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How to redesign the fiscal regime of the eurozone: An alternative take on lessons from US and eurozone experiences

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How to redesign the fiscal regime of the Eurozone: an alternative take on lessons from US and Eurozone experiences

Jörg Bibow

Working Paper 2019.02

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Executive summary

The euro has failed to deliver on its promises. Europe's monetary union is officially 'incomplete'. The Eurozone's fiscal regime is marked by important failures and gaps.

This study investigates the design of a workable fiscal union for the euro area in the near and medium-term future. As a comparative study of fiscal institutions in the United States and the euro area, the objective is to identify elements in the US fiscal regime that might potentially serve the euro area well in 'completing' its own, hitherto dysfunctional euro regime.

Optimum currency area theory has long served as the framework of choice for assessing the desirability and viability of monetary union. With its origins reaching back to the 1960s, optimum currency area theory continues to shape reform debates regarding Europe's monetary union even today. The traditional focus of optimum currency area theory has been on labour market adjustments. Europe's allegedly too rigid labour markets were identified as hindering adjustments to 'asymmetric shocks', shocks that are not common to all monetary union members in the same way. National economies with monetary sovereignty can adjust their exchange rate and monetary policy in response. By contrast, monetary union members are no longer able to resort to tailor-made monetary policy and exchange rate measures in a 'one size must fit all' monetary union.

The 'structural reform' of labour markets mantra is a long-time favourite among policymakers, in the belief that more 'flexible' labour markets, allowing for wage-price (level) flexibility and labour mobility, would support internal rebalancing in response to shocks.

More recently, however, attention has shifted somewhat towards financial markets. It is held that deeply integrated financial markets can provide private channels of mutual insurance to monetary union members. In fact, the hope is that Europe's 'Banking Union' and 'Capital Markets Union' projects could provide effective private 'risk-sharing' mechanisms that can act as a substitute for (missing) official risk sharing through fiscal union, a path that currently appears to be blocked. It is convenient in this context that empirical evidence appears to suggest that the United States' monetary union also features a fiscal union that offers relatively little in terms of official risk sharing. Apparently, high levels of private risk sharing through financial integration are the critical balancing factor in the US dollar monetary union.

The analysis presented in this paper challenges this newfound ‘conventional wisdom’. We argue that ongoing reform debates in Europe – following traditional optimum currency area signposts – have become stuck on the wrong path. Contrary to the optimum currency area theory preoccupation with asymmetric shocks and reform debates following the same script, the euro monetary union’s greatest challenges encountered so far arose not from asymmetric, but from common shocks. Whatever minor role proper asymmetric shocks may have played, Europe’s monetary union has revealed a serious deficiency in dealing with area-wide recessions and systemic financial crises.

While monetary policy errors have played some role, the more important source of malfunctioning was fiscal policy. The euro fiscal regime has notoriously failed to yield an appropriate fiscal stance. As a result, the macro policy mix has been routinely suboptimal as well and the euro area has proved lacking in generating balanced domestic demand growth.

A related regime flaw – ignored by traditional optimum currency area theory – stems from the peculiar ‘divorce’ between monetary and fiscal policies that characterises Europe’s monetary union: just as national treasuries now lack their usual central bank partner, the ECB also lacks a common euro treasury partner. Because all players are weakened as a result, Europe’s monetary union is afflicted by a peculiar systemic vulnerability. In short, the loss of monetary sovereignty – as highlighted by traditional optimum currency area theory – entails severely constrained fiscal sovereignty as well. Systemic vulnerability of the euro monetary union is the consequence, as seen vividly when the ‘bank-sovereign doom loop’ sprang to life during the crisis.

Contrary to the focus of optimum currency area theory, common rather than asymmetric shocks are the main issue, an assessment that is well-aligned with our analysis of the US fiscal union. The strength of America’s system of fiscal federalism shows up in its superior capacity to counter common shocks and contain systemic financial crises. With regard to asymmetric shocks, America’s fiscal union, too, may no longer serve the union and nation particularly well. Arguably, while the euro monetary union critically lacks a fiscal capacity to facilitate the stabilisation of common shocks, with the EU structural funds Europe already has the right kind of tool to support longer-term regional convergence and cohesion.

But convergence and cohesion have not been the experience under the euro either. The euro regime has produced few winners. It is a common mistake to attribute asymmetric outcomes in members’ performance under the euro to asymmetric shocks. Euro-area divergences were not the result of asymmetric shocks proper. Rather, ill-coordinated labour market policies, amplified by the internal workings of the euro regime, have produced diverging competitiveness positions. This is the other key challenge Europe’s monetary union needs to address to achieve better performance in future: the prevention of diverging competitiveness positions.

Germany's 'internal devaluation' through wage repression since 1996 – allegedly to 'restore' lost competitiveness – was the original sin in this regard. Once internal imbalances imploded during the crisis, Germany's euro partners were forced to embark on the next round of internal devaluations to restore their lost competitiveness. Engaging in such a cycle of competitive internal devaluations contradicts the euro's very rationale: to forever ban beggar-thy-neighbour devaluations, which are even more damaging than engaging in 'race-to-the-bottom' tax competition among partners.

Together with the structural reform mantra targeting Europe's labour markets, competition among monetary union partners may serve certain interests. Today, however, it can no longer be ignored that the neoliberal agenda that is enticing competition among nations ultimately undermines rather than bolsters the unfinished and increasingly fragile project of European integration. Misled by optimum currency area theory, euro reform debates continue to obsess about asymmetric shocks, when the focus should really be on preventing divergences and bolstering defences against symmetric shocks.

1. Rationale and overview

The euro has failed to deliver on its promises. In fact, Europe's monetary union is officially 'incomplete' and unviable in its current setup (Van Rompuy *et al.* 2012; Juncker *et al.* 2015). The crises suffered since 2007 have cost the citizens of the European Union (EU) very dearly. It took until 2016 for domestic demand in the euro area to return to its pre-crisis peak. In 2017, the euro area briefly seemed to have finally broken through to a somewhat more broadly-based recovery, but in 2018 that recovery appears to be past its peak already. High unemployment and other legacies of the crises continue to hold back development in numerous Member States. Serious doubts remain about whether the current recovery is truly sustainable and strong enough to provide the hoped-for healing.

While the euro area may have steered clear of some critical political cliffs in its recent past, it is unlikely to survive another major economic storm (Berger *et al.* 2018). Continued procrastination is a hazardous strategy as downward risks are abundant for the foreseeable future. After effectively pausing austerity for some years, fiscal policy is once again becoming less accommodating. The European Central Bank (ECB), long engaged in legal battles related to its crisis measures, is set to begin curtailing its monetary support towards the end of 2018. Externally, the United States' recovery is very mature and asset valuations appear 'fully priced', if not more. Political and economic conflicts and uncertainties elsewhere in the world economy are too numerous to mention. The euro area's huge current account surplus not only reflects how much it has relied on an external lifeline for its survival since 2007, but also how vulnerable Europe's currency union is to external shocks today.

