Monetary and fiscal integration in Europe
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Chapter 1

Introduction

Throughout the process of post-war European economic integration, the coordination of monetary policies and exchange rates has proven a recurring challenge. It has long been recognized that economic integration benefits from stable exchange rates. This makes it easier to compare prices across countries, which fosters competition. It also reduces the uncertainty surrounding foreign trade and investment and decreases the volatility of the domestic price level. However, successive attempts at the coordination of exchange rates proved vulnerable to speculative attacks and were eventually abandoned.¹

In the wake of German reunification and only months before the de facto collapse of the last attempt at exchange rate coordination, the European Monetary System, in 1992 the Maastricht Treaty was signed.² It established the European Union (EU) and laid the foundations for the introduction of the euro. Besides a commitment to monetary integration, the Treaty also introduced the now (in)famous thresholds of 3% of GDP for the government deficit and 60% of GDP for the government debt. These rules form the basis for the Stability and Growth Pact (SGP), which provides detailed procedures and guidelines on how to prevent and, if necessary, correct, so-called ‘ex-

¹ For a more elaborate discussion, see Hessel et al. (2017).
² Eichengreen and Frieden (1993) and Eijffinger and De Haan (2000) provide concise overviews of the economic and political factors behind the signing of the Treaty. This thesis focuses exclusively on the economic aspects of European integration.
cessive deficits’. This minimal, rule-based, form of fiscal coordination was deemed a necessary and, at least for the time being, sufficient condition for successful monetary integration. Notably, no major steps towards a political union or fiscal risk sharing were set. The Treaty even contained an explicit ‘no bail-out’ clause, which sought to make clear that member states would always remain responsible for their own debts.

During 1999-2007, the euro appeared a resounding success. Economic growth was strong across the board. Importantly, it was even stronger in the initially poorer Southern members, suggesting that the euro area economies were converging. Current account deficits in the South, as well surpluses in the North, were generally considered as benign and consistent with the narrative of convergence (see Blanchard and Giavazzi, 2002), even if there were some worries about diverging unit labor costs and an absence of structural reforms. In almost all member states, both government budget deficits and public debt levels had been falling. The European Central Bank (ECB) had delivered on its mandate, providing price stability to previously inflation-prone economies. The success of the euro was also reflected in the pace at which it attracted new members. After starting with 11 member states, by 2008 the eurozone had attracted four new members, with more on their way.

The Economic and Monetary Union (EMU) however hit a rough patch following the global financial crisis. What would become known as the euro crisis or European sovereign debt crisis arguably started in Greece, where in late 2009 the incoming government revealed that public finances had for years been in a much worse shape than reported by the statistical agency. This resulted in a bond market sell-off, and fears about a contagious sovereign default ultimately led to a bail-out of the Greek government, financed by the International Monetary Fund (IMF) and euro area member states. In most other member states, public finances had looked more or less fine before the financial crisis. Especially in some of the Southern European member states, total foreign borrowing had however been substantial. While these capital inflows had contributed to booming domestic demand, they had contributed little to growth of the export sector. The growing
discrepancy between the external debt level and the capacity to repay eventually put the solvency of the recipient regions under pressure (see e.g. Giavazzi and Spaventa, 2010).

After international capital flows came to a halt, domestic demand in the deficit countries collapsed, with dire consequences for government revenue. In several cases bank bail-outs further added to the fiscal misery. The interconnectedness of banks and governments triggered what became known as a ‘doom loop’ or deadly embrace, in which funding problems for banks and governments reinforced each other (see e.g. Acharya et al., 2012). Multiple euro area governments also faced another vicious loop of sorts: increasing interest rate expenditures triggered questions about their solvency, which in turn pushed up interest rates further. This caused what De Grauwe (2012) referred to as self-fulfilling debt crises: governments that would have been solvent at low interest rates ran into trouble as yields increased. Substantial fiscal consolidation measures aimed at restoring market confidence in many cases failed to do so, while adding to the depth of the recession.

