

“Macro-Financial Stability and the Euro”

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Abstract

The goal of this paper is to examine the implications of monetary union for macro-financial stabilisation policies at national and area-wide levels. The boom-bust-crisis-recovery cycle that the euro area has experienced revealed the costs of national and international institutional frameworks that proved inadequate to manage the policy challenges of this period. After the crisis, much has been done to remedy these policy shortfalls, even if the reform agenda is not complete. National and area-wide policymakers must make use of the improved institutional architecture to do a better job in terms of ex-ante risk management and ex-post crisis management.

1. Introduction

This joint conference with the International Monetary Fund and the IMF Economic Review is a highlight in the calendar of events marking the 75th anniversary of the Central Bank of Ireland.¹ I am delighted that the conference features so many that have contributed to the intellectual debate about monetary union in Europe, while also featuring the latest original research on the different dimensions of this debate.

At a personal level, I welcome the opportunity in this keynote address to offer some reflections on twenty years of the euro. European monetary union has been a dominant factor in my professional career. As a student and early-stage academic, I vividly recall the debates in the 1990s as to the potential benefits and costs of a single currency for Europe, while the launch of the euro and its impact on the European and global economies has stimulated much of my own research over the last two decades.² In recent years, my roles as governor of the Central Bank of Ireland and a member of the governing council of the European Central Bank (ECB) has allowed me to gain additional insights into the workings of the monetary union.

Macro-financial policy makers have drawn two primary lessons from the experience of the first twenty years of the euro. First, it is imperative to address emerging macro-financial imbalances in a pre-emptive manner, in order to limit the risk of triggering a country-specific or area-wide crisis. Second, if a crisis episode does

¹ Honohan (2018) provides an account of our history.

² See Barry (2017) for an account of the 1990s debate in Ireland on the pros and cons of the single currency. See also Lane (1997, 1998).

occur, the euro area needs a better crisis management toolbox, compared to the minimalist framework that was in place at the onset of the 2008-2012 crisis. In what follows, I address these two dimensions of macro-financial stabilisation: pre-emptive counter-cyclical policies and crisis management policies.

In addressing these issues, I do not cover other important aspects of the monetary union. Amongst other omissions, I do not review the impact of the single currency on cross-border financial flows, international trade or the political economy of the European Union.³ Nor do I review the performance of the ECB in relation to its primary mandate of maintaining price stability.⁴ It is also outside the scope of this contribution to address the related topics of promoting income convergence among EU member countries and regions or devising efficient mechanisms to fund common public goods. Finally, I do not seek to provide a guide to the scholarly literature on the economics of the euro area.⁵

The plan for the rest of this address is as follows. In Section 2, I discuss the forces shaping asymmetric macroeconomic performance during the initial years of the euro, with a particular focus on the evolution of external imbalances. I discuss some counterfactuals in Section 3 in order to provide comparisons to a scenario in which better national policymaking might have mitigated cyclical risks during this period and a “no monetary union” alternative benchmark. I turn to the 2007-2012 period in Section 4, during which the euro area first had to deal with the global financial crisis and then the doom loop area-specific crisis during 2010-2012. I turn to the institutional reform agenda in Section 5, before offering some conclusions in Section 6.

2. Macro-Financial Stability and External Imbalances During 1999-2008

³ See Lane (2006, 2010a), Lane and Milesi-Ferretti (2008, 2017) and Galstyan and Lane (2013) on the impact of the euro on some dimensions of international financial integration.

⁴ See Constancio (2018a) for an account of the ECB’s monetary policy since its inception.

⁵ Overviews from different perspectives are provided by Lane (2006, 2012), Shambaugh (2012), O’Rourke and Taylor (2013), Sandbu (2015), Brunnermeier et al (2016) and Mody (2018). Case studies of individual countries are an important element in this literature: on Ireland, see Honohan (2010), Lane (2011) and Whelan (2014a); on Cyprus, see Michaelides (2014); on Greece, see Gourinchas et al (2017); on Portugal, see Reis (2013) and Blanchard and Portugal (2017); on Spain, see Santos (2014, 2017).

There were several structural changes in the international economy and international financial system from the mid-1990s onwards, so that the establishment of the monetary union cannot be viewed as the sole (or even primary) factor determining macro-financial outcomes in the euro area during the first decade of the single currency.

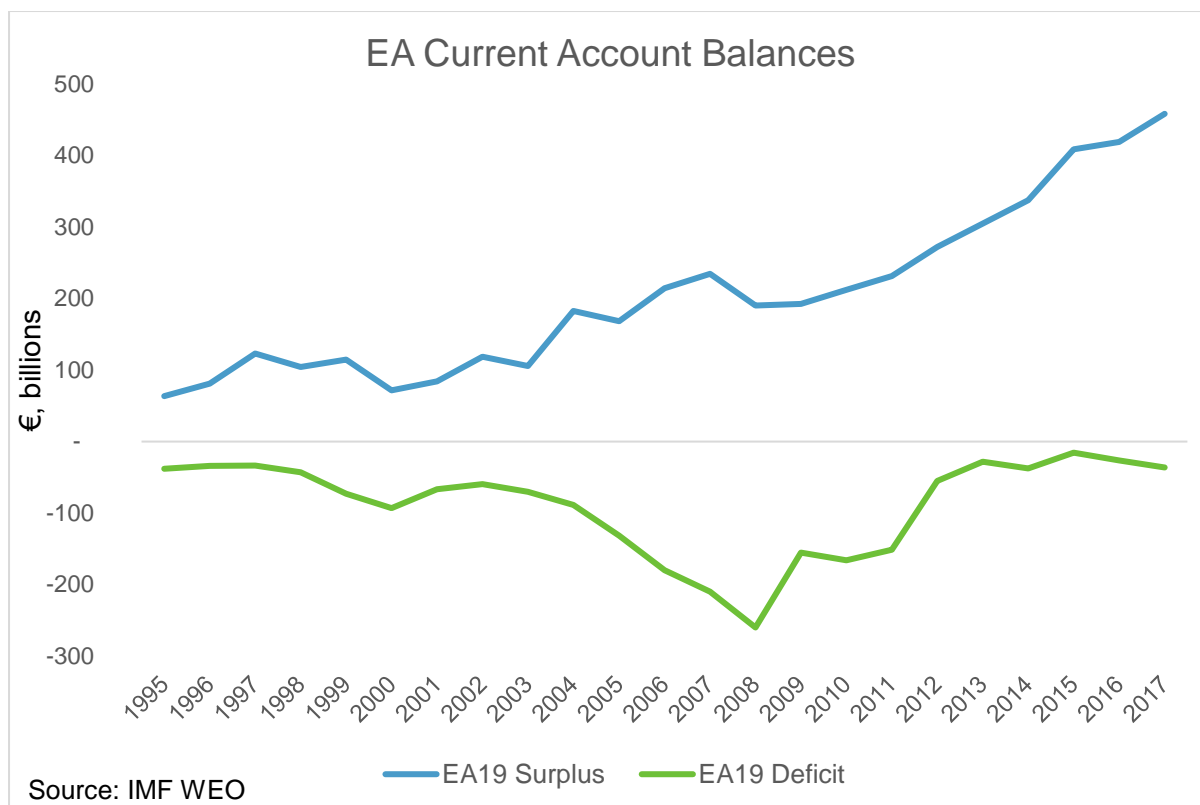
At a basic level, the twin forces of technological change and globalisation have affected the member countries in a differentiated manner. For instance, the increasing share of emerging Asia (especially China) in output and international trade was associated with a reconfiguration of comparative advantage, with asymmetric effects across individual European economies (Chen et al 2013). Some member countries (including Germany) gained from the rising international demand for capital goods; other countries (Portugal, Greece, Italy) faced increasing competition in industries such as textiles and footwear. The integration of Central and Eastern Europe into European supply chains was a further source of structural change, again with asymmetric effects across member countries.

