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Preface

Disclaimer: The ideas and positions expressed by the authors of the book are exclusively personal and do not in any way represent the positions of the IMF and its policies.

This book deals with the effects produced on the macroeconomic variables by exogenous changes in fiscal policy. The focus is on the Euro Area, both as a whole and on a group of member countries affected by high levels of public and/or private indebtedness. We also examine the spillover effects exerted on the other member countries by expansionary fiscal policies pursued by the leading country of the Euro Area, i.e. Germany. These topics are of the greatest relevance, and in recent years, marked by the so-called Great Recession, they have consequently received much attention from scholars and policymakers. The methods of our approach are mainly based on the VAR (Vector Autoregression) and VAR panel models.

Inasmuch as the authors belong to three distinct generations of researchers, a selective list of acknowledgements must include, first and foremost, our teachers/supervisors (and subsequently friends) Graziella Bertocchi, Fabio Canova, Mario Forni and Marco Lippi. Our interest in topics of applied macroeconomics owes much to their teaching. Needless to say, we remain in their debt for whatever merit this book may have, while any shortcomings or errors are ours alone. We have received useful comments and suggestions regarding parts of the research on the occasion of seminars held in recent years at the IMF, the Banque de France, DIW Berlin, IMT School of Advanced Studies, Lucca, and in presentations at the International Conference of Economic Modelling, Lisbon 2016, and the VIII Economics and Finance Conference, London 2017. Special thanks are also due to our family members and partners for their patience and support.

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While the book is the result of collective planning, working out and writing, Chap. 2 is mainly to be ascribed to Antonella Cavallo; Chaps. 3, 4 and 5 to Antonio Ribba; Chaps. 6 and 7 to Pietro Dallari. Chapter 6 has also benefited from research on fiscal spillovers in the Euro Area conducted by Pietro Dallari jointly with Era Dabla-Norris and Tigran Poghosyan. Chapter 7 represents a reworking of a chapter of Pietro Dallari doctoral thesis, presented at the Pompeu Fabra University of Barcelona.

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Contents

Chapter 1
Introduction

Abstract In this book we aim to measure fiscal policy in the Euro Area by using structural VAR (Vector Autoregression) and Panel VAR methodologies. In particular, we focus on a group of Euro-area countries affected by high public and/or high private debt. We show that the fiscal austerity has exerted significant recessionary effects in Greece, Italy and Portugal, i.e. high public debt countries but, instead, has had expansionary effects on aggregate output in high private debt economies like Ireland, the Netherlands and Spain. In this book we also motivate the importance for the Euro Area of a fiscal union for purposes of macroeconomic stabilization and, moreover, study spillovers from German fiscal expansions to the other Eurozone economies. We investigate the effects of fiscal shocks on a wide set of macroeconomic variables and also consider the labour market outcomes of fiscal austerity in a set of Euro-area Member States. In this introductory chapter we highlight the content of the book and briefly present and discuss the most relevant topics dealt with.

1.1 The Controversial Macroeconomic Outcomes of Fiscal Policy

The main aim of the investigations conducted in this book is to measure fiscal policy in the Euro Area. We focus on the Economic and Monetary Union (EMU) period and pay particular attention to a selected group of Euro-area countries affected by high public and/or private debt. We also aim to document the important role that a centralized responsibility and conduct of fiscal policy at the Euro-area level, endowed with a sizeable fiscal capacity, might play in order to achieve the goal of macroeconomic stabilization. Another notable subject investigated in this research concerns the ability of expansionary fiscal policy in the core country of the Area, i.e. Germany, to stimulate economic growth in the other countries. We study the effects of exogenous changes in fiscal policy on a broad set of macroeconomic variables by also investigating the response of labor market variables to fiscal austerity in Euro-area countries.

In order to accomplish the task we use structural VAR (Vector Autoregression) and panel VAR models.

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For at least 20 years following the second World War, full employment was a major target for governments of industrialized countries and, in pursuing this goal, a primary role was attributed to fiscal policy. The consensus was that, in line with Keynesian precepts, fiscal policy is a powerful macroeconomic stabilization tool. An important corollary of the traditional Keynesian view concerned the ancillary role played by monetary policy. For example, in Italy, the central bank ensured the full absorption of government bonds, while in the United Kingdom the government retained the formal responsibility for the setting of interest rates.