While a myriad of policy interventions, ranging from a reform of the EU’s fiscal and macro-economic rules to the creation (in various iterations) of a European emergency fund, kept the eurozone running, they failed to turn the economic tide. By mid-2012, the euro crisis reached its nadir, with the future of the entire European project appearing at risk. Markets not only questioned the solvency of an increasing number of euro area governments, they also started to price in euro exits (De Santis, 2015, Kriwoluzky et al., 2015). This resulted in redenomination risk premia driving up further the sovereign yields of the most vulnerable countries and eventually

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3 Lane (2013) documents how cross-border private capital flows in the euro area started to dry up in the final quarter of 2008, and finds that this was associated with large-scale expenditure reduction and plummeting investment rates in the deficit countries. Gilbert and Hessel (2012, 2013) provide a detailed account of the effects of the 2009 recession on euro area public finances and the relation with pre-crisis imbalances.

4 Blanchard and Leigh (2013) document the strong relation between fiscal consolidation and lower than expected growth in Europe over 2011-13, suggesting that fiscal multipliers were larger than expected. Eyraud and Weber (2013) show that, when multipliers are large and initial debts substantial, consolidation will push up the debt-to-GDP ratio in the short term. As noted by Mody (2016), this is exactly what happened in most euro area member states.
prompted an unheard of intervention by the president of the ECB, Mario Draghi. He pledged that, within its mandate, the ECB would do ‘whatever it takes’ (“and believe me, it will be enough”) to save the euro (Draghi, 2012b). This was followed by the formal announcement of the Outright Monetary Transactions (OMT) program, a potentially unlimited bond buying program aimed at eliminating redenomination risk and restoring the monetary transmission mechanism. The OMT announcement contributed to falling sovereign spreads and bank funding costs, finally opening the door to an economic recovery. Yet, in most member states, it took another five to six years before unemployment started approaching pre-crisis levels, and it might take many more before political resentment against the euro will have muted.

To improve the functioning of EMU and to prevent future crises of this scale, it is of great importance to understand what went wrong. Yet, the crisis has many fathers, which has led observers to choose to highlight different elements (or, in the words of Wyplosz (2015), “focus on their pet explanations”). To some, the main culprit of the euro crisis is fiscal profligacy. The eurozone’s fiscal rules have failed, and Southern Europe simply spent too much prior to the crisis. A second narrative focuses on the divergence of (cost) competitiveness positions between member states. As noted by Draghi (2012a), “since the introduction of the euro, unit labor costs have increased by 28 percent in deficit countries, 2.5 times as much as in surplus countries”. In this view, excessive wage growth in the deficit countries has hampered their competitiveness, hurting exports and contributing to ultimately unsustainable current account deficits. Storm and Naastepad (2016) refer to both narratives as “inaccurate and wrong”, and instead point to a third explanation: easy financing conditions contributing to unsustainable

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5 Szczerbowicz (2015) documents the positive announcement effects of the OMT on both sovereign spreads and covered bank bonds. Altavilla et al. (2016) present a simulation analysis suggesting that the positive announcement effects of the OMT had important real effects. Yet, despite being widely considered a success – Draghi himself referred to the OMT as “probably the most successful monetary policy measure undertaken in recent times” during a 2013 press conference – relatively little is known about the longer-term effects of the OMT on the stability of the euro area sovereign bond market, a topic we return to in chapter 5.
private credit growth. In this view, the root cause of the crisis lies in unsustainable real estate and consumption booms financed by bank debt. This diagnosis is shared by De Grauwe (2010), who notes that the increase in public debt was mostly a consequence, not a cause, of the crisis. Finally, as famously pointed out by De Grauwe in later work, neither public nor external debt levels in the eurozone’s crisis countries were truly excessive when compared to developed economies with their own currency, like the United Kingdom. In this view, the euro crisis was (also) the consequence of the lack of national central bank functioning as ‘lender of last resort’, guarding member states from speculative market forces (De Grauwe, 2012, 2013). This argument has been strongly disputed by, amongst others, Cochrane (2011), who ridiculed Europeans leaders who “keep looking for the Big Announcement that will soothe markets into rolling over another few hundred billion euros of debt”, noting that “the problem is reality, not psychology.”

