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Economic Growth in Greece: barriers and prospects

Briefing Report

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Economic growth in Greece: Barriers and prospects

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1 Motivation and aim

Among the euro zone (EZ) periphery countries hit by the global financial crisis of 2007-8, Greece experienced the worst decline and the biggest need for international support.[1] Between 2008 and 2016, Greece lost more than one fourth of its GDP. It also had to rely on a number of official or unofficial programs of financial assistance provided in various forms by the EU, the ECB and the IMF; only the three official fiscal bailouts between 2010 and 2015 amounted to around 290 billion euros. Although GDP growth managed to rebound in 2017, the recovery was fragile (driven mainly by net exports and private consumption) even before the eruption of the new economic crisis caused by the covid-19 pandemic in early 2020. For instance, at the end of 2019, private investment remained at around 11% of GDP only, public debt was around 175% of GDP, external liabilities were around 140% of GDP with the current account still in deficit, unemployment was around 17% and, perhaps more importantly, Greece scored poorly in institutional quality vis-à-vis other EU and OECD countries.[2] Besides, as part of the various bailout programs, around 70% of Greek public debt is owned by public institutions of the EU and the ECB.

The aim of this project is fourfold. First, we search for the drivers of the Greek debt crisis. This includes driving forces and propagation mechanisms through which the driving forces shaped equilibrium outcomes and in particular the big output loss between 2008 and 2016. Second, we conduct a decomposition exercise to quantify the relative contribution of various driving forces, as they are in the data, to this output loss. Third, building upon the first two steps, we search for counter-factual scenaria that could have possibly given better outcomes between 2008 and the covid-19 pandemic. Fourth, we study what can happen from now on given the new crisis triggered by the covid-19 outbreak. Putting all this together, our aim is to identify the barriers to, and the engines of, growth. This helps us to draw some macroeconomic policy lessons that could be useful in the future. We also study distributional implications.

[1] For the Greek crisis, see e.g. Sinn (2014, 2015), Ioannides and Pissarides (2015), De Grauwe (2016), Alesina et al. (2019, chapter 8), Brunnermeier and Reis (2019) and Alogoskoufis (2019). For formal models, see e.g. Arellano and Bai (2016), Gourinchas et al. (2017), Papageorgiou and Vourvachaki (2017), Economides et al. (2017), Glomm et al. (2018), Dellas et al. (2018) and Chodorow-Reich et al. (2019). See also the papers in the volumes edited by Meghir et al. (2017) and Bournakis et al. (2017). See below for details and how our work differs.

[2] In Greece, weak institutions are captured by various indices measuring the poor enforcement of the law, vandalism and violence, an inefficient public administration, a labyrinth of bureaucracy, a slow judicial system, laws and regulations that limit competition, tax evasion, poor education (PISA) scores, etc. For institutional quality in Greece relative to other countries, see e.g. Angelopoulos et al. (2009), Masuch et al. (2018), Afonso and Kazemi (2016), Kollintzas et al. (2018) and Christou et al. (2020).

2 Model and methodology

The vehicle of analysis is a medium-scale micro-founded macroeconomic model of a small open economy participating in a currency union. In addition to a number of real and nominal frictions commonly used by the quantitative macroeconomic literature, the model incorporates - in an attempt to mimic the Greek case - a rather detailed public sector including public employees as a separate income class, problems of institutional quality in the form of ill-defined property rights that trigger anti-social activities, and, during the debt crisis, international financial assistance combined with fiscal austerity. To understand better the menu of macro policy instruments used, we model separately the Treasury (fiscal authority) and the national central bank participating in the Eurosystem (monetary authority). In other words, the model incorporates the main ingredients of the Economic Adjustment Program as described above, namely, fiscal austerity combined with international financial assistance, where the latter includes the official fiscal bailouts as well as balance-sheet, or quantitative, monetary policies by the Eurosystem. The revenue from the official fiscal bailouts make up for the loss of government revenue from being shut out from private capital markets and this happens at non-market interest rates. At the same time, financial frictions (as in Curdia and Woodford (2010, 2011)), as well as the issuance of *TARGET2* liabilities as part of the monetary base of the national central bank (see Sinn (2014) and Whelan (2014, 2017)), provide the channels through which quantitative, or balance sheet, monetary policies, as allowed by the ECB, can have real effects and thus - like the official fiscal bailouts - "alleviate the fiscal burden" (see Reis (2017)).

