GREBRAD WP3, Deliverable 3.1:

Non-technical Summary of the Project's Main Findings and Policy Recommendations *

This research project has investigated the links between fiscal austerity policies, skills mismatch in the labor market and predominantly high-skilled immigration ("brain drain") focusing on the decade-long crisis in Greece. The available data indicates that roughly one in three workers in the country are employed in jobs that require fewer qualifications than the ones they possess. Greece ranks third among the Eurozone countries, after Spain and Cyprus, well above the EU average. **Mismatch implies that resources are allocated inefficiently**, leading to lower productivity. In other words, resources are trapped in unproductive uses.

In the aftermath of the global financial crisis and the European debt crisis, a rich literature emerged on the various unintended consequences of fiscal consolidations, i.e. cuts in government spending or increases in taxation that aim to bring the deficit and debt levels down. However, to the best of our knowledge, there has been little exploration of the possible effects on skills mismatch in the labor market. The findings of this project show both theoretically and empirically (using data for Greece) that **fiscal tightening can lead to a rise in the mismatch rate**. The main policy implication of our findings is that **fiscal consolidation policymakers should take into account the potential implications for skills mismatch in the labor market**.

One could even calculate **fiscal multipliers for the mismatch rate** in the same way that the literature provides estimates of fiscal multipliers for output or unemployment rates. The effectiveness of fiscal policy is usually measured in the economics literature by the fiscal multiplier. The fiscal multiplier measures how much one currency unit (for example, one euro) of an increase or decrease in government spending translates into an increase or decrease in Gross Domestic Product (GDP). If the value of the multiplier is higher than one, then GDP increases/decreases by more than the expansion/contraction in government spending. These estimates are very useful for policing making as they help to illustrate the effect of change in government spending or tax revenue on GDP or unemployment. Therefore, they can guide policymakers who design fiscal stimulus packages or fiscal retrenchment policies.

Mismatch matters especially in the presence of a decline in human capital stock (for example, caused by a "brain drain"). The project findings show that **the link between mismatch and emigration is two-way**. First, the mismatch rate

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matters for predominantly high-skilled immigration as available survey evidence indicates that about 1 in 5 Greek emigrants considers the inability to find a job in their field of study as a reason for emigration from the country. At the same time, the other direction of the relation is that emigration could affect the mismatch rate in the labor market. For example, emigration frees up positions for stayers. In addition, during bad times, recent research indicates that emigration could amplify demand losses and therefore worsen unemployment spells.

We find using a theoretical macroeconomic model that **an adverse productivity shock reduces investment and primarily hurts the high-skilled who react by turning to both jobs abroad and mismatch jobs in the domestic labor market. A negative shock to government spending crowds-in investment and primarily hurts the low-skilled who thus turn to jobs abroad.** Following the fiscal cut, the high-skilled instead reduce their search for mismatch employment and later they also reduce their search for jobs abroad.

We also examine the output multipliers implied by our theoretical model for (wasteful) government spending. The value of the cumulative multiplier is found in the range of 0.6-0.7. These values are plausible and in line with the literature. The fact that multipliers for wasteful spending are smaller than one implies that cuts in this component of the government's budget generate relatively little incentive to emigrate. Nevertheless, our findings also indicate that the magnitude of the multiplier is amplified in the presence of international labor mobility. This means that **government spending cuts hurt the economy more when the labor force can emigrate because demand losses are amplified**. In other words, emigration amplifies the recession caused by the fiscal cut. This result is in line with our finding that low-skilled emigration is quite persistent, while the medium-term return migration of high-skilled workers is rather weak.

The main policy lesson here is that **fiscal consolidation policymakers should take into account the potential implications for skills mismatch and emigration, as well as the feedback effects from the rise of mismatch and emigration on economic activity**. In addition, **in the face of recessionary shocks that increase the high-skilled emigration, thus contributing to brain drain, policies to support investment and to incentivize the high-skilled workers to remain in the domestic economy should be put in place.**

Finally, a natural question that arises in this context is how we should think of the **key policy implications in the era of automation and artificial intelligence**. In European periphery countries, like Greece, the degree of automation is much lower than core countries, like Germany, which has the third highest degree of automation, behind the U.S. and Japan. Automation and artificial intelligence have implications for both low and high-skilled employment. It would be important to also study how they can affect skills mismatch in the economy.