It is in this global context that the impact of the euro on the economies of the member countries should be interpreted. The production structures of the member countries are differentially exposed to global factors, both through direct trade linkages and indirect market structure effects. Furthermore, the variation in country size and global trade linkages across the member countries also mean that there are intrinsic differences in terms of the impact of global factors and international currency movements on the individual member countries (Honohan and Lane 2003, Lane 2006, Lane and Stracca 2018).

An important type of divergence across the member countries was the widening of external imbalances.⁶ Figure 1 shows the distribution of current account imbalances in the euro area across the groups of surplus and deficit member countries in each year. In relation to the deficit group, Figure 1 shows an entry effect in the late 1990s that was followed by a stabilisation phase during 2000-2003. There was a sharp increase in the aggregate imbalances during 2004-2008. Over the last decade, the aggregate across deficit countries has gradually converged to close to zero, while the aggregate across surplus countries has climbed.

Figure 1. Current Account Imbalances in the Euro Area.

⁶ I focus on “flow” imbalances. See Lane and Milesi-Ferretti (2018) on the evolution of net international investment positions.



Note: In each year, sum of surpluses and sum of deficits calculated for the group of countries that are now members of the euro area. The graph is very similar if we restrict the group to the early-stage members of the euro area.

While there was certainly an entry effect during 1997-2001 that boosted the euro periphery as a result of the convergence of interest rates across the member countries (further augmented by the sizeable depreciation of the euro against the dollar during 1999-2001), this process had largely played out by 2001-2002, with the international slowdown during that period marking the conclusion of that phase. This initial phase could be interpreted in a benign manner to the extent that the qualitative pattern in net capital flows was in line with expected convergence dynamics (Blanchard and Giavazzi 2002).

From 2003 onwards, the expansion in imbalances was driven by an international credit boom that was inadequately managed by national macro-financial policymakers. The international credit environment entered a sustained loosening phase due to a combination of a savings glut in fast-growing emerging economies, low policy rates set by major central banks, financial innovations (asset-backed securitisations, the expansion of shadow banking) which was sustained by excessively-relaxed supervisory attitudes, over-confidence in the “Great

Moderation” hypothesis and a widespread risk-on attitude among lenders and borrowers.⁷

Given the scale of the international credit boom and the expansion in external imbalances, the complacency among many national policymakers during the first decade of the euro was surprising. After all, memories of the major financial crises that took place in the 1990s (the Scandinavian banking crisis; the Mexican crisis; the East Asian crisis; and the Russian crisis) should still have been fresh in the memories of policy officials. Moreover, the lack of an independent national exchange rate and the expanded scope for cross-border borrowing in a monetary union reinforced the importance of adopting a more prudential approach to credit regulation, banking supervision and fiscal policy (Lane 1997, 1998, 2006).

The nature of European imbalances also shifted during the 2003-2007 period. While the expansion in current account imbalances that was observed until 2001 could be reasonably interpreted as a corollary to intra-European convergence and the euro entry effect, the significant increase in dispersion during 2003-2008 was significantly procyclical in nature, with those countries projected to grow more quickly running larger deficits and those countries projected to grow more slowly running larger surpluses (Lane and Pels 2012). More broadly, the magnitudes of imbalances during this period significantly exceeded the values associated with historical patterns (Lane and Milesi-Ferretti 2012, 2015). These imbalances largely took the form of net debt flows, with a strong correlation with domestic credit growth (Lane and McQuade 2014).⁸

The widening of current account imbalances was a general phenomenon across advanced economies, rather than being specific to the euro area. In particular, Iceland and many Central and Eastern European economies also saw a sharp rise in current account deficits during this phase. Moreover, it is not obvious that the single currency amplified the scale of imbalances: a study of the relation between output growth and the current account for thirty-four OECD economies over 1984-2013 does not indicate that euro membership increased the cyclicity of the current account (Lane 2016). The same study does not find an increase in the cyclicity of the real exchange rate for members of the euro area, with an increase in the cyclicity of the domestic inflation rate overwhelmed by the exogenous factors driving the external value of the euro.

⁷ See also Lane (2006, 2012, 2013a, 2013b).

⁸ Of course, the scale of net imbalances was not a sufficient indicator for the distribution of cross-border risk exposures, with gross flows far exceeding net flows.

Still, the expansion in imbalances during 2003-2008 was especially troubling, given that it took place at the same time that there was an adverse shift in the underlying growth prospects for the euro periphery. Rapid growth over the previous decade meant that the convergence dynamic was inevitably weaker than before; the sharp appreciation of the euro against the dollar over 2002-2007 was an external blow to the competitiveness of many European firms and reinforced the trend shift towards imports from emerging Asia; the new member countries from Central and Eastern Europe were tougher competitors for the location of manufacturing activities; rising commodity prices represented an income transfer from commodity importers to commodity exporters; and demographic factors constrained aggregate potential growth at the European level. Furthermore, it is also plausible that the easy international credit conditions delayed reform efforts in some member countries (Fernandez-Villaverde et al 2013). In the aggregate, the expanding current account deficits in the periphery funded an expansion in the nontraded sector rather than boosting investment in the tradables sector, further aggravating the deterioration in growth prospects (Giavazzi and Spaventa 2011, Benigno and Fornaro 2014).⁹

The bust that followed the end of the international credit boom in 2008 hit hard those economies that had developed excessively-large current account deficits. Over 2009-2012, the cross-country variation in the declines in output and domestic spending (with little relief from real exchange rate adjustment) was strongly correlated with the scale of the gap in 2005-2008 between the realised current account positions and the current account positions that would fit a fundamentals-driven model (estimated over 1969-2008 for a panel of sixty four countries) (Lane and Milesi-Ferretti 2012, 2015). However, it is noteworthy that membership of the euro area did not amplify the severity of the adjustment during this period: while high-deficit member countries experienced less by way of real exchange rate adjustment compared to other high-deficit advanced economies, other features of the monetary union (such as access to cross-border eurosystem liquidity and the responsiveness of the common monetary policy to area-wide conditions) cushioned the impact. Indeed, those Central and Eastern European economies that were outside the euro area but pegged to the euro underwent sharper adjustment (Gros and Alcidi 2013, Lane 2016).