However, both fact and theories determined in the 1970s a radical rethink of the role of monetary policy (see e.g. Friedman 1968) and, conversely, of fiscal policy. In particular, the oil shocks caused a strong increase in inflation in all oil-importing industrialized countries and the related monetary disorder paved the way for new central bank legislation aiming to strengthen central bank independence and for the definition of macroeconomic targets more skewed towards price stability. These economic and political processes were common to the majority of industrialized Western Countries. The new consensus on the role of monetary policy was well expressed in a letter of 1997 from the Chancellor, Gordon Brown, to the Bank of England Governor, Eddie George, in which new arrangements for monetary policy-making in the United Kingdom were proposed: "Price stability is a precondition for high and stable levels of growth and employment" (Brown 1997).

The Maastricht Treaty of 1992 (Treaty on European Union), in the parts concerning functions and objectives of the European Central Bank (ECB), fully incorporates these views on central bank independence and pre-eminence of the target of price stability.

Although it may sound quite paradoxical to devote a notable space to monetary policy when dealing with fiscal policy, let us note that recent research has confirmed the importance of taking into account that fiscal and monetary policy operate in tango (see, among others, Davig and Leeper 2011).

As far as the goal of full employment is concerned, it would be misleading to believe that central bankers and policy makers may never have neglected the economic and social importance of keeping the unemployment rate at moderate levels. However, the conceptual separation between structural (or "natural" in Friedman's terminology) and cyclical unemployment, which became the dominant view starting from the 1970s - with the related emphasis on structural reforms in labor markets - weakened the importance of a proper management of aggregate demand, and hence the macroeconomic role of fiscal policy.

On the other hand, a group of scholars led by Barro (1981) were critical with regard to the traditional estimation of fiscal multipliers. Barro argued that the size of output fiscal multipliers might have been largely oversized in the Keynesian approach and that only in time of war, in the presence of exogenous military build-ups in government expenditures, were sizeable fiscal multipliers detected. Nonetheless, at the end of the 1980s, some new empirical evidence showed that not only the size but, at a pinch, also the sign of fiscal multipliers may not exhibit Keynesian features since, under certain conditions, credible fiscal contractions may generate expansionary effects on the economy (see Giavazzi and Pagano 1990), through the improvement of expectations of consumers and businesses.

In short, gradually the time-honoured Keynesian view on fiscal policy, together with its use for purpose of stabilization of business cycle fluctuations, became a matter of modern antiques.

In the 1980s and in the 1990s the empirical research based on multivariate time series techniques, aiming to investigate the sources of business cycle fluctuations and the related role of macroeconomic policies, saw the dominance of studies on measuring monetary policy (see Bernanke and Mihov 1998), and the review presented in Christiano et al. (1999), while empirical studies on fiscal policy seemed to be consigned to oblivion. However, and maybe not surprisingly, a rather significant revival of fiscal policy has characterized the last decade, with the economies plagued by the so-called Great Recession. For, large fiscal packages were deployed by a number of countries in response to the severe downturn that had hit the economies following the financial crisis of 2008. For example, one of the largest one, the American Recovery and Reinvestment Act, implied a combination of increase in government expenditures and decrease in government revenues of around 5% of GDP over the period 2008–2010. Of course, this revival of fiscal policy, starting with the influential work by Blanchard and Perotti (2002), has also concerned research on the macroeconomic outcomes of changes in government spending and taxes. In fact, as we try to document in the review presented in Chap. 3, fairly heterogeneous results are found in the most recent literature.

Nonetheless, it seems possible to draw from the bulk of the research an emerging consensus based on the conclusion that the macroeconomic outcomes of fiscal policy are conditioned by a selected set of key macroeconomic factors. Among these, a pre-eminent role is played by: (a) the monetary policy stance; (b) exchange rate regime; (c) degree of openness to trade; (d) country financial conditions. (See, among others, Canova and Pappa 2011, Ilzetzki et al. 2013). In particular, as far as country financial conditions are concerned, in the present research we show that for a proper understanding of the mixed effects of fiscal shocks on macrovariables, often detected in the various economies, it is crucial to take into account both public and private debt.

1.2 Does the Euro Area Needs a Fiscal Union?

Starting with the world economic and financial crisis of 2008, the European economy has experienced a deep recession and an associated strong increase in unemployment to levels never seen in more than two decades. In some Euro-area countries, like Greece and the other southern economies, the recession has shown particular virulence and persistence. In the view of a number of scholars and policymakers, the Great Recession has highlighted various structural weaknesses affecting the Eurozone (see, among others, Pissarides 2016 and De Grauwe and Ji 2016) among which, at least in our opinion, a pre-eminent one is represented by the absence of a Fiscal

Union, i.e. a centralized fiscal capacity and conduct of fiscal policy with the main goal of macroeconomic stabilization in response to large adverse shocks hitting the currency union. Indeed, the Euro Area is a unique historical example of interaction between a centralized conduct of monetary policy and a domestic responsibility of fiscal policy, though this last one is tempered by a common set of European rules.