Euro regime reform is essential. It is urgent to bolster the euro area's systemic economic defences to ensure that steady domestic demand-led growth and regional convergence become achievable. This study argues that making the euro fiscal regime fit for purpose is a chief part of that challenge. But what kind of 'fiscal union', what form and degree of fiscal federalism is right for the euro area at this time?

This study investigates the design of a workable fiscal union for the euro area in the near and medium-term future. As a comparative study of fiscal institutions in the United States and the euro area, the objective is to identify elements in the US fiscal regime that might potentially serve the euro area well in 'completing' its own, hitherto dysfunctional euro regime. For this purpose, the study differentiates between various fiscal functions and objectives and evaluates how these may best be achieved.

Fiscal union involves more than simply disciplining national fiscal policies, the exclusive focus of the euro area's current fiscal regime. A meaningful fiscal union features a system of fiscal federalism that includes a central fiscal capacity, a supranational capacity that can help facilitate the three traditional fiscal functions: redistribution, allocation and stabilisation. Fiscal union may or may not include a transfer union: cross-border redistribution between members. Fiscal transfers may be designed to lead to more income equality inside a currency union, either as current income transfers or as targeted grants for investments that bolster convergence in productivity levels. The EU's 'structural funds' already provide an instrument of the latter type. Fiscal union may also include the joint provision of common public goods under the allocative role of fiscal policy, possibly with partly similar results, as currently undertaken through the structural funds. And finally, fiscal union may support stabilisation in response to shocks that hit the euro area, either individual Member States and/or the euro area as a whole. This study focuses on designing a 'narrow' fiscal union that includes a central fiscal capacity designed to support stabilisation only.

The study proceeds as follows. Section 2 revisits optimum currency area theory, which has served as the framework for research on monetary integration generally and euro debates particularly for more than fifty years now and continues to guide official thinking on regime reform today. We highlight that optimum currency area research is preoccupied with asymmetric shocks, shocks that affect only some Member States, as opposed to symmetric shocks that affect the monetary union as a whole and all Member States similarly. After reviewing the evolution of optimum currency area theory, Section 3 discusses the relevant empirical literature comparing fiscal and (financial) market integration in the United States and the EU/euro area. We highlight a peculiar bias in optimum currency area research that systematically overrates stabilisation through market integration as compared with fiscal integration. An implied risk is that the EU authorities may be placing excessive faith in their current Banking Union cum Capital Markets Union project. Section 4 analyses the euro-area experiences so far with a view to identifying what has really gone wrong under the euro, while Section 5 pinpoints the areas that should be the focus of euro regime reform. A stark contrast between actual experiences and conventional optimum currency area research and ongoing policy debates emerges here. Cumulative internal divergences, a lack of fiscal firepower in the face of common shocks and a peculiar systemic vulnerability due to the 'divorce' between fiscal and monetary policies emerge as the key challenges facing Europe's monetary union. By contrast, asymmetric shocks, the focus of optimum currency area theory and ongoing reform debates, are only a side show. Section 6 investigates the US system of fiscal federalism, seeking inspiration and guidance for the euro area from the US fiscal union. The key strength of the US fiscal union is its superior capacity to counter common shocks and financial crises. The US example confirms the insights gleaned from euro experience: euro regime reform should primarily focus on strengthening the euro area's capacity to cope with common shocks and fix the euro's systemic vulnerabilities. As far as asymmetric outcomes among Member States are concerned, regime reforms should aim at preventing intra-area divergences

and imbalances rather than compensating for their consequences through common mechanisms; in other words 'leaning rather than cleaning' should be the approach. Section 7 lays out a concrete plan for a minimalist but functional fiscal union for the euro area in the near and medium term. Section 8 concludes.

2. Optimum currency area theory and market fundamentalism

This section revisits optimum currency area theory, which has been the workhorse framework of traditional monetary economics for the analysis of currency unions since the 1960s, starting with Mundell's (1961) seminal essay 'A theory of optimum currency areas'. 'Asymmetric shocks' are the focus of Mundell's inquiry, namely shocks that specifically hit only certain members or hit members differently, as opposed to 'symmetric shocks' that are common to the monetary union, affecting all members similarly. National economies with monetary sovereignty can adjust their exchange rate (and monetary policy) in response to shocks to facilitate their rebalancing. As members of a monetary union give up this option, however, they must rely on other policy instruments and/or market adjustments.

Interestingly, Mundell (1961) categorically ruled out the possibility that wage–price (level) flexibility – a key goal of the EU's structural reform mantra as applied to labour markets – would ever be sufficient to internally stabilise a currency union hit by asymmetric shocks. Later in the 1970s, Robert Mundell was also partly responsible for shifting the focus of optimum currency area theory away from its Keynesian-neoclassical-synthesis roots and towards a much more market-faithful direction. Faith here primarily concerns the potential stabilising role of financial market integration – the goal of today's Banking Union and Capital Markets Union projects.

This historical section on the evolution of optimum currency area theory serves mainly to underscore how this theory continues to shape and inform both research and policy debates on Europe's monetary union. Optimum currency area theory thus remains a powerful intellectual force today, even though at the critical time of the Maastricht Treaty negotiations peculiar German ideas on the requirements of a 'stability union' supposedly with ordoliberal features may have been the primary creative force. Making labour markets ever more flexible and integrating financial markets are EU structural reform priorities. More policy focused readers who are less inclined to learn about the historical background to the theoretical framework guiding today's euro reform debates may skip the remainder of this section and move on directly to Section 3.

Mundell's (1961) original contribution to optimum currency area theory highlighted that symmetric and asymmetric shocks to a currency union give rise to fundamentally different kinds of policy challenges. In the case of symmetric shocks – that is, common shocks that affect all members of a currency union more or less alike – a common policy response seems ideal, at least if policy preferences among countries are well aligned. Disparate policy

responses risk causing divergent economic developments and potential conflicts. A currency union thus seems advantageous as monetary and exchange rate policies are fully integrated and the challenge of coordinating national policies in these areas no longer exists.

But unless the currency union is also a fiscal union, the same may not be true for fiscal policy. A first important question therefore is: how can a currency union achieve a 'balanced' fiscal policy response to a common shock? Balance is important both between national fiscal policies, to avoid conflicting national fiscal stances, and in relation to monetary policy. Failure to at least coordinate national fiscal policies risks diverse national responses becoming a source of divergence inside the monetary union. Moreover, an inappropriate aggregate 'fiscal stance' can also overburden monetary policy in its capacity to stabilise common shocks, resulting in a suboptimal or even wholly inappropriate 'macro policy-mix'. In this case the monetary union may become mired in recession and fail to recover.

In the case of asymmetric or idiosyncratic shocks – shocks affecting Member States very differently or only some of them – flexibility for country-specific policy responses and/or rebalancing through market adjustments are called for. In this case the common monetary policy is of no help. A balanced policy response requires weighing national policy autonomy (flexibility) against spillover effects and hence potential conflicts between Member States and regarding the monetary union's aggregate macro policy stance.