As highlighted by Martin and Philippon (2017), the persistent disagreement about the best way to interpret the euro crisis has long complicated the policy response to the crisis. To this day, it also fuels the debate about the best way to future-proof the Eurozone. It is against this backdrop that this thesis aims to shed more light on the fundamental causes of the euro crisis and the effects of the arguably main monetary policy measure that has been undertaken to contain it, the ECB’s OMT program. To do so, in the first part of this thesis, we turn back the clock to 1996, when in anticipation of the introduction of the euro real interest rates in Southern Europe started to fall sharply. Over 1996-1999, average one-year real government bond yields in Ireland, Italy, Portugal and Spain fell from almost 5% to close to 0%. This induced major capital flows from the North to the South. In chapter 2, we investigate why these did not benefit the tradable sector, and thereby caused a divergence between external debt and capacity to repay. Whereas EMU lacked any kind of rules to limit the private capital flows that are central to chapter 2, fiscal policy in EMU has always been bound by the SGP. Chapters 3 and 4 delve into the incentives generated by this set of rules. Did they lead to more optimistic fiscal forecasts? And, did the corrective part of the
rules induce actual fiscal tightening? Finally, chapter 5 shifts the focus to the euro crisis itself. Did surging sovereign yields in various member states reflect contagion, and if so, has the ECB’s announcement of the OMT program successfully stopped this?

1.1 Outline

Chapter 2 provides a theoretical framework explaining why capital inflows in Southern Europe were mainly allocated to the less productive nontradable sector. We construct a tractable two-sector, two-region general equilibrium model of a monetary union to simulate the consequences of the sharp, permanent fall in the real interest rate experienced by Southern Europe in the run-up to the introduction of the euro. We show the falling interest rate to spark a regional demand boom, increasing demand for both tradable and nontradable goods and pushing up wages. Whereas the nontradable sector is able to increase prices and output, the tradable sector is less able to do so due to foreign competition. Therefore, in real terms, capital and labor are cheaper in the nontradable sector and are (re)allocated to this sector. Southern demand for tradables and upward pressure on the EMU-wide interest rate also lead to wage moderation in the North, as well as a shift of resources to the tradable sector. As such, cost competitiveness and net external asset positions within the monetary union diverge. The model makes clear that, if the interest rate at which the South can borrow does not react to the increasing external debt, this divergence will not stop. We confirm the key model predictions in an empirical analysis. Using a reduced-form panel-BVAR for 9 euro area member states, we show that member states which experienced negative interest rate shocks relative to the euro area average saw a rising price level (relative to the union average), a deteriorating current account balance and faster growth of the nontradable sector. Tradable sector growth was not, or even mildly negatively, affected, by those same interest rate shocks.

Chapter 3 investigates the unintended consequences of the SGP. It high-
lights that the SGP, due to its partly forward-looking nature, provides euro area governments with an incentive to provide overoptimistic forecasts. This incentive is most evident for governments that expect their deficit to exceed 3% of GDP. Those governments risk becoming subject to the enhanced scrutiny of the Excessive Deficit Procedure (EDP) – a step-by-step procedure in which governments are required to reduce their budget deficit – and in case of non-compliance ultimately risk being fined. The European Commission (EC), in constructing the forecasts used to judge compliance with the SGP, relies to an important extent on information supplied by member states (Von Hagen, 2010). Because of this informational dependency and the incentives faced by national governments, we hypothesize that the EC’s fiscal forecasts are biased when member states expect the fiscal rules to bind. To test this, we apply a novel identification strategy. The budget deficit expected by the national government is unobserved and cannot be identified based on fiscal forecasts, which would already contain any potential bias. We therefore resort to realization data. We start from the notion that the government, based on all available public and private information, should itself always be able to construct a neutral forecast. To recoup this forecast, we purge the realized budget balance from any unexpected economic shocks that occurred after the forecasting date by means of instrumental variable techniques. To do so efficiently, we exploit the binary nature of our variable of interest - whether or not fiscal rules are expected to bind. We show that, all else equal, fiscal forecasts for members of the euro area are significantly more optimistic when the government expects the deficit to exceed 3% of GDP. For non-euro area countries, which under the SGP do not face the risk of fines, such an effect cannot be established. We furthermore offer suggestive evidence that the presence of independent fiscal councils at the national level helps to attenuate the bias induced by the 3% threshold.