Thus, in Chap. 2 our answer to the title of this section will turn out to be a qualified yes. "Qualified" in the twofold sense of being based on the empirical study undertaken in the chapter, showing that a centralized fiscal policy in the Euro Area may reach the goal of macroeconomic stabilization, and of being supported by a growing number of scholars and institutions (see e.g. Tabellini 2016 and European Commission 2017).

A quick comparison between the response of fiscal policy to the Great Recession, respectively, in the US and in the Euro Area may help to focus the question. In the late 2008, President Obama had become convinced that a sizeable fiscal stimulus was needed for the US economy, hit by the deepest economic and financial crisis since the Great Depression. This also in light of the difficulties experienced by monetary policy in providing further stimuli to aggregate demand in the presence of interest rates quickly approaching the zero lower bound. Thus, Obama decided to call Christina Romer, the Chair of the Council of Economic Advisers, in order to discuss and design the fiscal package. In fact, a quite aggressive fiscal stimulus plan, of around 5% of GDP, was then approved by Congress in February 2009. The stimulus package, denominated American Recovery and Reinvestment Act consisted in a combination of tax cuts, reinforcement of transfers for unemployment insurance and increase in infrastructure investment (see Romer and Bernstein 2009).

Turning to the Euro Area, who has called (and still calls) who in the case of large adverse shocks hitting the economy, as in the severe economic and financial crisis begun in 2008? Given the lack of a centralized responsibility of fiscal policy and the related absence of a Euro-area fiscal capacity, a strong coordination of national fiscal policies would have been required. Nevertheless, the effective effort made to stabilize the Euro-area economy through the European Recovery Plan turned out to be quite far from that of US, and barely around 2% of GDP.

Another important problem was represented by high public debt levels affecting a group of Euro-area countries, in primis Greece and Italy, that amid growing fears of sustainability in public finances after 2011 led to the implementation in these countries, in compliance with the European common framework for fiscal policy, of severe fiscal consolidation plans. The evidence presented in Chaps. 4, 5 and 7 shows that fiscal austerity in countries like Greece, Italy and Portugal has caused a significant (both economically and statistically) worsening of the recessionary conditions. Clearly, in the presence of a full working fiscal union, an expansionary fiscal policy at the Euro-area level might have contributed to stabilizing the currency area and, at the same time, to making the required macroeconomic adjustment in Greece and in some other Euro-area countries less costly. After all, it may be worth recalling that in the last decade the Euro Area and the World Economy have experienced the worst economic and social crisis since the Great Depression.

In Chap. 2 we find that output fiscal multipliers in the Euro Area are sizeable and well above one. Moreover, we find that in the presence of monetary policy accommodation fiscal multipliers show a substantial increase. A strand of the literature has explored the role of monetary policy accommodation (see e.g. Canova and Pappa 2011, Christiano et al. 2011) and the shared conclusion is that fiscal stimuli have larger effects on aggregate output under an accommodative monetary policy pursued by the central bank.

In Chap. 2 we also provide an outline of the evolution of the common European framework for national fiscal policies, from the Maastricht Treaty of 1992 to the Treaty on Stability Coordination and Governance signed in 2012. As discussed in the chapter, the Euro Area is currently characterized by the presence of a plethora of rules and regulations driving national fiscal policies under the surveillance of European authorities - rules accumulated over two decades and mainly reflecting a paternalistic approach towards national governments and parliaments.

The evolution of the Euro Area towards a full Economic and Fiscal Union, that will likely proceed side by side with the evolution of the Euro Area towards a Political Union and hence a Federal State, will of course require the existence of strict rules governing the national fiscal policies, i.e. it should be clear that the fiscal union is no free lunch. However, also in light of the historical experience of other currency unions and Federal States, rather than a long list of rules, procedures and definitions, what is required is a binding rule on medium term budget balance for member states and a credible no-bailout rule.

An example of credible no-bailout rule comes from the USA where, as stressed by Henning and Kessler (2012), the rule is not written in the Constitution or in laws at the State levels. Yet, since the 1840s, when Congress rejected the bailout of a number of highly indebted states, a no-bailout norm has effectively been in operation in the US fiscal union.[1]

1.3 The Macroeconomic Outcomes of Fiscal Policy in High Debt Euro Area Countries

In Chap. 4 we show that in a group of Euro-area countries affected by high public debt, i.e. Greece, Italy and Portugal, fiscal policy shocks have generated Keynesian effects in the economy under the EMU. In other words, aggregate output has moved in the same direction as exogenous changes in government expenditures. Nonetheless, in another group of Euro-area countries characterized by high private debt, i.e. Ireland, Spain and the Netherlands, the conclusion is opposite: exogenous changes in fiscal variables have produced non-Keynesian effects on the economy in the EMU period. In other words, in this second group of countries we find evidence of expansionary effects exerted by fiscal consolidations.