From the beginning theoretical (and empirical, see Section 3) investigations have focused primarily on asymmetric shocks, which optimum currency area theory identifies as the chief hindrance and primary risk in forming a currency union. If anything, common shocks strengthen the case for common policies, unless coordination of national policies is equally effective.

In standard neoclassical fashion, Mundell treats exchange rate adjustments and wage–price (level!) flexibility as substitutes when it comes to rebalancing a currency union and restoring intra-union competitiveness positions. Interestingly, taking the United States and Canada as his main example of a potential currency union – two countries that are widely judged by mainstream economists as having labour market institutions that allow for flexible adjustments – Mundell categorically ruled out the possibility that wage–price flexibility would ever be sufficient to internally stabilise a currency union between the two countries. Taking aggregate money wage stability ('rigidity') as a given, even in the US case, with its pre-eminently flexible labour markets, reflects the 'Keynesian' flavour of original optimum currency area theory (while inevitably seeing a problem in this provides the neoclassical counter-flavour).

If exchange rate adjustments are not an option and wage–price flexibility is insufficiently high to make up for it, then factor mobility has to ride to the rescue. Mundell's analysis identifies labour mobility as the foremost safety valve and adjustment route that could serve to internally rebalance a currency union hit by an asymmetric shock.

Note that asymmetric shocks appear to be truly exogenous ('from outside the model') in optimum currency area theory: they hit the system, disturbing its equilibrium, but are not a consequence of its internal workings. Mundell uses a shift in demand from the products of one country towards the products of another country as an example. Adjusting the exchange rate is seen as a policy that can soften or offset the asymmetric shock if wage–price (level) flexibility does not secure rebalancing through market adjustment. Exchange rate adjustments and wage–price flexibility are alternative mechanisms for rebalancing the system and restoring equilibrium. By implication, in the absence of asymmetric shocks and any internal rebalancing needs, diverging wage–price trends – just like *unwarranted* exchange rate changes – represent candidate *causes* of intra-area divergences and imbalances. These would not be shocks that could not be prevented, though.

In fact, a key rationale for forming the euro monetary union was to forever rule out such exchange rate 'shocks'. Fears of a repeat of the 'beggar-thy-neighbour' competitive devaluations of the 1930s motivated Europe's desire for stable exchange rates from the beginning of post-war monetary cooperation. The point is that the crowning glory of this endeavour, the euro monetary union, has made unwarranted divergences in wage–price (level) trends an even bigger threat to currency union stability, not as proper asymmetric shocks, but as potential sources of destabilising cumulative processes that leave intra-area divergences and imbalances in their trail. The exogenous shocks appearing in optimum currency area theory cannot be prevented, only offset. Unwarranted divergences in wage–price (level) trends can be prevented by appropriate policies and institutions. Establishing a cycle of 'internal devaluations', with some Member States restoring their competitiveness in response to other Member States that have already done so is little different from orchestrating a slow-motion version of competitive exchange rate devaluations.

In fact, Keynes ([1936] 1973) identified wage policies as potential neo-mercantilist tools in his *General Theory*. Later, in the context of designing the post-war international (Bretton Woods) currency regime, he argued that diverging national wage (and unit labour cost) trends would require compensation through exchange rate adjustments to maintain balance (see Bibow 2009). By implication, as exchange rates are no longer adjustable, it is vital in a currency union to prevent any unwarranted divergences in national wage (and unit labour cost) trends in the first place. Otherwise, from this Keynes–Mundell perspective, diverging wage trends can unhinge competitiveness positions and undermine balance inside the currency union. The euro was meant to rule out 'beggar-thy-neighbour' policies, not replace one variety of destructive competition among nations with another.

While the debate on fixed versus flexible exchange rates also provided the setting for Mundell's (1961) optimum currency area theory contribution, McKinnon (1963) and Kenen (1969) approached the issue more directly from the perspective of the emerging 'Mundell–Fleming framework' with its focus on the policy goals of internal balance (that is, full employment with price stability) and external balance (that is, competitiveness and current account

balance) and featuring the quest for the optimal ‘policy mix’ between monetary, exchange rate and fiscal policies. McKinnon (1963) emphasised that a conflict between internal and external balance arises as an economy becomes increasingly ‘open’. In very open economies currency devaluation causes a large price level shock that is likely to provoke wage responses. As the exchange rate thereby loses its effectiveness in securing a balanced trade position, the costs of losing the exchange rate instrument are likely to be smaller the more open to trade an economy is.

By assuming real-wage rigidity, nominal wage responses that negate the exchange rate impact on competitiveness, this argument also alerts us to probe the exact nature of any asymmetric shock that may arise. Does the asymmetric shock at hand really require adjustment in intra-union competitiveness positions, in which case real wage rigidity is a problem? Mundell’s ‘export demand shift’ scenario is a case in point. Productivity shocks and national wage trends that fail to keep in touch with national productivity are another. By contrast, if, as a result of a domestic demand shock due, say, to idiosyncratic but temporary factors one Member State falls into recession, neither real-wage rigidity nor the absence of the exchange rate option may present any real problem. In this case the application of fiscal policy may be all that it takes to restore balance. This question is related to another concern raised earlier: if unbalanced competitiveness positions are not the root of the trouble to begin with, then a country’s resort to such policies – effectively beggar-thy-neighbour policies (Gros and Thygesen 1998: 277) – would put them out of kilter and unbalance the currency union.

Kenen (1969) may be better known for identifying the relevance of the degree of ‘diversification’ of economies’ production and export structures in determining their suitability for forming a currency union, arguing that more diversified/less specialised economies are more suitable to form a currency union. While McKinnon makes the point that exchange rate policy becomes less effective the more open countries are to trade, Kenen argues that asymmetric shocks become less of a threat the more diversified and similar are the countries forming a monetary union. Among the optimum currency area theory founding fathers Peter Kenen was also the one who paid the most attention to fiscal policy. Kenen emphasised both the stabilisation and redistribution functions of fiscal policy. Regarding stabilisation Kenen observed:

I come now to another collection of arguments that Mundell and McKinnon have not explored sufficiently. Economic sovereignty has several dimensions, two of them particularly relevant to the problem of managing aggregate demand and maintaining full employment. Fiscal and monetary policies must go hand in hand, and if there is to be an ‘optimum policy mix’, they should have the same domains. There should be a treasury, empowered to tax and spend [and issue its own debt instruments¹],

1. While not explicitly mentioned here, Kenen (1969: 45) refers to debt issuance in his discussion as the ‘thorniest practical problem’ facing a central government that spans a number of currency areas.

opposite each central bank, whether to cooperate with monetary policy or merely to quarrel with it. From other viewpoints, too, the domain of fiscal policy ought to coincide with the currency area or, at least, be no larger than the monetary zone. Otherwise, the treasury will face a host of problems. (Kenen 1969: 45–46)

We mentioned the challenge of establishing an appropriate macro policy-mix earlier, which is relevant in the presence of either symmetric or asymmetric shocks. Regarding symmetric shocks Kenen has a point in suggesting that a perfect match between monetary and fiscal policy domains might simplify matters greatly. By contrast, in the case of asymmetric shocks, it is important that the ‘treasury’ Kenen mentions does not rule out gauging fiscal policy in an appropriately asymmetric fashion and in line with diverse local conditions. The question arises here of whether these challenges may be equally well met by coordinating national fiscal policies or by establishing fiscal union, a system of fiscal federalism that includes a central fiscal capacity supporting macroeconomic stabilisation.