The limited role for real exchange rates in the external adjustment process for advanced economies during this period suggests that the importance of the exchange rate regime as a determinant of macroeconomic outcomes might sometimes be overstated. This is consistent with the received wisdom that it is difficult to find significant differences in average macroeconomic outcomes across different exchange rate regimes (Mussa 1990). One reason is that floating exchange rates are subject to non-fundamental shocks that may push an economy away from its

⁹ The increased elasticity of net migration flows to domestic cyclical conditions further amplified the impact of local demand shocks (Howard 2018).

equilibrium (Engel 2011, Berka et al 2018). A second is that currency movements can have a nuanced impact, with wealth effects from terms of trade movements possibly operating in the opposite direction to the competitiveness channel. For instance, Lane and Stracca (2018) find that an appreciation in the external value of the euro raises disposable income and consumption through a positive terms of trade impact, even if the export sector shrinks.

3. Counterfactual Scenarios

A primary lesson from this boom-bust cycle that the costs of tolerating the rise of persistently large imbalances are extremely high, especially for high-deficit countries (Lane 2013c).

During a global credit boom period, what instruments are available to policymakers in an individual country to mitigate macro-financial risks? For members of the euro area, the absence of a national currency and national interest rate policy increases the importance of using other policy instruments.

Most directly, a credit boom can be addressed through vigorous macro-prudential regulation of the banking system. A wide range of policies can be implemented: loan-to-value limits; debt service to income limits; sectoral concentration limits in lending; high capital asset ratios; counter-cyclical capital buffers; and limits on the use of short-term funding. The very limited use of these tools in the mid-2000s meant that regulatory policies did too little to offset the scale of credit expansion.

A common objection to the use of macro-prudential policies is that the effectiveness of these tools is weakened through regulatory arbitrage with curbs on domestic lending leading to growth in cross-border lending. However, even if some substitution towards cross-border lending might have resulted, the balance of risks would have been shifted, since the credit risks would be on the books of foreign-based banks rather than domestic banks.

In addition, fiscal policy can be deployed at both microeconomic and macroeconomic levels.¹⁰ At a microeconomic level, a property boom can be

¹⁰ In this section, I confine my attention to national fiscal instruments.

mitigated through reforms that reduce the tax incentives offered to developers and households. More generally, time-varying tax rates on consumption and investment can replicate some properties of national-level exchange rate and interest rate policies by altering the intertemporal terms of trade (Farhi et al 2013). At a macroeconomic level, at a minimum, a government under such conditions should seek to maintain acyclically-neutral budget, with a countercyclical budget balance even more desirable.

While Ireland achieved small headline budget surpluses during the boom period, the underlying budget balance was much less healthy, given the reliance on construction-intensive tax revenues. The scale of the boom was such that significantly more positive budget surpluses were warranted, with the deterioration in fiscal discipline towards the end of the boom period especially unfortunate. In 2007, the fiscal surplus in Ireland was just 0.2 percent of GDP, whereas it was 5.1 percent in Finland, 5 percent in Denmark, 3.3 percent in Sweden and 2 percent in Spain.

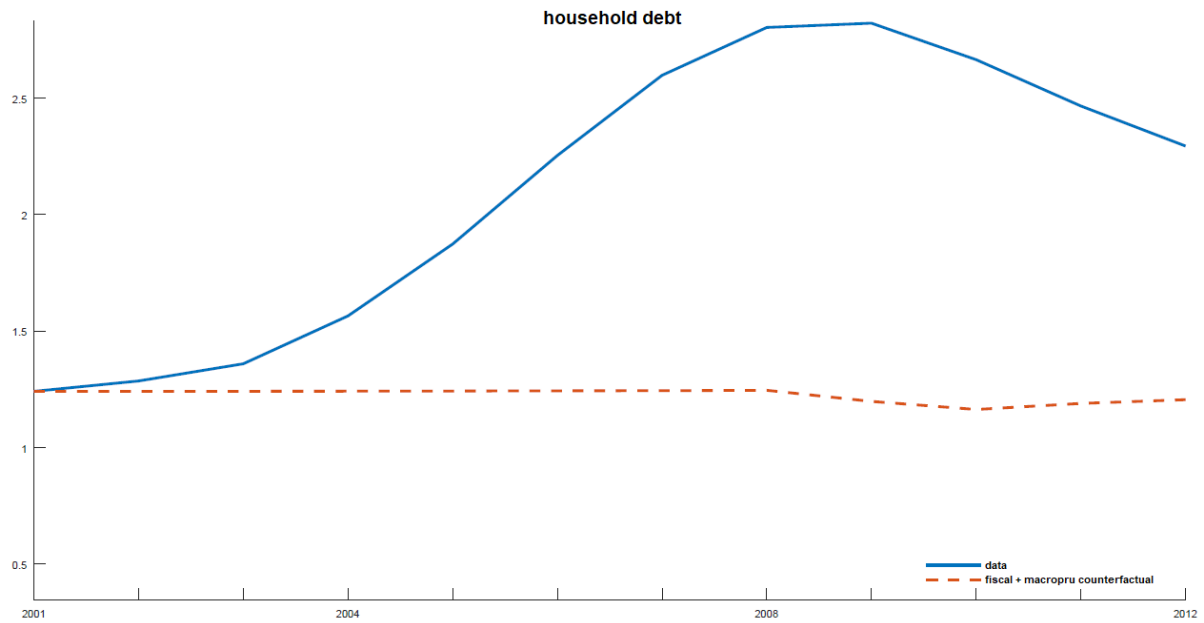
Running large budget surpluses is politically difficult, given the pressures to meet spending demands and cut taxes. In terms of safeguarding the public balance sheet, it may be more politically feasible to establish a fiscal reserve fund in recognition of the contingent nature of the windfall revenues during a credit boom and the fiscal risks associated with banking crises. While Ireland did set up a reserve fund (the National Pensions Reserve Fund), its mandate was long-term in nature rather than cyclical and its equity-dominated investment strategy was not appropriate in managing crisis conditions.¹¹ Rather, an additional cyclically-focused fiscal reserve fund that held a liquid-assets portfolio should have been established (Lane 1998).