The model is parameterized using Greek data and is then solved numerically distinguishing two sub-periods: the years of the sovereign debt crisis between 2008 and 2019, and the new era marked by the pandemic shock in early 2020. The model is solved under perfect foresight using a Newton-type non-linear method implemented in DYNARE.

3 Main results for the sovereign debt crisis

Our simulations show that the Economic Adjustment Program (namely, the fiscal austerity mix combined with the official fiscal bailouts and the various types of monetary accommodation provided by the ES), jointly with developments in institutional quality (specifically, the deterioration of protection of property rights), can account for most of the cumulative loss in GDP between 2008 and 2016. In particular, departing from 2008, when we feed our model with the Economic Adjustment Program and an index of property rights, both as they are recorded in the data, the model, via its propagation mechanisms, produces around 23% fall in GDP between 2008 and 2016 as compared to around 26% in the data. The Economic Adjustment Program accounts for 13% and the deterioration in property rights adds another 10%.

On the other hand, counterfactual scenarios during the debt crisis imply the

following. First, things could have been much worse. Despite the conflicting views about the content of the bail-out program, especially regarding its fiscal austerity preconditions, our numerical simulations imply that financial assistance (provided by other EU counties and institutions, the ECB and the IMF) has helped the Greek economy to avoid the worst. For instance, if the fiscal needs were financed by, say, higher income taxes rather than by the three official fiscal bailouts, the loss in output would have been tremendous, other things equal. Also, even if one is willing to make the unrealistic assumption that the Greek government were able to keep selling its bonds to the private market, the high market interest rates it would have to pay would have led to a bigger output loss than that in the data. Besides, when we make the assumption that the ECB did not follow an accommodative policy towards Greece, the model ceases to exhibit a (stable) solution implying (to the extent that one trusts our model) that this scenario would be non-feasible, other things equal. Second, things could also have been better. The output loss could have been significantly smaller if some things had been done slightly differently. In particular, the output loss during 2008 and 2016 could have been around 10% only (always relative to the departure year of 2008), if the country had followed an alternative fiscal policy mix (for example, a cut in income taxes, or an increase in public investment, both financed by a cut in tranfer payments), if reforms in the product market had been adopted and implemented in a faster and/or more effective way so as the degree of product market liberalization to get closer to that in the core EZ countries; and, above all, if institutional quality had not deteriorated since 2008 but had simply remained at its pre-crisis level. It has to be emphasized that improvements in these areas did not have to be in the area of fantasy; in our counterfactuals, we assume small changes vis-a-vis the values in the data. That is, small changes could have made things much better.

4 Main predictions for the new pandemic crisis

We use the same model to quantify the impact of the recent covid-19 pandemic on the Greek economy under different actual and hypothetical scenaria. Following Eichenbaum et al (2020), we model the pandemic shock as a temporary adverse labour supply shock. This mimics the effects of the necessitated containment measures on labor supply. Departing from the year 2019, and assuming a rather moderate value for the adverse labor supply shock that lasts during 2020 only, our simulations show that in 2020, and in the fictional case of no policy reaction, the Greek economy could suffer an output loss of around 12% relative to 2019 and public debt to GDP could jump to more than 220%. This shows the big vulnerability of the Greek economy to supply shocks even of relatively small magnitude. Policy responses, on the other hand, can mitigate the economic damage. For example, responding with higher public spending and lower taxes, as the Greek government has already done or has announced to do, can make the recession milder (the output loss can be around 8.5% in 2020) and the rise in public debt smaller (it could be around 214%). The same simulations

show that the expected financial assistance from the EU via the Recovery Fund (around 32 billion euros for Greece) can seriously help the Greek economy but this depends crucially on the way it is used. If it is used, for example, to finance public investment, it will limit the output loss to around 6.5% in 2020 and will also put the country on a sustainable path with public debt falling to around 168.5% in the coming years thanks to economic growth. If, on the other hand, it becomes a common pool for rent seeking, it will be completely wasted (it will be as if the country has received zero aid from the EU) and the country will be trapped in a bad equilibrium in the coming years. Product market liberalization and developments in institutional quality will also be crucial, as they have been during the debt crisis in the 2010s.