Kenen also discusses a situation in which the monetary and fiscal policy domains do not coincide, as they usually do in national economies with monetary sovereignty. In general, nation states have a national central bank managing the national currency and a national treasury managing the national budget with a view to stabilising the economy. Unfortunately, Kenen only considers the case of a fiscal system that spans a number of currency areas (that is, regions with their own currencies as considered by Mundell 1961), which is the opposite of the euro area as it is constituted today. Whereas monetary union in Europe meant expanding the monetary policy domain to encompass numerous smaller fiscal policy domains, Kenen uses the United States as his point of reference to engage in the counterfactual thought experiment of US monetary fragmentation, of moving back to issuing state or regional currencies.

The point is that while monetary fragmentation may be indicated by Mundell’s argumentation, if asymmetric shocks are a chief concern, Kenen counters this concern by observing that certain government activities may be subject to important economies of scale while a central budget may also serve to combat localised recessions. In the following passage Kenen provides an account of the roles that fiscal federalism plays in the US currency union:

If, then, an optimum currency area should be no smaller than the rather large domain of a least-cost government, it may have to span a great number of single-product regions. If, further, a fiscal system does encompass many such regions it may actually contribute to internal balance, offsetting the [monetary policy] advantage claimed for fragmentation. It is a chief function of fiscal policy, using both sides of the budget, to offset or compensate for regional differences, whether in earned income or in unemployment rates. The large-scale transfer payments built into fiscal systems are interregional, not just interpersonal, and the rules which regulate many of those transfer payments relate to the labor market,

just like the criterion Mundell has employed to mark off the optimum currency area. ... On balance, then, a region may come out ahead by forgoing the right to issue its own currency and alter its exchange rate, in order to participate in a major fiscal system. (Kenen 1969: 47)

While not identifying the systemic vulnerability that results from the ‘divorce’ between monetary and fiscal policies, as later stressed by Goodhart (1998, see below), Kenen makes the case that a balanced macro policy-mix is more likely to arise when the two policy domains coincide. To paraphrase Kenen with regard to Europe’s monetary union: the monetary union should be no larger than the domain of fiscal policy for otherwise ‘the central bank will face a host of problems’.

Overall, it seems, Kenen judged that in response to symmetric shocks an appropriate fiscal–monetary policy-mix may be best secured when monetary and fiscal policy domains coincide: the central bank of the monetary union should be paired with a monetary union treasury. Regarding stabilisation policy in response to asymmetric shocks, Kenen highlighted that a fiscal union that includes federal redistribution mechanisms (as in the US case) might compensate regions for the missing monetary and exchange rate policy instruments by acting as automatic fiscal stabilisers, as well as inbuilt automatic equalisers. For instance, a progressive federal income tax will simultaneously and automatically equalise income levels between heterogeneous regions and stabilise regional economies hit by asymmetric shocks.

Kenen’s (1969) keen concern for stabilisation policies in response to shocks, especially fiscal policy, still reflected the Keynesian *Zeitgeist* of the 1960s. Any microeconomic efficiency gains from sharing a common currency need to be weighed against risks of macroeconomic instability if neither policies nor market adjustment mechanisms (such as labor mobility, as stressed by Mundell) provide sufficient safeguards against asymmetric shocks. Greater trade and economic integration may or may not shift the balance towards symmetry of shocks (Kenen’s better-known argument about diversified production structures) while reducing the effectiveness of the exchange rate instrument (McKinnon’s argument).

Research and debates within the optimum currency area framework have evolved considerably since the 1960s, leading to a situation of neoliberal triumphalism and market fundamentalism by the time of the Delors Committee deliberations and Maastricht negotiations in the late 1980s and early 1990s.

Things already began to shift in the 1970s and Mundell once again provided the lead. Mundell (1973) added two influential new arguments to optimum currency area theory. The first concerned the role of the exchange rate as a stabilising policy instrument applied to balance out competitiveness positions and restore external equilibrium. In a world with free capital mobility, exchange rates may come under speculative attack, Mundell argued, turning

exchange rates into inherent destabilisers. For those who today favour demolishing the euro in an ‘organised manner’ over euro reform, Mundell thus has a message in store: buckle up for foreign exchange market instabilities to undermine the common market (Eichengreen 1993).

To Mundell (1973) losing the exchange rate is then not much of a loss, but rather a benefit of eliminating a source of asymmetric shocks. A second, related argument of his is that joining a monetary union boosts capital market integration and thereby the potential role of capital markets in providing a private insurance mechanism. Broadly speaking, the idea is that holding a diversified portfolio of international assets can help to stabilise local incomes in the face of asymmetric shocks. Mundell’s concern is that exchange rate instability may hinder capital market integration. Both of Mundell’s arguments bolster the case for monetary union.

While Mundell’s concerns about destabilising capital flows contradicted Friedman’s (1953) earlier promise of floating exchange rates as international stabilisers, and also did not fit easily with the emerging faith in financial markets (in the sense of ‘efficient market theory’), the thrust of his arguments was much in line with the rise of monetarism: the belief that government policy needs to be stabilised to avoid policy shocks from destabilising economies that are equipped with natural self-stabilising forces; Priewe 2007). Seen in this new light, monetary unification in Europe would not only rule out destabilising national monetary and exchange rate policies, but also boost the potential for capital markets to integrate and thereby provide an effective private insurance mechanism. It is for these ideas – rather than his earlier, more sceptical ones – that Robert Mundell would later also become known as (one of) the ‘father(s) of the euro’. But optimum currency area theory has evolved still further, together with general trends in macroeconomics (Ishiyama 1975; Tavlas 1993, 2009; Sardonì 2007; Beetsma and Giuliodori 2010).

Elevated inflation levels and the monetarist counterrevolution of the 1970s encouraged a more widespread prioritisation of price stability as the foremost macro policy goal, as pioneered by the Bundesbank. The policy effectiveness of stabilising anything other than the price level – by way of money supply control, as pioneered by the Bundesbank – was further undermined by the rational expectations revolution. And fiscal policy appeared to be afflicted by a ‘deficit bias’ as high unemployment and high interest rates came together with a surge in public debt levels, although the notion of ‘Ricardian equivalence’ was put forward to suggest that public debt would not really matter much anyway. In any case, monetary policy was upgraded relative to fiscal policy. More than anything else fiscal policy appeared to present a potential threat to monetary policy (so-called ‘fiscal dominance’), but not vice versa (Sargent and Wallace 1981).