To illustrate a counterfactual scenario in which national macroprudential and fiscal policies were deployed to lean against the wind, Figures 2 and 3 show the evolution of household credit and output (relative to the euro area aggregate) in Ireland in a simulation of the model proposed by Martin and Philippon (2017). Figures 2 and 3 show that the avoidance of the extraordinary build up in household debt (plus a more conservative fiscal feedback rule) would have led to a shallower boom-bust cycle and a faster recovery. In particular, through the preventive use of ex-ante macroprudential policies during the boom, the containment of sovereign spreads during the crisis and the avoidance of fiscal recapitalisation of the banking sector

¹¹ Ireland also set up a household scheme (Special Savings Investment Accounts - SSIA) to boost the household savings rate during a period of low interest rates. However, this was for a fixed time duration (2001-2002 to 2006-2007), rather than tied to the cyclical state of the economy.

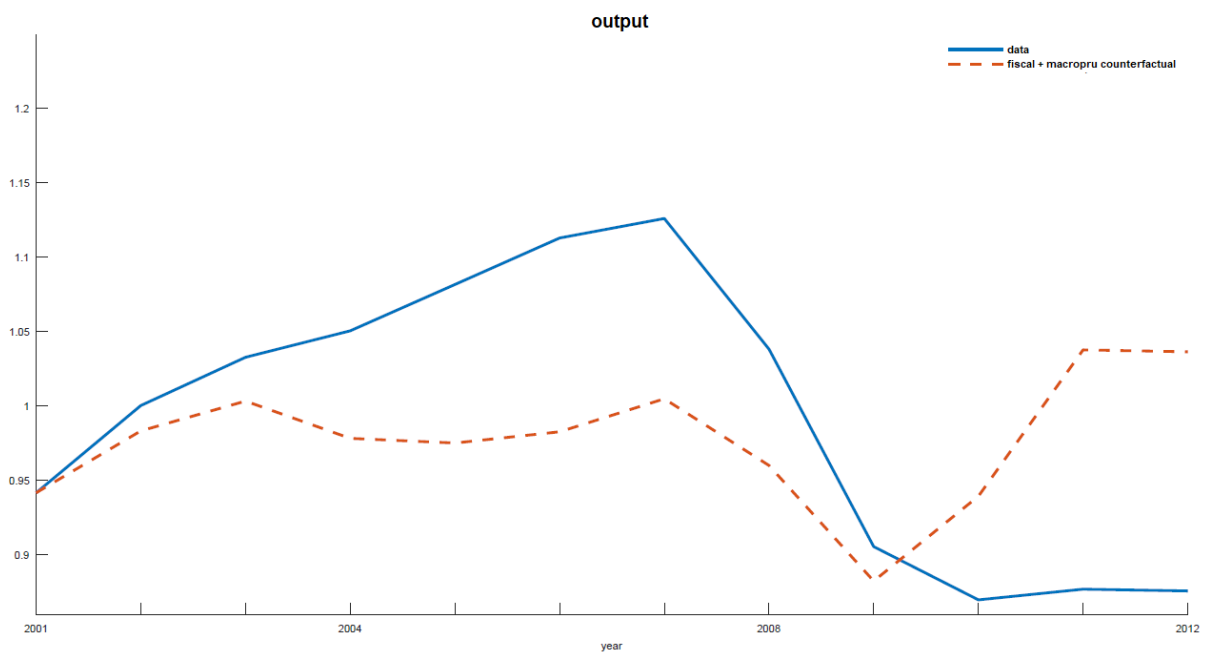
would have made it more possible to run an expansionary, counter-cyclical fiscal policy during the downturn.

Figure 2. Counterfactual Evolution of Household Debt in Ireland



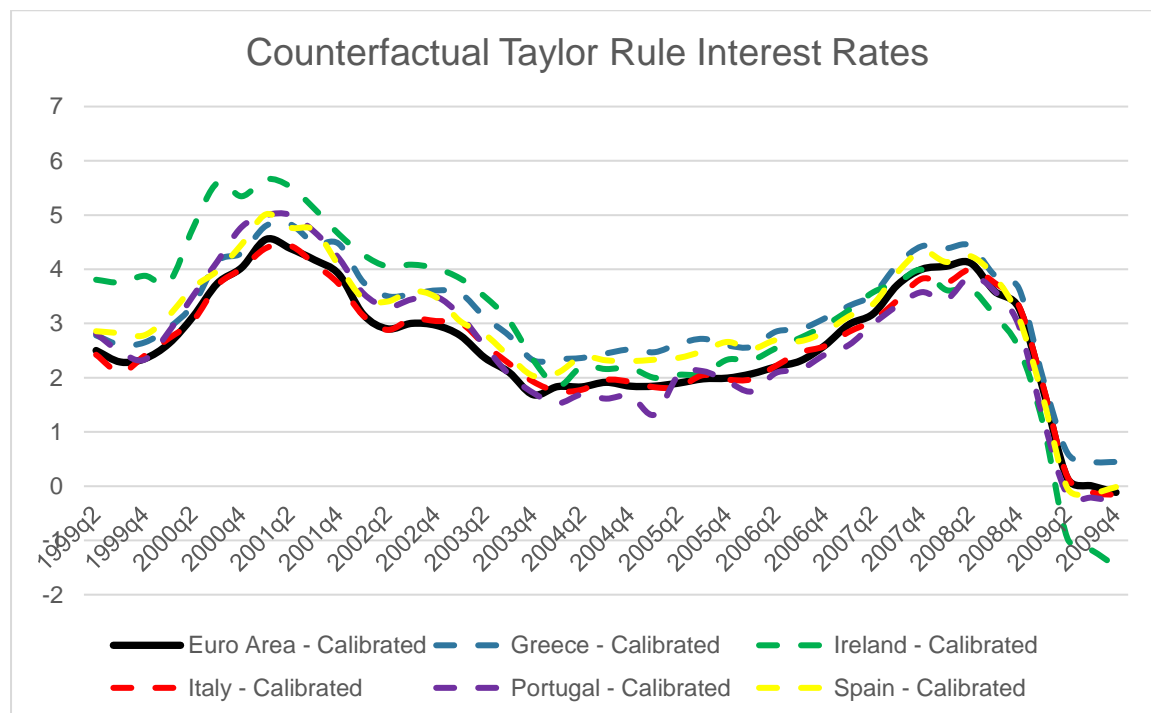
Note: Simulation of model proposed by Martin and Philippon (2017).

