the rate of change between the t and t-1 periods. The regression was conducted using country-fixed effects.

Table 2: Panel Regression Output for the second Product Market regression model.

VARIABLES	(1) RealGDPGrowth
LRGDPGrowth	-0.07500510
	(0.11747229)
LRGDPPC	-0.00003365
	(0.00007150)
TelecomRoC	-1.96710442**
	(0.85371663)
Constant	2.00001329
	(3.31774959)
Observations	63
Number of countries	21
R-squared	0.21

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 2 presents the regression results. As can be deduced, both the one-period lagged real GDP growth and GDP per capita retain their negative relationship with (real) GDP growth; the law of diminishing marginal returns still stands. With respect to regulation in the Telecommunications sector, the results suggest that more stringent regulation therein has a negative and significant (at 5% confidence level) impact on real GDP growth.

Labor Market

The regression equation for the labor market is as follows:

$$RealGDPGrowth_{it} = \beta_0 + \beta_1 LRGDPPC_{it} + \beta_2 EPLReg_{it} + \beta_3 EPLTemp_{it} + \beta_4 ALMPExp_{it} + \beta_5 OutofWorkExp_{it} + \varepsilon_{it} \ (3)$$

, where LRGDPPC denotes the one-period lagged real GDP per capita, EPLReg the Employment Protection Legislation Index for regular workers, EPLTemp the Employment Protection Legislation Index for temporary workers, ALMPExp the total expenditure on Active Labor Market Policies and OutofWorkExp the total out-of-work income maintenance and support spending. I use the real GDP per capita's first lag in order to capture the extent to which an economy's previous economic level affects the next period's economic growth rate and account for business cycle conditions.

Table 3: Panel Regression Output for Labor Market

VARIABLES	(1) RealGDPGrowth
LRGDPPC	-0.0000174
	(0.0000142)
EPLRegular	-0.0114844
	(0.2943347)
EPLTemporary	-0.2523334
	(0.2431047)
ALMPExp	0.5963002
	(0.5068436)
OutOfWorkExp	-2.3759370***
	(0.7323650)
Constant	4.3430594***
	(0.9707853)
Observations	378
Number of countries	21
R-squared	0.115

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

According to the regression results, the previous period's real GDP per capita seems to negatively, yet insignificantly, affect economic growth. Again, the aforementioned negative relationship is probably the byproduct of the law of diminishing marginal returns. As regards the Employment Protection Legislation Indices, more stringent regulation for both regular and temporary workers seems to negatively affect economic growth. This result partially aligns with the empirical studies considered in this thesis. That's because the result suggests that regulation for temporary workers negatively affects real GDP growth and has relatively more impact on the latter than regulation for regular ones does, although, contrary to the literature, EPLTemporary remains insignificant. With respect to the Total Expenditure on Labor Market Policies, the regression results suggest that increasing the former positively affects economic growth, results that confirm the burgeoning literature that highlights the stabilizing role of general labor market stimuli. Finally, in accordance with the empirical literature, increasing out-of-work income maintenance expenditure seems to significantly (at 1% significance level) impair real economic growth.

To ameliorate the various coefficients' significance and reduce endogeneity, I explored the inclusion of other control variables used in the literature, such as the tax wedge and unemployment rate, as well as panel regressions with entity and/or time fixed effects and independent variables transformed into rates of change. Unfortunately, those attempts merely worsened both the coefficients and the overall model's statistical significance. Possible remedies may entail checking and controlling for simultaneous causality bias and/or including other control variables, remedies that were not tested in this thesis.

Financial Market

The econometric model considered in the Financial Sector is:

$$RealGDPGrowth_{it} = \beta_0 + \beta_1 LRGDPPC_{it} + \beta_2 BankingIndex_{it} + \beta_3 SecuritiesMarketIndex_{it} + \beta_4 MarketCap_{it} + \varepsilon_{it} \ (4)$$

, where LRGDPPC denotes the real GDP per capita in the previous period and MarketCap the Market Capitalization of listed domestic companies. When conducting the regression, I controlled for unit fixed effects to capture time-invariant, cross-sectional non-observed factors and thus reduce possible omitted variable bias.

As can be deduced from the regression output depicted below, the level of real GDP per capita in the previous period is significantly (at 1% confidence level) and negatively related to real GDP growth, as expected. Additionally, the results suggest that increased Market Capitalization positively and significantly (at 1% confidence level) affects real economic growth. This finding is in line with the overwhelming evidence coming from the academic literature that underscores the various gains of financial development, such as lower transaction costs and improved resource allocation, gains that contribute to propelling economic growth. A caveat here is that, when

interpreting the aforementioned positive and significant relationship, one ought to be careful not to mistakenly infer a positive causal relationship between financial deregulation reforms and economic growth; financial development, as proxied here by the market capitalization index, can be but is not necessarily the result of financial market deregulation. Hence, to the extent that they lower the various costs incurred in the financial system and increase market capitalization, financial market deregulation reforms do enhance economic growth.