The rise of ‘real business cycle’ theory and the ‘time inconsistency’ literature further weakened the case for demand stabilisation policy in general and policy ‘discretion’ in particular. Especially in Europe currency market instabilities encouraged the view that ‘tying the hands’ of the authorities was advantageous

because pegging to a ‘credible’ (low inflation) anchor currency would, by virtue of borrowing superior external reputation, enable the pegging country to disinflate at reduced, if not zero costs (Giavazzi and Pagano 1991). Commitment and policy credibility also feature prominently in the ‘time-inconsistency’ case for central bank independence (Bibow 2004c).

By the time the Delors Committee met for its deliberations on EMU in Europe in the late 1980s, and as the economics profession once again became enchanted by optimum currency area theory, views on both economic policy and modelling conventions had changed decisively. Shocks still mattered, first and foremost the asymmetric variety, but otherwise it was mainly ‘modernised’ optimum currency area thinking that found its way into EMU-related reports and studies by the European Commission (European Commission 1990, for instance): policy discipline dominates policy flexibility, market flexibility trumps all.

That said, it is questionable whether the academic discourse and optimum currency area research had much of an influence in shaping political negotiations and the Maastricht EMU outcome. Arguably, the Delors Committee’s report of April 1989, which prepared the ground for the Maastricht negotiations on EMU in 1990–1991, was far more influenced by peculiar German (‘ordoliberal’) views rather than optimum currency area theory (or mainstream economics generally). Karl Otto Pöhl, President of the Deutsche Bundesbank from 1980 until 1991 and a member of the Delors Committee, was in a dominant position shaping the committee’s work and report. The Bundesbank enjoyed a hegemonic position in the European currency sphere, a position it was not overly keen to surrender. Chancellor Helmut Kohl, the German promoter of European monetary unification, was dependent on Bundesbank acquiescence in convincing the German public to give up their beloved deutschmark for something else. This required a regime that, in the judgement of the Bundesbank, would make the euro at least as hard and stable as the deutschmark itself (Kenen 1995; Dyson and Featherstone 1999; Mody 2018).

And the core principles of a ‘stability union’ by (de facto) Bundesbank decree are simple enough: central bank independence, primacy of price stability above all else and fiscal discipline. If optimum currency area theory appears to have influenced the negotiations and outcomes on EMU in Europe, this is arguably because its modernised variety had in large part shed its original Keynesian flavour and converged towards pre-existing German policy views on the matter.

The next section will highlight how optimum currency area theory has shaped empirical research and policy debates on the viability of monetary union in Europe. The aim is to identify the main themes and general direction of approach as optimum currency area theory and empirical research on monetary integration in Europe evolved over time. The subsequent section shows how optimum currency area theory–inspired empirical research and policy advice have failed to match actual experiences under the euro. It appears

that ongoing reform debates in Europe – following optimum currency area theory's signposts – have become stuck on the wrong path.

3. Empirical research on Europe as an optimal currency area

Optimum currency area theory does not yield any absolute criteria for assessing countries' fitness for joining a monetary union. By necessity, all tests and assessments need to be done relative to some benchmark. Typically, the US situation is used as such a benchmark and the United States may well represent the most appropriate comparison as a functioning monetary union of similar size. If empirical findings show that Europe is doing at least as well as the United States with regard to certain criteria identified by optimum currency area theory, then monetary union in Europe should be functional and viable, too.

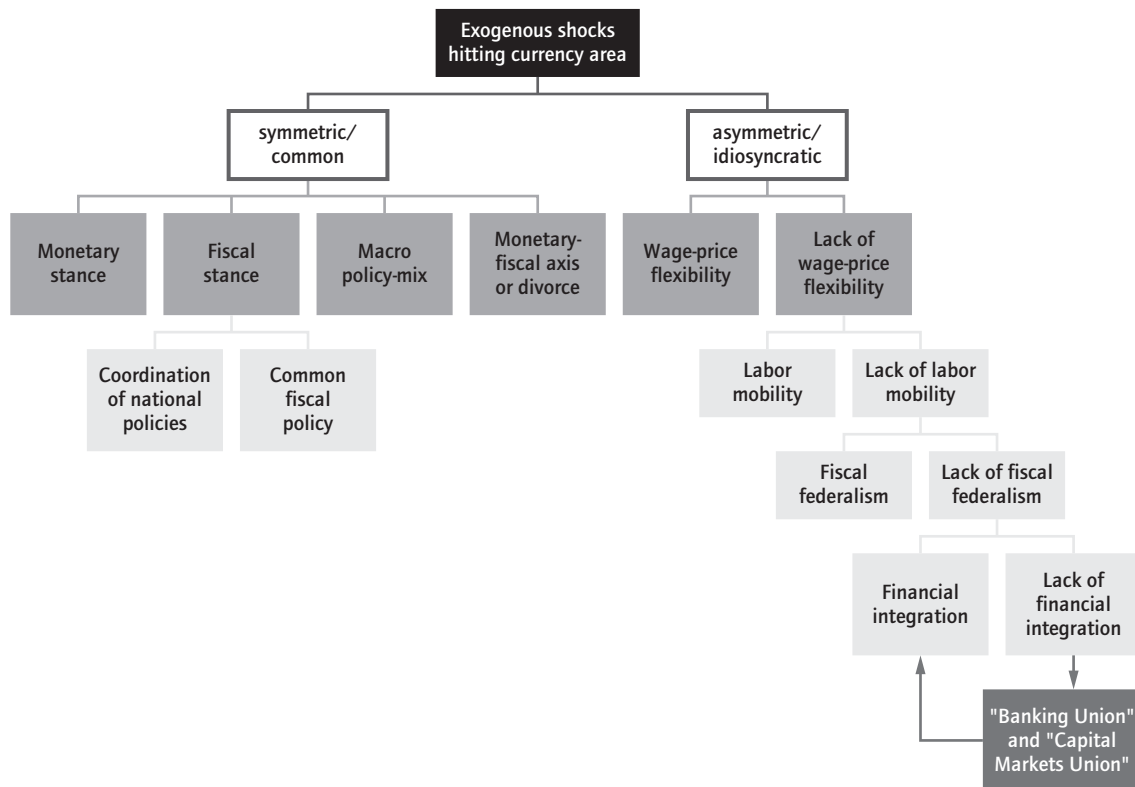
Overall, the empirical evidence regarding the occurrence of asymmetric shocks as a hindrance to monetary union in Europe may be considered inconclusive. Once it was established that both Europe and the United States are subject to shocks identified as asymmetric, the next step and focus of research has been to investigate how the US monetary union manages to cope with asymmetric shocks and whether and how a European monetary union might emulate that success.

The early empirical research established that labor mobility is much higher in the United States than in Europe. This conventional wisdom inspired the EU's notorious push for structural labor market reform to make Europe's allegedly too rigid labor markets more flexible. More recently, the state of financial integration and the relative roles of financial integration versus fiscal integration in the United States and Europe have become the focus of comparative empirical research within the optimum currency area theory framework.