Figure 3. Counterfactual Evolution of Output in Ireland



Note: Simulation of model proposed by Martin and Philippon (2017).

Figure 4. National Interest Rates under Taylor Rules



Note: Calibrated Taylor rules: $i_t = (1 - \rho)(i^*) + \rho i_{t-1}$, where $i^* = \phi_r r_t + \phi_\pi (E(\pi_{t+1}) - \pi^*) + \phi_y (y_t - y^n)$. We set $\rho = 0.8$, $\phi_r = 1$, $\phi_\pi = 1.5$, and $\phi_y = 0.5$. We also assume perfect foresight, so that $E(\pi_{t+1}) = \pi_{t+1}$, while the target rate of inflation is considered to be constant at $\pi^* = 2$.

An important alternative benchmark is to assess likely macroeconomic outcomes during this period had the monetary union not been established.¹² To this end, some researchers have run Taylor-type rules to capture plausible paths for national interest rates in this alternative world (Ahrend et al 2008, Taylor 2008). Figure 4 shows the hypothetical national interest rates for selected member countries over 1999-2009. By and large, the differentials vis-à-vis the euro area interest rate are relatively minor, which reflects the fact that there was relatively little dispersion in

¹² Of course, this counterfactual scenario is fundamentally different to the question of whether any member country might gain by withdrawing from the monetary union. I do not dwell on this scenario, which has been extensively analysed (see, amongst many others, Eichengreen 2010).

national inflation rates during the mid-2000s and estimated real time output gaps were adjudicated to be quite small.¹³

Even if higher interest rates had been imposed during the boom period, the effectiveness of interest rate policy in sharply limiting a credit boom is open to question (Lane 2016). First, given that central banks choose to vary interest rates within a fairly narrow band (since small interest rate movements have powerful effects on the real economy), even a moderately-higher path for interest rates may not sufficiently deter investors that expect sizeable capital gains in the property market. Second, a positive interest rate differential vis-à-vis other economies can induce domestic investors to borrow in foreign currencies, just as happened in Iceland and several countries in Central and Eastern Europe. Third, the currency appreciation associated with a higher path for interest rates could have encouraged extra borrowing by risk-taking entrepreneurs since the capacity to increase leverage in foreign currencies through loans collateralised against domestic assets would have been enhanced (Bruno and Shin 2015).

The risks embedded in the 2005-2006 European macro-financial configuration were clear, even if the nature and timing of a future disruptive shock was unknown (Lane 2006, Lane and Milesi-Ferretti 2007). As it turned out, the trigger for the end of the international credit boom originated in the United States, with a sustained tightening in funding markets from August 2007 onwards and an intensification in the financial crisis between the near-collapse of Bear Stearns in March 2008 and the collapse of Lehman Brothers in September 2008.

4. The Euro and the Crises of 2007-2012

During 2007-2009, the availability of eurosystem liquidity provided an important buffer during the global financial crisis: banks in the euro area could replace private funding with central bank funding. For banks with insufficient eurosystem-eligible collateral, national central banks could also provide emergency liquidity assistance (ELA), within the framework set out by the eurosystem. Even dollar funding was available through the eurosystem, thanks to the currency swap arrangements

¹³ The largest positive differential is for Ireland during 1999-2000. In this period, Ireland experienced a burst of relatively high domestic inflation that was driven by a mix of the disproportionate impact of the large euro-dollar depreciation during this period, the inadequate scale of the 1998 Irish pound revaluation prior to joining the euro and the strong momentum in Irish wage growth during this phase (Honohan and Lane 2003). However, Irish inflation subsided by the mid-2000s.

between the ECB and the Federal Reserve Board. Since individual countries had different funding shortages, these liquidity policies had asymmetric outcomes across the individual member countries, as captured by the intra-system Target2 imbalances. At this level, membership of a common currency area provided an important bulwark against the global financial shock by allowing cross-border liquidity flows to replace cross-border private flows (Fagan and McNelis 2014, Whelan 2014b). By way of contrast, such automatic cross-border liquidity flows were not available to other European countries that retained their own currencies but had significant foreign currency liabilities.

At the same time, the application of eurosystem liquidity policies involves some discretionary judgement calls. In particular, there are strong feedback loops between liquidity and solvency if there is a system-wide crisis and loans to the nontradable sector (construction, housing, SMEs) dominate the asset side of the balance sheet. In particular, forced deleveraging over a short-time timescale can be self-defeating by driving down asset values in a firesale process. At the same time, open-ended liquidity provides incentives to delay excessively the resolution of problem loans, such that the monetary authority must strike a delicate balance in setting liquidity policies. On an ex-ante basis, the prospective availability of eurosystem liquidity may have also weakened the incentives to constrain credit growth during the boom phase (Fagan and McNelis 2014). Furthermore, in scenarios in which banks are substantially exposed to sovereign default risk, it may be necessary to condition access to eurosystem liquidity to compliance with specified fiscal plans, which inevitably puts central bankers in the political spotlight.

In the absence of monetary union, the unfolding of the crisis would have been quite different. Since the scale of the pre-crisis credit expansion in the euro periphery would only have been possible by taking on large-scale foreign-currency liabilities, a national central bank would have been limited in its capacity to provide substantial foreign-currency liquidity. In the event of a large-scale flight of bank depositors and bank creditors, the imposition of capital controls and/or liability restructuring would have been necessary. At the same time, a loss in confidence in the domestic currency could have resulted in a large devaluation, a sharp increase in interest rates and a corresponding decline in asset prices.

While devaluation may be helpful in stimulating economic recovery by improving domestic cost competitiveness over time, its immediate impact is to further exacerbate balance sheet problems in relation to foreign-currency debts. Taken together, these forces could have led to a more acute type of crisis, with a deeper initial recession, larger movements in interest rates and asset prices, a jump in the domestic price level and more debt restructuring. Of course, a full evaluation of the pros and cons of alternative monetary regimes requires a broader set of criteria, with the role played by exchange rate adjustment during a crisis episode set

alongside the implications for monetary conditions during normal times. In the European context, a further political economy consideration is the potential impact of fluctuations in national currency values on the political support for the level playing field philosophy that is the foundation for the single market (Eichengreen 1996).