Table 4: Financial Market Regression Output

VARIABLES	(1) RealGDPGrowth
LRGDPPC	-0.00013490***
	(0.00002706)
SecuritiesMarketIndex	0.82134485
	(0.75831084)
BankingIndex	0.45797360
	(0.74855306)
MarketCap	0.02253383***
	(0.00352975)
Constant	5.07714430***
	(0.72240662)
Observations	505
Number of countries	21
R-squared	0.09

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Concerning the Securities Market and Banking indices, Table 4 suggests more market-oriented reforms in the Banking and Equities & Bonds sectors increase real GDP growth, yet no evidence is found that their impact on the latter is statistically significant.

Section 5: Concluding Remarks and Policy Suggestions

Because of their foundational nature and often difficult-to-gauge ramifications, market deregulation reforms are a topic of immense academic interest and a tug of war between various researchers, policy panels, and politicians alike. Owning to unpredictable occurrences and the availability of new evidence, both deregulation's proponents and detractors often end up being tumbled by their "conceptual" counterparts. This thesis joined the structural reforms discussion by examining and taking stock of the vast scientific literature on the (de)regulation-growth relationship in addition to empirically testing its validity and robustness.

With an inevitable degree of simplification in the hopes of painting a succinct picture from the literature mosaic, Section 2 offers the following insights with respect to the (de)regulation-growth nexus:

Concerning liberalization in the product market, existing evidence suggests that the former has predominantly growth benefits, usually materializing over the medium to long term, as well as short-run recessionary effects. The deregulation gains take the form of increased productivity, irrespective of the business cycle condition, magnified innovation incentives, improved resource allocation, enhanced competition, increased employment, and multiplied productive capacity. To smooth transition dynamics and take into consideration sector-specific characteristics and effects, many researchers argue for the joint implementation of product market deregulation reforms and macroeconomic policies strategically directing fiscal and/or monetary stimuli.

Similar to the product market ones, the literature suggests that labor market deregulation reforms are interwoven with medium to long-term benefits, although with more pronounced short-run adjustment costs. Evidence strongly suggests that a more generous and longer duration of unemployment insurance increases unemployment. Additionally, more pronounced employment protection is associated with longer unemployment duration, and deregulation of temporary contracts is found to be positively and significantly related to economic growth. Having a flexible labor market can dull the impact of financial crises on unemployment and shorten the former's overall duration. At the same time, labor market reforms may entail short-run recessionary effects and induce reform fatigue. To mitigate the short-run adverse effects, cushioning labor market reforms with specific types of active labor market policies is deemed to be imperative. Other factors, such as labor market institutions, product market reforms, and business cycle conditions, are also likely to play a significant role in shaping labor market and macroeconomic outcomes and thus need to be taken into consideration when drafting labor market liberalization policies.

Growth-wise, deregulation in the financial market comes with both substantial risks and rewards. On the one hand, financial market liberalization can propel economic growth by improving the efficiency and effectiveness of the monetary policy, attracting and retaining capital, helping to build government credibility, lowering borrowing costs, and

amplifying financial development. On the other hand, deregulation of the financial sector without any due regard for the labyrinthine interactions and various variables affecting the effectiveness of such reforms, such as the role of financial institutions, the financialization and FDI threshold effects, unaddressed structural problems, can hamper economic growth. That's because, under such circumstances, financial deregulation can, amongst others, magnify growth volatility, increase the likelihood of crisis contagion, cause inflationary credit bubbles, and allow for untrammeled, speculative, and destabilizing capital flows.

As can be deduced from the findings outlined within this thesis, a common and underlying theme regarding deregulation across the various markets is that the former is a necessary but not sufficient condition for economic growth. That is, countries that liberalize their markets experience higher economic growth rates than their own, heavily regulated version would have experienced had they not deregulated their markets. Yet, according to the literature, markets deregulation reforms per se are not all that's needed to achieve economic growth; other factors, such as fiscal stimuli, economic and political institutions, pacing and sequencing of reforms, need to be accounted for and incorporated within broader reform policies in order for deregulation reforms to live up to and fulfill their raison d'être, namely to boost economic growth and improve people's standard of living.

Taking into consideration potential limitations of my research, such as lingering methodological issues of the indicators used, omitted variable and simultaneous causality bias in the regressions, the results yielded from the econometric models suggest that the way to improve people's standard of living is paved with introducing deregulatory product market reforms that increase productivity and reduce the state's imprint on the Telecommunications sector. Additionally, governments ought to prioritize cutting on out-of-work income maintenance expenditure and redirecting those funds into financial market policies that spur financial development, i.e., increase the size, efficiency, and stability of the financial sector as well as reduce information acquisition, transaction, and other costs existing therein.

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