Figure 1 summarises how optimum currency area theory has shaped empirical research on the viability of monetary union in Europe and related policy debates. At the top fork of Figure 1 empirical optimum currency area research and policy debates have chosen the right-hand path indicated: preoccupation with asymmetric shocks and adjustment to them, supposedly posing the bigger challenge to monetary union, has been the norm. This path leads to today's Banking Union cum Capital Markets Union project as the supposed fix that would 'complete' Europe's monetary union and make the euro viable. As our analysis in subsequent sections will make clear, however, the left-hand side of Figure 1 better describes the real challenges the euro area has encountered so far and hence the areas that euro regime reform should focus on. Once again, more policy focused readers who are less inclined to learn about the historical background to optimum currency area theory–inspired empirical research and

its relationship to today's euro reform debates may skip the remainder of this section and move on directly to Section 4.

Figure 1 Optimum currency area theory schemata



Source: author's own elaboration.

The distinction between symmetric and asymmetric shocks is critical to optimum currency area theory. A first focus in the empirical optimum currency area literature was on the significance and nature of shocks hitting the (prospective) monetary union, particularly whether shocks were predominantly 'asymmetric'. As idiosyncratic shocks are seen to be the greater threat to the stability of a monetary union, they are the primary concern. An early influential study by Bayoumi and Eichengreen (1993) distinguished between 'demand shocks' and 'supply shocks' (measured as correlations of output growth and inflation between euro area countries and US regions, respectively) and established the core-periphery distinction that became notorious later in the crisis. Their findings suggested that the euro area's 'core' countries (Germany, France, Belgium, Netherlands, Luxembourg, Denmark) experienced shocks and adjustments that were almost comparable to the US benchmark, while other, 'peripheral' countries' experiences were far off this standard. Starting with a broad and diverse membership of a European monetary union would seem to increase the risks, a view that had much appeal to many observers.

Another finding, however, seemed to suggest that asymmetric shocks may be less of a concern in Europe compared with the United States as the former is more similar as regards the structure of consumption (OECD 1999) and more diversified as regards production (Bini Smaghi and Vori 1992; see also Mongelli 2005).

A related research task is to investigate whether the nature and incidence of shocks has evolved over time or may do so in future; specifically, whether a European monetary union, once established, may improve its fitness to cope with asymmetric shocks over time. The ‘endogeneity view’ popularised since the late 1990s, just in time for the euro’s launch (see Frankel and Rose 1998; Rose 2000; Mongelli 2005), argues that monetary union membership itself would generate strong forces likely to improve countries’ fitness and the viability of monetary unions. This view runs counter to the earlier hypothesis that deeper economic integration might lead to greater regional specialisation, which (in the spirit of Kenen 1969) implies increasing risks of asymmetric shocks (Krugman 1993). Campos and Macchiarelli (2018) shed some fresh light on the core–periphery dichotomy, which they identify as varying over time.

Overall, the empirical evidence regarding the occurrence of asymmetric shocks as a hindrance to monetary union in Europe may be considered inconclusive. As both Europe and the United States seem to be subject to shocks empirically identified as asymmetric (see also Beckworth 2010), the focus of research shifted to investigating how the US monetary union manages to cope with asymmetric shocks and whether and how a European monetary union might emulate that success.

In his seminal contribution Mundell (1961) essentially ruled out that wage–price (level) flexibility could ever provide a realistic solution to the challenge. Empirical findings show significant rigidities that seem to rule out wage–price flexibility as a reliable short-run adjustment mechanism, even in the US case. The evolution of optimum currency area theory and its application to monetary union in Europe has undergone a fundamental change with regard to the role of wage–price flexibility. Evidence for nominal rigidities in the United States has not stopped the EU from developing a peculiar ‘structural reform’ mantra, which culminated in the ‘Lisbon Agenda’, directed particularly at labor markets with the declared aim of making them more flexible, on the grounds that this helps with adjusting to shocks. By contrast, following the lead and spirit of Mundell (1961), empirical optimum currency area research has focused on and extensively explored how labor mobility in Europe compares with the US situation. The general (pre-crisis) finding was that labor mobility in Europe falls far short of the US benchmark (OECD 1986; Blanchard and Katz 1992; Decressin and Fatás 1995).

The finding of significantly lower labor mobility in Europe has been widely seen as a critical obstacle to monetary union in Europe. To some researchers this finding clearly suggested that Europe should not dare to take the risk at all. To others, lack of labor mobility meant that alternative adjustment mechanisms would be even more important in making monetary union in Europe viable.

Kenen (1969) identified one such potential alternative adjustment mechanism: mutual insurance through fiscal union as exemplified by the US system of fiscal federalism. An early study by Sala-i-Martin and Sachs (1991) concluded that the US federal fiscal system stabilises between one-third and one-half of every dollar reduction in state personal income. In other words, asymmetric state shocks reduce disposable income by only 56 to 65 cents. While Sachs and Sala-i-Martin's regressions were undertaken in terms of levels, Bayoumi and Masson (1995) followed a similar approach but regressed growth rates rather than levels to exclude the redistribution effects that are built into the US federal system. Focusing therefore on the stabilisation effects alone, they nevertheless estimated that the US federal system would stabilise around 30 per cent of regional business cycles and hence provide significant interregional insurance through fiscal integration.

According to Fatás (1998), these stabilisation measures capture the fiscal response to both common and idiosyncratic shocks. In other words, earlier studies overestimate the degree of interregional insurance because their estimates also include 'intertemporal stabilisation', the 'stabilisation of disposable income done by countercyclical budget balances' (Fatás 1998: 172). Decomposing insurance and stabilisation Fatás (1998) finds that the methodology used by Bayoumi and Masson (1995) overestimates insurance by a factor of three.

Other studies, too, generally put the magnitude of interregional insurance achieved by the US fiscal union at only 10–15 per cent or so (see von Hagen 1992; Goodhart and Smith 1993; Pisani-Ferry, Italianer and Lescure 1993; Melitz 2004; Alcidi and Thirion 2017; Alcidi et al. 2017, for instance). While not insignificant, the stabilisation of idiosyncratic shocks ensured through fiscal integration in the United States thus appears to be quite limited, which is probably the consensus view today.

Moreover, because corresponding estimates of what may be achieved in Europe in terms of stabilising idiosyncratic shocks through national fiscal systems without any further fiscal integration are in the same ballpark as US estimates, the lack of fiscal union was widely regarded as not representing a critical shortcoming of the euro regime. Some researchers go even further and claim that the euro area is at an advantage over the United States in terms of the fiscal capacity to stabilise asymmetric shocks. According to Alcidi and Thirion (2017: 5), 'euro area member states smoothed nearly twice as much of an asymmetric shock (19.8 per cent) as the US federal budget did through inter-state risk sharing (11 per cent) between 1995 and 2013'.