Assessing the relative contributions of surges in sovereign risk premia, fiscal austerity, poor investment dynamics and the monetary policy stance to the second phase of the crisis during 2010-2012 remains open to dispute.¹⁴ One basic policy lesson from this episode was that compromised fiscal capacity severely inhibits the potential role of counter-cyclical fiscal policy during recessions, especially if monetary policy is near its lower bound. In particular, if a counter-cyclical fiscal initiative triggers solvency concerns, the adverse impact of an increase in the sovereign risk premium can dominate the traditional Keynesian transmission mechanism (Corsetti et al 2014). More speculatively, this episode also raised the question whether a more coordinated approach to determining the fiscal stance could have alleviated the impact by internalising the cross-border spillovers of national-level austerity policies.

A second lesson was that the untested foundations of the single currency could amplify crisis dynamics by inviting speculation in relation to redenomination risk. While cross-country variation in sovereign risk premia (and the funding costs facing banks) that aligned with differences in solvency assessments would be consistent with the operation of the monetary union, it became clear during this period that investors also placed some weight on redenomination risk in determining asset prices, which was not compatible with a secure monetary union.

A third lesson was the force of the doom loop by which national fiscal crises and national banking crises fed each other. While the balance sheets of the sovereign and the national banking system have common exposures to domestic recessionary forces, national governments were also exposed to the direct fiscal costs of intervening in banking systems, which was more likely in the absence of recovery and resolution regimes that could ensure that private investors bore the costs of fixing a distressed banking system. In the other direction, banks were exposed to sovereign risk through multiple channels. If an intensification of sovereign risk triggered recessionary austerity measures, the quality of the domestic loan book would decline, while banks might also be faced with a higher tax burden. In addition, banks were directly exposed to sovereign risk through holdings of domestic sovereign bonds.

¹⁴ See, amongst others, Lane (2012), Veld (2013), Kollmann et al (2015), Rannenberg et al (2015) and Constancio (2018b).

In the next section, we turn to the policy measures that were taken in response to the crisis and also address the future evolution of the institutional architecture for the euro area.

5. The Institutional Design of European Monetary Union

The original work on the design of the monetary union focused on the mandate of the European Central Bank, while the fiscal policies of the member countries were also restricted by the EU-wide Stability and Growth Pact.¹⁵ The crisis induced a significant expansion in the institutional framework of the monetary union, while it is widely agreed that further progress is required in order to enhance macroeconomic stabilisation and ensure that the euro area proves sufficiently robust in the event of future crisis events.¹⁶

The cohesion of the euro area is underpinned by the pursuit of sound public finances by each member state. If member countries maintain prudent fiscal stances during good times, fiscal easing (both through automatic stabilisers and discretionary measures) during downturns can play an important stabilising role in the event of country-specific or common shocks. At the level of the EU and the euro area, a recurrent challenge has been to design an institutional framework that can effectively support and validate the running of prudential national fiscal policies, given the deficit and debt biases identified in the literature on the conduct of fiscal policy. In response to the crisis, extra fiscal safeguards were put in place, with a greater emphasis on national institutional constraints (fiscal responsibility laws, independent fiscal councils), a shift in focus towards the underlying structural fiscal balance, the introduction of feedback mechanisms to promote reversion in the debt-output ratio during recovery phases and a more structured approach to the monitoring and oversight of fiscal plans.

The optimal design of the European fiscal framework remains a live debate, with open issues including the simplification of the set of fiscal rules and the effective

¹⁵ James (2012) provides a comprehensive study of the institutional design negotiations prior to the launch of the euro.

¹⁶ See Corsetti et al (2015), Juncker (2015), Corsetti et al (2016), Benassy-Quere and Giavazzi (2017) and Benassy-Quere et al (2018). There is also a wider debate about the architecture of the international financial system that shares some common themes (such as the potential gains from international risk sharing) but the scope for trans-national institutional development is far greater at EU and euro area levels.

measurement of structural fiscal positions. Still, the framework has provided an important anchor for the conduct of national fiscal policies during the post-crisis period: while the counterfactual evolution of fiscal positions under purely national frameworks is difficult to pin down, it is plausible that the collective restraints imposed by the European-level framework has contributed to fiscal discipline. Moreover, the development of a robust fiscal framework and the accumulation of a track record of national compliance may facilitate effective counter-cyclical national fiscal policies during future downturns, since cyclical loosening should not give rise to concerns about long-term sustainability under such conditions. Furthermore, a credible area-wide institutional framework that anchors national fiscal policies is a precondition for other initiatives such as an official funding mechanism (the ESM), the outright monetary transactions (OMT) programme of the ECB and the deepening of banking union.

The combination of the Greek fiscal situation and the ongoing weaknesses in the European and global financial systems induced the introduction of European official funding programmes in 2010 that went on to be deployed in Ireland, Portugal, Cyprus and Spain (banking sector only), in addition to Greece. In 2012, the European Stability Mechanism (ESM) was formalised as a permanent official funding agency. A permanent official funding agency reduces the probability of a panic-induced sudden stop in sovereign debt markets, which may be especially prevalent in a monetary union to the extent that traders believe that national sovereigns in a currency union have fewer stabilisation options in the event of a rollover crisis (Bianchi and Mondragon 2018). Compared to the potential disruptive impact of sovereign debt restructuring, an official funding programme can also ease the possible spillover impact of fiscal distress in a member country that has suffered a loss of market access but which can plausibly return to market funding after a temporary phase of official support.

An official funding agency is more sustainable, the less often it is called upon, such that there is a tight connection between the ESM and the European fiscal framework discussed above: if the latter is effective, the former will only be needed in the event of severe cases of bad luck, with the fiscal position of a national government only undone by an unanticipated and large shock. Equally, the funding costs of the ESM are minimised, the more the long-term fiscal plans of a member country can be anchored by a credible fiscal framework, such that a programme country can return to normal market funding sooner rather than later.

As is reflected in the current policy debate on the future of the ESM, an official funding agency can also fulfill other functions, such as a temporary funding backstop to support resolution interventions or a necessary fiscal guarantee for the provision

of liquidity in resolution.¹⁷ These additional functions can be interpreted as providing the fiscal backing needed to maintain banking union even under tail scenarios.

An ESM programme is also necessary for the viability of the ECB's OMT programme, which was announced in 2012. The scope of the OMT programme is to eliminate liquidity runs on national sovereign debt markets that are motivated by redenomination risk concerns (in order to safeguard the integrity of monetary policy). Accordingly, a precondition for OMT is to exclude scenarios in which solvency concerns remain unaddressed by insisting on compliance with an ESM programme. By the way, it could be illuminating to think through the conditions under which central banks in other jurisdictions could reconcile stepping in as a last-resort purchaser of sovereign debt and the avoidance of fiscal dominance. Since this is an "out of equilibrium" scenario (liquidity runs should not occur if investors understand the willingness of a central bank to underpin the liquidity of the sovereign debt market), such conditions are typically not explicitly laid out: as the central bank for a new multi-country monetary union, it ultimately proved necessary for the ECB to spell out these conditions (as customised to the nature of the euro area).