Chapter 4 focuses on the overall effectiveness of the EDP, investigating how it affects both projected and actual fiscal adjustment. We construct a real-time database of all country-specific EDP recommendations since the
introduction of the euro, tracking all revisions and changes in these recommendations. We then estimate real-time fiscal reaction functions for a panel of EMU member states over the period 1999-2017. We relate changes in the structural budget balance to the usual determinants of fiscal policy found in the literature, and include the EDP recommendations applicable at a specific forecast vintage as an additional explanatory variable to obtain an indication of their impact on fiscal policy. This approach does come with a challenge: countries with EDP recommendations almost by definition have budget deficits exceeding 3% of GDP, and high deficits may be correlated with other factors inducing a change in fiscal behavior. We control for such factors in three ways. First, we allow the effect of recommendations to be different for countries in financial support programs. Countries receiving financial support may be subject to a more stringent fiscal governance regime, and generally went through hard economic times. Second, we control for interest rate spreads, which have been found to correlate with being in an EDP. Third, to the extent that deficits above 3% might solicit a change in fiscal behavior for any remaining reasons, we allow the shape of the fiscal reaction function to vary with the level of the deficit. We find that EDP recommendations significantly affect both planned and actual fiscal policy. On average, a 1% of GDP larger EDP recommendation leads to close to 1% of GDP of additional fiscal consolidation plans, and around 0.8% of GDP of actual consolidation. For countries in financial support programs we find that, while they did implement substantial consolidation measures, required and delivered consolidation efforts are less connected. Overall, our results suggest that EDP recommendations have substantially shaped fiscal policies in the euro area, especially in the years 2010-2014, when EDP recommendations were most frequent.

Chapter 5 focuses on the acute euro crisis, which was characterized by steeply rising sovereign risk premia in an increasing number of member states. We study the cross-border transmission of sovereign risk shocks before and after the introduction of the ECB’s OMT program, focusing on spillovers from Italy and Spain. To overcome the identification challenge
associated with separating country-specific shocks from common shocks, we first document the response of Italian and Spanish sovereign yields to domestic events, in a tight window around their first publication. Recognizing that this only yields an approximation of the ‘true’ shocks, we use the narratively identified shocks as external instruments for the daily change in Italian and Spanish spreads in bilateral local projections - instrumental variable (LP-IV) regressions. This method allows us to combine some of the main advantages of the event-study and structural vector autoregression models typically used to study contagion: we retain the transparent identification of event studies, while we are also able to trace out the dynamics of sovereign risk spillovers and to formally test whether they differ before and after the OMT. Prior to the announcement of the OMT, we document significant sovereign risk spillovers between Spain and Italy, and from (in particular) Spain to the rest of the euro area. Peak effects are generally reached after 2-3 days. We also find spillovers to the financial sector and global financial markets. Post-OMT, some spillovers among the most vulnerable countries remain, but in a significantly more muted form. Spillovers from Spain and Italy to the rest of the euro area disappear or become marginally negative. Likewise, global financial markets no longer respond much to shocks to Italian or Spanish spreads. These findings are robust to using our full, 2009-2016, sample, as well as to using shorter intervals around the announcement of the OMT. They indicate that the OMT has largely broken the negative feedback loop between member states.

Finally, chapter 6 summarizes the main findings of this thesis and discusses potential ways forward for EMU.