The following concluding observation made by Fatás (1998) highlights the critical assumption behind the contemporary consensus view, namely that the tool of intertemporal stabilisation through countercyclical budgets is readily available to euro area member countries, which can simply rely on their national fiscal systems. Essentially, the assumption is that national governments have the fiscal flexibility to both individually stabilise idiosyncratic shocks and jointly stabilise common shocks by simply tolerating

temporary budget deficits. The following caveat sounds a critical warning, though:

If government deficits are constrained by the limits of the Stability Pact, the ability of the current national systems to adjust to shocks through intertemporal transfers will disappear. Under this scenario, there will be a much greater need for a European fiscal federation. In the absence of national fiscal policies, the benefits of a European fiscal federation will also include the intertemporal stabilization role that the national systems, constrained by the Stability Pact, will not be able to play. (Fatás 1998: 191–92)

Unfortunately, this important warning has not inspired many observers to question the workability of the Stability and Growth Pact and to properly investigate the extent to which Europe's monetary union needs to move towards a system of fiscal federalism if it is to succeed. Instead, researchers have focused their energies on identifying what other – market! – mechanisms might contribute to stabilising the US monetary union.

It is in this context that Mundell's (1973) idea of capital market integration has gained prominence in empirical research and policy debates. The core idea is that private insurance mechanisms might potentially substitute for (missing) fiscal federalism in Europe. An influential study by Asdrubali, Sorensen and Yosha (1996) prepared the ground for the development of the widespread view that financial integration provides the main force of greater stability of the US economy. They applied a methodology that decomposes the 'smoothed' part of fluctuations into three channels of risk sharing: (i) smoothing by capital markets, (ii) smoothing by credit markets and (iii) smoothing by the federal system. They estimate that capital and credit markets are very powerful, smoothing 39 per cent and 23 per cent of the income shocks, respectively. By contrast, the federal system contributes only 13 per cent income smoothing, while roughly one-third remains unsmoothed. In light of such estimates of the relative role of financial integration versus fiscal integration in the United States it becomes understandable that the euro authorities have started to place their bets on the former rather than the latter. Most recently, this line of argument has also been a factor behind the EU's push for establishing a 'Banking Union' and complementing it with a 'Capital Markets Union'.

Serious doubts exist about the validity of these seemingly convincing assessments, however. For instance, Melitz and Zumer (2002) and Melitz (2004) show that inconsistent accounting led to inaccurate estimates of smoothing through fiscal integration in some earlier studies (including the ones just discussed). Elaborating on this critique, Melitz argues that Asdrubali *et al.* (1996) exaggerate the extent of risk-sharing (by underestimating the unsmoothed part of shocks) and 'ascribe too much of the smoothing of output shocks to portfolio diversification and to firms and too little to household saving' (Melitz 2004: 829). His discussion of the role of household saving refers to increased cross-border credit flows in the euro area prior to the crisis and

reflects the contemporary optimism that rising intra-area current account imbalances were benign signs of convergence. Similarly, Del Negro (2002) identifies serious measurement errors in output that imply that Asdrubali *et al.* (1996) may be significantly overestimating risk-sharing, implying a puzzling lack of interstate smoothing in the US monetary union. Astrubali and Kim (2004) apply VAR (Vector Auto-Regression) methodology to analyse the dynamics of channels of interregional risk sharing and intertemporal smoothing. While they broadly confirm the results derived from the standard static decomposition framework of Astrubali *et al.* (1996), they acknowledge that the estimated smoothing role of the federal system may be biased downward. Poncela *et al.* (2016) provide recent estimates based on VAR methodology, including the crisis era.

Dullien (2017) more fundamentally questions the standard methodology of decomposing risk-sharing that follows Asdrubali *et al.* (1996), arguing that it systematically underestimates the role that federal governments play in stabilising regional business cycles but overestimates the role of stabilisation through financial integration. The first part of the critique – the underestimation of the role of fiscal integration – arises because federal transfers in the event of national recessions and direct spending by the federal government in states are ignored. The second part of the critique – the overestimation of the role of financial integration – arises because smoothing of distributed profits by domestic firms is counted as cross-border smoothing by capital markets, while variations in household savings rates to smooth consumption are counted as cross-border smoothing by credit markets.

We think that Dullien's (2017) critique of the standard methodology is largely valid. Its first part relates to the crucial role of federal fiscal policy in smoothing common shocks, dubbed 'intertemporal stabilisation' by Fatás (1998), who sounded a warning about the constraints imposed in the euro area by the Stability and Growth Pact. The critique's second part reminds us that conventional 'dividend smoothing' may have little to do with widespread cross-border ownership of assets and claims in the United States while consumption smoothing by households may have equally little to do with cross-border risk-sharing through credit markets, phenomena that are also both to be expected in closed economies. In short, the actual contribution towards output stabilisation through financial integration may be significantly smaller than suggested by estimates based on the standard methodology.

We close this discussion by repeating our concern that interpreting booming pre-crisis intra-area credit flows as in any way stabilising and contributing to convergence may be fundamentally misguided. The experience of 'sudden stops/reversals' of capital flows, especially private credit flows, after 2008 – to be discussed in Section 4 below – clearly undermines conventional assumptions about the supposed beneficence of financial integration and risk-sharing benefits allegedly arising from it.

To summarise the rationale and evolution of empirical optimum currency area research and policy debates, as depicted in Figure 1, preoccupation with

asymmetric shocks, supposedly posing the bigger challenge to monetary union, has been the norm (see the right-hand side of Figure 1). But the way in which the nature of shocks is identified in empirical optimum currency area studies leaves it open whether the shocks in question are truly asymmetric in the sense of exogenous and idiosyncratic shocks hitting certain countries but not others, as featured in optimum currency area theory, or whether either idiosyncratic policy choices (blunders) and/or the euro regime itself may have given rise to cumulative processes featuring endogenous intra-area divergences and imbalances that are quite wrongly identified as asymmetric shocks. The next section will argue that the latter has indeed been the case.

Following the right-hand side in Figure 1 from top to bottom, the second and third forks concern labor markets. Empirical optimum currency area research on Europe's monetary union has followed the relevant theory and focused on labor mobility. From the beginning Europe's supposed lack of labor mobility has been viewed as the key source of vulnerability of any European monetary union. We believe that post-crisis experiences deliver a very different kind of message, an issue to which we will return in Section 6. We have noted that EU policy has been characterised by a peculiar zeal to raise wage–price flexibility through structural reform, targeting the second fork that was essentially 'written off' by Mundell in his seminal essay.

The fourth fork in Figure 1 concerns fiscal union and the role of fiscal policy in fostering stability, convergence, and cohesion in a monetary union. Empirical optimum currency area research has learned to differentiate the fiscal functions and public policy objectives of redistribution and stabilisation and some contributions also identify a distinct role for federal fiscal deficits in the United States during national recessions (that is, symmetric shocks). The critical but controversial issue is whether Europe's monetary union may achieve a comparable degree of stabilisation without a significant move towards fiscal federalism.

Dodging this vital issue, the European authorities have instead pushed past the fourth fork and ahead towards the fifth fork in Figure 1, hoping that financial integration might offer an easier avenue to progress than fiscal integration. We have discussed various deficiencies of empirical optimum currency area research on this count that seem to lead to an upward bias in estimates of potential stabilisation achievable through private rather than mutual public insurance channels. We will have more to say on this question and on the principal issue of whether capital market integration may be a substitute for fiscal integration when we return to the more fundamental shortcomings of optimum currency area theory in Section 6 below.