The June 2012 European Council also marked the decision to move towards a banking union. Banking union is comprised of several institutional pillars - a single supervisory mechanism (SSM); a single resolution mechanism (SRM); and a single European deposit insurance system (EDIS). While the first two pillars are now in place (even if the associated single resolution fund is only being phased in over a number of years), the timing of the completion of the third pillar remains under discussion.

Banking union is the most important component in improving the operation of the monetary union. At a basic level, the effectiveness of monetary policy depends on a stable area-wide banking system; otherwise, the transmission of monetary policy is compromised by the fragmentation of the banking system and divergence in the pass through of policy rates to lending rates across the euro area. In relation to the liquidity operations of the ECB, a single supervisory mechanism has the potential to improve understanding of the solvency and balance sheets of individual banks, which is necessary in adjudicating liquidity requests and evaluating posted collateral. As a byproduct, banking union should also improve efficiency by ensuring a level playing field and insulating supervisory and resolution decisions from national political pressures.

¹⁷ I do not discuss the other elements of ESM reform, such as governance issues, programme design or the interplay between official funding and bail-ins of sovereign bond holders.

Crucially, banking union also has the potential to mitigate national macroeconomic shocks. First, banking union may facilitate more diversified international ownership of bank equity and contingent debt instruments, such that the costs of distressed banks are not solely concentrated in the domestic economy. Second, banking union may lead to more geographically-diversified banks, such that local shocks do not undermine the viability of banking operations.

The realisation of the full potential of banking union is dependent on the weakening of the links between banks and national sovereigns. All else equal, the valuation and funding costs of banks depends on the capacity of the sovereign to provide fiscal backing during tail events. In this way, variation across countries in the strength and scale of national fiscal positions is a barrier to a fully-integrated banking union. Together with the introduction of the single resolution mechanism and the single resolution fund, more stringent capital and liquidity requirements for banks have lowered - but not eliminated - the probability of future fiscal interventions in the event of a banking crisis. In due course, a shared commitment to a common fiscal backstop can support a deeper level of banking union (Marzinotto et al 2011).

Of course, a nationally-focused bank shares common risk factors with a national sovereign: a domestic recession will hurt the earnings of such banks at the same time as the fiscal position of the sovereign deteriorates. This correlation is strengthened to the extent that a bank disproportionately holds domestic sovereign bonds on the asset side of its balance sheet and sovereign risk assessments materially decline during such downturns. In contrast, a bank that holds a diversified pool of sovereign bonds is less exposed to this type of bank-sovereign spillover. In a multi-country monetary union, such diversification is feasible without taking on currency risk.

There is an extensive debate on the pros and cons of introducing reforms to the regulatory treatment of sovereign exposures (RTSE) in bank balance sheets in order to prompt a shift away from home-biased sovereign portfolios (see, amongst others, ESRB 2015 and Constancio 2018b). Clearly, any potential role for domestic banks as purchasers of last resort in the national sovereign bond market loses its salience if the risk of a liquidity run is credibly mitigated by the introduction of the ESM and the OMT programme. Furthermore, even if sovereign risk is substantially reduced by long-term adherence to the European fiscal framework and the shift to a common fiscal backstop for the banking union, ongoing sovereign tail risks means that the removal of home bias in the sovereign portfolios of banks would provide additional reassurance that the overall policy constellation minimises the adverse dynamics inherent in the linkages between domestic banks and domestic sovereigns.

While it is possible to conceive of each bank in the euro area directly holding a geographically-diversified portfolio of national sovereign bonds, an innovation that would simultaneously enable both area-wide diversification and de-risking would be the introduction of sovereign bond backed securities (SBBS). The manufacturing of SBBS would involve the issuance of senior and subordinated tranches, backed by a GDP-weighted portfolio of national sovereign bonds of all members of the euro area that are able to raise market funding (High-Level Task Force on Safe Assets, 2018).¹⁸ In particular, if banks held the senior SBBS tranche, this would provide both diversification and additional insulation against sovereign risks. If the SBBS market achieved sufficient scale, the senior SBBS tranche could also play a role in expanding the set of low-risk securities, thereby also contributing to capital markets union by facilitating secured financing transactions. Furthermore, if banks held senior SBBS rather than domestic national bonds, the probability of a sudden stop would decline, due to the weakening of the domestic doom loop.

The completion of banking union also requires an integrated deposit insurance system, such that the protection offered to insured depositors is common across the euro area and is independent of national governments. In its absence, there remains the possibility of national-level bank runs driven by fears of the viability of a domestic deposit insurance scheme. A well-designed scheme in which banks are charged risk-based premia should not generate ex-ante expectations of net transfers across countries. Moreover, the likelihood of deposit insurance being invoked has been much reduced by the improvement in the balance sheets of banks (more capital, more provisions, fewer non-performing exposures) and the ongoing issuance of contingent securities that insulate insured depositors from banking distress (Carmassi et al 2018). Furthermore, in line with the preceding discussion, long-term adherence to the EU fiscal framework limits the risk of a sovereign-driven banking crisis. This risk can be further mitigated by limiting the home bias in bank holdings of sovereign bonds.

Alongside banking union, making progress in integrating European capital markets can also improve the coherence of the euro area. In relation to debt finance, expanded roles for non-bank lenders and debt securities markets would reduce dependence on banking systems. Moreover, an expansion in cross-border equity positions would enable risk sharing in relation to the types of permanent shocks that cannot be smoothed through borrowing and lending mechanisms.¹⁹ While tackling the legal and institutional barriers to cross-border capital market activity is valuable, the ultimate scale of cross-border equity holdings likely also depends on progress in completing the single market in goods and services (Obstfeld and Rogoff

¹⁸ More precisely, the weights would be aligned to the capital key of the ECB, with a tolerance for limited deviations to take account of countries that issue little debt or that have lost market access.

¹⁹ See Martinez et al (2018) for a recent analysis.

2000). In particular, a more integrated European economy would both reduce the degree of home bias in optimally-constructed portfolios and foster the emergence of the larger-scale firms that are more likely to issue significant volumes of equity and debt securities against pan-European earnings streams. The path to product market integration also plausibly involves a step increase in direct investment flows, enabling the expansion of dynamic firms both through greenfield investments and mergers and acquisitions.