In the empirical investigation conducted in Chap. 4, we estimate and identify a structural near-VAR model. We take the national countries as small open economies

[1]The implementation of a credible rule may be consistent with isolated exceptions. In fact, the federal government promoted the bailout of the District of Columbia in the 1990s.

operating within a monetary union and thus separate a first block of exogenous Euro-area variables from a second one, which includes an endogenous set of domestic variables. “Near-VAR” since the variables included in the first block are not influenced by the variables of the second block. In other words, the macroeconomic variables selected at the Euro-area level are assumed to unidirectionally cause the domestic variables at all horizons. Thus, although we estimate separate VAR models, one for each country, the adopted specification allows an invariant set of structural shocks at the Euro-area level to be recovered. This methodology was adopted by Cushman and Zha (1997) in order to identify monetary policy shocks in a small open economy, represented by Canada. A recent application of the near-VAR approach, for studying the effects of common monetary policy shocks in a group of Euro-area countries, is provided in Cavallo and Ribba (2015).

Government spending shocks and government revenues shocks are identified by imposing a set of contemporaneous restrictions essentially based on the idea, first suggested by Blanchard and Perotti (2002), that fiscal variables react with lags to changes in macroeconomic conditions.

In Chap. 5 we undertake a robustness analysis by using a VAR model in which full interaction among variables is allowed and by focusing on the reaction of domestic variables to fiscal contractions. In this context the negative government spending shock is identified by imposing sign restrictions (see Uhlig 2005). The results obtained in the previous chapter are substantially confirmed, implying that fiscal consolidations implemented in these countries in the last decade have been rather costly in terms of output losses and worsening of labour market conditions. Another interesting finding shown in Chap. 5 concerns the size of government spending multipliers, well above one at selected horizons both in Greece and Italy.

Recent literature has raised the problem of fiscal foresight, i.e. the ability of households and entrepreneurs to anticipate future tax or government spending obligations. In the presence of fiscal foresight the information set of agents is larger than the econometrician’s one, posing the risk of uncorrect identification of fiscal shocks by using the structural VAR methodology, and hence producing unreliable estimations of fiscal multipliers (see e.g. Leeper et al. 2013).

In order to tackle this problem of “information deficiency” (Forni and Gambetti 2014) we enrich the VAR specification by including a set of variables useful to predict fiscal series and other macrovariables, such as the Economic Sentiment Indicator and stock market indexes.

Let us note that the finding that the government spending multiplier has a positive, Keynesian sign in some southern Euro-area economies notoriously affected by high public debt is an important result that contrasts with the results recently presented in Ilzetzki et al. (2013). The authors investigate the macroeconomic outcomes of fiscal expansions in a large set of OECD countries and give a notable contribution to this area of research by showing that the sign of fiscal multipliers is closely related to some relevant country macroeconomic factors. However, their conclusion that government spending multipliers are negative in countries affected by high public debt, in light of our results, seems to be not robust. Instead, the results of our research suggest that for a proper understanding of the dynamic effects of fiscal shocks on aggregate output and consumption, separation of countries on the basis of the nature of high indebtedness is crucial, i.e. it matters if high indebtedness characterizes the public or, alternatively, the private sector.

In Chap. 5 we pay particular attention to the reaction of private consumption to unexpected cuts in government spending. Clearly, the response of consumption to fiscal shocks is of great importance in determining the overall response of aggregate output. Indeed, as argued by Giavazzi and Pagano (1990) and Alesina and Ardagna (2010), in the presence of credible fiscal adjustments, expectations over future income may improve and cause an increase in current consumption. At a pinch, the increase in private consumption might offset the decrease in aggregate demand associated with the fiscal contraction, thus determining an overall expansionary effect in the economy.

While in Chaps. 4 and 5 the focus is mainly on the responses of aggregate output and consumption, in Chap. 7 we complement the analysis by characterizing the dynamic responses of unemployment and other labour market variables to fiscal austerity in a set of Euro-area Member States. Indeed, the study of the link between fiscal policy and the labor markets has received less attention with respect to investigations on the dynamic effects of fiscal shocks on output and aggregate demand. Nonetheless, the results presented in the chapter show that important insights may come from studying the effects exerted by changes in government spending on other indicators of real activity, such as labor market variables.