5 Related literature and how we differ

There has been a rich literature on the Greek debt crisis. Papers close to ours, which have also used micro-founded macroeconomic models, include Arellano and Bai (2016), Gourinchas et al. (2017), Papageorgiou and Vourvachaki (2017), Economides et al. (2017), Glomm et al. (2018), Dellas et al. (2018) and Chodorow-Reich et al. (2019). A common finding of most of these papers, which is also a result shared by our work, is that roughly half of the loss in output between 2008 and 2016 is explained by the fiscal austeriry package adopted.

Our work enriches this literature along several dimensions. One key difference is the way we model economic policy. Here, we take a more balanced view by taking into account, not only the costs of fiscal austerity as the above papers have done, but also the role, and the potential benefits, of international financial assistance, where the latter has been both fiscal (fiscal bailouts) and monetary (ECB support) as well as both explicit (e.g. official rescue programs) and implicit (e.g. *TARGET2* liabilities). We do so because one cannot study fiscal austerity without taking into account the other side of the coin which is international financial assistance; as said, the former was the precondition for the latter in the economic adjustment program agreed between Greece and its creditors. We also study the role of the deterioration in institutional quality that occured at the same time and has been triggered by the fiscal austerity measures (and further fuelled by populism from several political sides). Another difference is that several of the above papers, especially Gourinchas et al. (2017), Economides et al. (2017) and Chodorow-Reich et al. (2019), employ a large menu of shocks to explain the crisis, including shocks to TFP, to interest rates on public debt, to default rates, to banks' funding costs, etc. Here, by contrast, most of these variables are endogenously determined. In our paper, when we study the debt crisis, there are two driving forces only (the time-paths of the economic adjustment program and an index of institutional quality, both as recorded in the data), and then the propagation mechanisms of our model provide the channels through which these two driving forces shape macroeconomic and distributional outcomes. For example, to the extent that weak property rights distort private incentives leading to resource misallocation, this distortion shows up as an

adverse productivity shock endogenizing the TFP.[3]

Putting all this together, despite a lively debate on the role of financial assistance and institutional quality in policy circles, there have not been theoretical general equilibrium models tailored to study these issues in a unified framework; our paper fills this gap by developing such a model and uses it to quantitatively evaluate their effects. Finally, in terms of findings, we add some new results to those of the literature. For example, we show what would have happened without financial aid from the EU and ECB. We also show that the resource misallocation and output loss, caused by the further deterioration of property rights and the fear of predation since the end of 2008, are particularly large.

But our work is more than a country study. We also contribute to the literature on the nexus among fiscal, public finance and balance-sheet, or quantitative, monetary policies. And we do so in the context of an open economy being a member of a currency union like the EZ. Most of the related papers have studied this debated nexus in the context of a closed economy, mainly the US. On the other hand, the models used by the ECB have focused on the link between private banks and the ECB staying away from fiscal financing needs (see e.g. Coenen et al. (2018)). Here, by contrast, building on this literature, as well as on the work of Reis (2013, 2017) and Sinn (2014), we study how balance sheet monetary policies can affect fiscal and country resources in a model that exhibits the key features of the Eurosystem. We show that the role of the ECB in the Greek debt crisis has been vital.

[3] The TFP measures the efficiency with which resources are used in production (see e.g. Prescott (2002) and Restuccia and Rogerson (2013)). As is widely acknowledged, differences in TFP are an important factor in accounting for differences in incomes across countries (see e.g. Prescott (2002)). But it is also acknowledged that TFP is endogenous at macro level being determined, for instance, by tax policies and institutions that shape the risks of expropriation. In our model, weak institutions lead to resource misallocation and this determines the "effective" TFP.

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