Through enhanced diversification and risk sharing, the deepening of financial integration - through banking union and capital markets union - should dampen the national impact of economic and financial shocks. This should be viewed as complementary to the potential buffering role of counter-cyclical national fiscal policies and national macroprudential policies. Since the crisis, there has been an expanded focus on macroprudential policy, with the establishment of national macroprudential authorities in each EU member country and the deployment of a range of macroprudential instruments, including various capital buffers and borrower-based measures such as loan-to-value and loan-to-income ceilings on mortgages.²⁰

Given the early-stage status of macroprudential policy in advanced economies, much remains to be learned about the normative and positive economics of macroprudential policies. Still, a well-understood problem is inaction bias, by which policymakers move too late and too little to contain risks. If macroprudential policy is to play an effective role in building resilience and dampening the impact of shocks, macroprudential authorities must be willing to act with sufficient force and sufficient timeliness. This is all the more true for members of a monetary union, since monetary policy cannot be deployed to clean up in the wake of country-specific shocks.

So far, the institutional and policy reforms that I have discussed have not included elements that involve the expansion of fiscal union, beyond the joint backing of the ESM.²¹ There are several strands to the fiscal union debate (see Berger et al (2018) for a comprehensive review). Here, I focus on the potential macroeconomic stabilisation role of a central fiscal capacity (CFC).

²⁰ For member countries of the euro area, the ECB has top-up powers in relation to some capital buffers. Some of the limitations of macroprudential policy (such as cross-border leakages) are mitigated by the role of the European Systemic Risk Board (ESRB) in managing these spillovers.

²¹ Of course, the member countries are also fiscally linked through joint ownership of the ECB, in addition through the common budget of the European Union.

Since borrowing and lending at the national level should be sufficient to absorb typical cyclical shocks, the primary value of an area-wide risk sharing mechanism would be in relation to unusually large and persistent shocks. An important collective benefit from a CFC is that it would put less cyclical pressure on fiscal resources during a sharp downturn, which in turn would make it less likely that ESM assistance would need to be invoked.

Such public risk sharing would be additional to the private risk sharing that is obtainable by extending the degree of cross-border equity positions across countries. Still, as pointed out by Farhi and Werning (2017), it is unlikely that the private market outcome would provide sufficient risk management since firms and households cannot factor in the macroeconomic externalities from national income fluctuations.

A general characteristic of schemes that are intended to provide collective insurance against unanticipated shocks is that it is difficult to calculate the relative contributions of exogenous disturbances versus domestic policy errors (such as inadequate deployment of macroprudential policy or insufficiently-prudent fiscal policy) in determining the magnitude of an economic downturn.²² This is an important reason why such schemes would require sufficient political backing and oversight to reassure citizens across the euro area that such schemes would not be open to manipulation by poor policy decisions in some member countries.

To the extent that such shocks are more easily observed and verified by external observers, an “exceptional cases” risk-sharing mechanism may be more operationally feasible than a linear-type scheme. Moreover, as suggested by Beblavy et al (2015) in the example of an unemployment reinsurance scheme, an experience rating system that updates country-specific insurance premia for those countries that call on the fund also means that such schemes could be designed to ensure that long-run net cross-border transfers would be zero. Arnold et al (2018) make a similar proposal in relation to the design of a central fiscal capacity (CFC) for macroeconomic stabilisation, with a “usage premium” levied on a recipient country after it has recovered from an adverse shock. In a tail scenario in which the euro area is collectively suffering a substantial adverse shock, the resources of a central stabilisation fund could be supplemented through a borrowing capacity that would be backed by the member countries.

²² With the establishment of the SSM, poor supervision in relation to systemically-important credit banks at national level is no longer a source of asymmetric policy errors within the euro area.

Forms of central borrowing capacity that are ringfenced for limited-purpose entities - such as the funding of the ESM or a central stabilisation fund - are fundamentally distinct to the concept of Eurobonds that are jointly guaranteed by the member governments and are intended to provide general funding for national treasuries (or an expanded central budget). The scale and nature of the mutual commitments that would provide the backing for Eurobonds would require a proportionate expansion in joint political oversight over national fiscal policies. Leandro and Zettelmeyer (2018) provide an analysis of hybrid schemes that seek to capture many of the benefits of Eurobonds with more limited forms of joint commitments. A common feature of many of these schemes is that an area-wide funding instrument would have senior status, ranking ahead of national sovereign bonds. It follows that moving forward with an expanded role for area-wide issuance programmes requires a fundamental acceptance by the member governments of a new hierarchy in terms of financial claims.

Finally, Blanchard (2018) revisits the potential for national wage negotiations in improving the efficiency of the adjustment process in relation to asymmetric shocks. The appropriate national adjustment in wages depends on the nature of the shock, while decentralised wage determination cannot internalise the macroeconomics of aggregate wage dynamics. While it is tricky to build and maintain a multi-level wage determination process that takes into account firm-, sector- and country-specific factors, it does offer the potential to improve the macroeconomic adjustment process.²³

Conclusions

There has been substantial convergence in the diagnosis of the boom-bust-crisis-recovery cycle that has defined the euro area economy over the last twenty years. Still, the relative importance of the different contributory factors remains open to dispute: researchers can play a vital role in closing these gaps through further theoretical and empirical studies of the properties of the euro area.

The shared diagnosis has fostered significant institutional reforms since 2010: the current architecture of the euro area has moved significantly compared to the original design at its launch in 1999. In terms of the urgency of the reform agenda, the asymmetric legacies of the crisis in terms of the distribution of private and public debt positions and the impact on income and production levels doubtless makes it more difficult to initiate cross-border risk-sharing schemes that would operate most

²³ In the context of public sector wage setting, Lane (2010c) suggests a two-part wage contract, in which one part of the wage is protected but the other part is adjustable (in both directions) in relation to shifts in the macroeconomic environment.

easily if the ex-ante risks were similar across the member countries. Still, these same legacy vulnerabilities also constitute a potentially-damaging transmission mechanism that both increase the likelihood and the potency of a future crisis episode. Even if necessarily complex, suitably-adjusted risk sharing programmes can help to mitigate the crisis risk that is the most significant vulnerability of the euro area.

While the remaining variation in policy positions on reforming the euro area institutional architecture in part can be related to the outstanding points of dispute in relation to the analytics of the euro area and assessments of the likelihood of future crisis events, it also reflects philosophical and political differences in relation to the balance between integration and national autonomy. As ever, the future evolution of the euro area will depend on both economic and political forces.

National and area-wide policymakers must make use of the improved institutional architecture to do a better job in terms of ex-ante risk management and ex-post crisis management.

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