In this chapter, we use a panel VAR model and identify government spending shocks by imposing sign restrictions on the response of output on impact. The restrictions are consistent with the effects of fiscal policy predicted by a class of New Keynesian Models (see Canova and Pappa 2011). We also present calculations of the unemployment fiscal multipliers. Interesting findings are that unemployment multipliers are heterogeneous across countries and, moreover, the size is related to the specific government spending tool selected.

Fatas and Summers (2016) have recently maintained that fiscal austerity in Europe may have produced long-run negative effects on aggregate output. Nevertheless, according to the main findings of our research, the Euro Area offers a more articulated, and mixed, picture. For, we find the macroeconomic outcomes of fiscal shocks in countries like Greece and Italy might be consistent with the hypothesis of hysteretical effects on output of Keynesian sign but, conversely, for other countries like Ireland and Spain, although persistent effects of contractionary fiscal policies are detected, the response of output exhibits non-Keynesian sign. Thus, it does not seem possible to draw one single conclusion that fits well with all Euro-area countries.

1.4 Spillovers of German Fiscal Policies in the Euro Area

The results presented in Chap. 2 support the idea that fiscal stimuli at the Euro-area level may contribute to the macroeconomic stabilization of the Economic and Monetary Union. We believe that this finding represents a further argument in favor of the evolution of the Euro Area towards a fiscal union. Yet, it is apparent that it will require many years (or, less optimistically, some decades) to equip the currency area with a centralized fiscal capacity. This leads to the conclusion that currently, in practise, only Germany, the largest Euro-area economy, might implement a robust fiscal stimulus package.

In general, measuring the effects of government spending shocks in the national economy and the spillovers in foreign economies is important both for academic economists and policymakers. To this end, in Chap. 6 we measure fiscal policy in Germany and spillover effects in other Euro-area countries. We consider a sample of eleven Euro-area countries over the EMU period.

Two macroeconomic facts, among others, have characterized the German economy in the last decade: Its conspicuous current account surplus, with the current account-to-GDP ratio persistently above 6%, and the substantially government-balanced budget. Both facts have conspired in recent years for repeated calls to the German government for expansionary fiscal policies to be implemented. Indeed, an expansionary fiscal policy in Germany would make much macroeconomic sense,[2] given the fiscal space disposable in Germany, by contributing to cushion the severe recessions in southern countries which exhibit, symmetrically, deficit in their current account. It is also worth recalling that a threshold of 6% has been established by the European Commission (2012) for the surplus in the current account as an indicator of potential macroeconomic imbalances.

Abstracting from the rather limited success that these calls for expansionary fiscal policies have so far achieved, at this stage there is still little evidence on the macroeconomic effects of German fiscal shocks on other countries. Thus in Chap. 6 we try to fill this gap and undertake an empirical investigation on the spillover effects exerted by positive spending shocks in Germany on the other Euro-area countries. We model cross-country interdependences and dynamic linkages by adopting a panel VAR methodology. The identification strategy adopted to recover the domestic government spending shock consists in imposing a set of sign restrictions on impact to the responses of aggregate output and public deficit (see Canova and Pappa 2007).

The main findings shown in Chap. 6 are: (i) The domestic government spending multiplier is positive and large (around 1.5); (ii) spillover effects in the other Euro-area economies are significant, both economically and statistically. In particular, spillovers turn out to be sizeable in the case of countries with strong trade flows and of small countries characterized by less economic diversification. We also show that another important channel of transmissions of the effects of German fiscal policy is represented by the strength of financial flows.

On the whole, since Germany is a large open economy, with a high degree of trade and financial integration with the other Eurozone economies, these results are far from surprising.

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[2]Or, even better, a strong fiscal expansion in Germany would have made much sense in response to the second European recession of 2012–2013, after the financial crisis of 2008. In particular, a number of Euro-area countries, starting from 2011, faced a severe sovereign debt crisis, being forced as a consequence to implement large fiscal adjustments that, also in light of the results presented in this book, contributed to worsen the economic crisis.

Thus, our main conclusion is that not only can Germany do it but that, probably, it should do it. Of course, one might legitimately wonder if it is reasonable to expect Germany to shoulder (part) of the burden of the macroeconomic adjustment required in the Euro Area. In order to give a balanced response to this doubt, one should also consider that a very large current account surplus, like the one that has characterized German economy for many years, is an indicator of both high competitiveness of the export sector and of shortage of public and/or private investments. Therefore, by looking at this question from the point of view of the shortage of investments, it becomes more clear that the German authorities may risk underestimating the long-term problems that arise from neglecting the quality and quantity of public infrastructures, both material and non-material.

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