After this review of the evolution of optimum currency area theory and empirical research and related policy debates, the next section will investigate the euro experience so far. The aim is to identify the key causes of the euro area's poor performance: why has the euro failed to deliver on its promises? The subsequent Section 5 will then discuss how our crisis diagnosis matches the general framework and direction of optimum currency area-inspired research and policy advice derived from it. We will identify a serious mismatch

between optimum currency area theory and reality that should encourage a refocusing of reform debates.

Before moving forward to identifying the chief design flaws in the euro regime, we should emphasise here that, to an important extent, policy blunders surrounding the euro crisis were also due to another factor, human error. It is undeniable that the key European authorities made crucial blunders. As an example, once again very prominently featuring optimum currency area thinking, we may recall what Otmar Issing, the ECB's chief economist from 1999 until 2006 (who from 1990 until 1998 held the same position at the Bundesbank) had to say in 2005 on the 'optimality' of Europe's monetary union as an integrated economy that can get on well with a common currency and ('one size fits all') monetary policy:

On the eve of the changeover, I wrote a commentary on diversity and monetary policy in the euro area. To the question whether a single one-size monetary policy could fit all parties involved – be they national entities, social partners or economic actors – my answer was: 'One size must fit all'. The political decision on the creation of EMU had resolved all discussions on whether monetary union should precede or follow political unity and the fulfilment of the criteria for an optimum currency area. Today, in light of the evidence gathered so far in the euro area, I am more confident in saying: One size does fit all! (Issing 2005)

Herbert Stein is credited for pointing out that 'if something cannot go on forever, it will stop'. By 2005, it was plain to the naked eye that Europe's monetary union was experiencing escalating divergences and the build-up of corresponding intra-area imbalances that could not possibly continue forever. The ECB's chief economist Otmar Issing was not alone among key European authorities who were oblivious to or in denial of the facts (to be explored in the next section). While human error and misguided policies undoubtedly played a role, as Sandbu (2015) argues, the next section will highlight that the euro's architecture itself is largely to blame for the euro's travails. We will identify the key regime flaws and discuss how they have interacted with policy blunders.

4. The euro experience so far: identifying what has really gone wrong

Why has the euro failed to deliver on its promises? Why has the performance of Member States been so diverse? Are asymmetric shocks, as featuring so prominently in optimum currency area-motivated research, really to blame for such starkly diverse outcomes in performance? Are idiosyncratic policy blunders the root of the matter while the euro policy regime is adequate, so that the whole euro reform debate is largely beside the point? Or to what extent is the euro regime itself at fault, ‘incomplete’ or flawed, and how so? This section argues that the euro regime rather than policy blunders is the issue and that the euro regime has ‘underperformed’ especially in preventing intra-area divergences and countering common shocks, while proper asymmetric shocks may be no more than a side show. The subsequent section will delineate the implications for euro policy reform, calling for a refocusing of the debate.

A common interpretation of euro area experiences, even among observers that acknowledge the need for a central fiscal capacity, is to blame country-specific shocks for the euro’s travails. It seemed to be a crisis of Greece, Ireland, Portugal, Spain and Italy, but which somehow threatened the whole monetary union. Observing that some countries have fared far worse than others in the past ten years, it is indeed tempting to conclude that the euro area’s foremost challenge has been that of coping with asymmetric shocks. To assess how the euro area’s (poor) performance fits into the optimum currency area framework it is crucial to properly identify the nature of the shocks that the euro area has confronted. It is perhaps tempting, but fundamentally misguided simply to interpret the ‘surge in economic divergence since the crisis’ as evidence of asymmetric shocks (see Nikolov 2016, for instance).

To begin with, it should be uncontroversial to say that Europe’s monetary union was hit by two negative common shocks. The first occurred early on, namely the 2001 global slowdown. It arose in the context of the US dot.com bust, after Europe had previously received vital external support from the dot.com boom in getting the euro off the ground. The second, far more important one occurred around the time of the euro’s tenth anniversary, the 2008–2009 global financial crisis.

In principle, global recessions and crises like these two episodes come as close to the optimum currency area concept of a ‘symmetric shock’ as it gets. But even common and principally symmetric shocks can affect different countries rather differently. In terms of optimum currency area theory country heterogeneity would be the foremost candidate to get asymmetric outcomes from common shocks and, in practice, heterogeneity will inevitably always be

a factor to some degree. To blame diverse outcomes across the euro area on this factor is well in line with the widely-held pessimistic view that Europe is far too heterogeneous to live under a common currency anyway (Feldstein 1992, 1997).

We disagree with this view and we will argue that the most important conditioning factor was not country heterogeneity, but the dysfunctional euro regime. One issue is whether countries are in similar cyclical and financial positions when a common shock hits. Another issue is whether the euro regime tends to automatically dampen or amplify any divergences inside the currency union once they arise. For instance, if wage trends in Germany fell behind national productivity growth and the ECB's 'price stability norm', would the euro regime tend to counter such a development or further depress wages in Germany? If some market mechanism automatically counters divergences, quick rebalancing might result. If not, this would require corrective policy moves instead. One would need to explore whether certain policy choices may have either dampened or amplified divergences and either stabilised or destabilised the union overall.

We will investigate these issues in what follows. We will highlight how pre-crisis divergences, in conjunction with inadequate responses to the two aforementioned common shocks, have shaped the euro area's overall performance, and how the interplay between these developments and other regime deficiencies endogenously caused and amplified intra-area divergences. This is how common shocks came to produce such asymmetric outcomes across the union.

To many contemporary observers the euro's first – pre-2008 – decade appeared to be successful. EU Commissioner for Economic and Monetary Affairs Joaquín Almunia proudly declared in a foreword to the official *Euro@10* success story volume that:

A full decade after Europe's leaders took the decision to launch the euro, we have good reason to be proud of our single currency. The Economic and Monetary Union (EMU) and the euro are a major success. For its member countries, EMU has anchored macroeconomic stability, and increased cross-border trade, financial integration and investment. For the EU as a whole, the euro is a keystone of further economic integration and a potent symbol of our growing political unity. And for the world, the euro is a major new pillar in the international monetary system and a pole of stability for the global economy. (Almunia 2008)

Seen in the context of the global boom of the 2000s, the euro area's performance was hardly stellar, merely mediocre. According to Martin Wolf, 'the eurozone was the sick giant of the world economy' (Wolf 2007) during 2001–2005, an aggregate outcome that owed much to Germany's (and Italy's) poor performance. But at least the euro seemed to prove its doomsayers wrong.

Below the surface, however, growing intra-area divergences and imbalances were building up, creating the very vulnerabilities that gave way in the acute crisis of 2008 (Bibow 2003, 2004a, 2005, 2006a, 2006b, 2007a). The Lehman event in the United States provided the external trigger, but the causes of the euro crisis were homemade. The emerging drawn-out crisis that showed its first unmissable flare-ups in global financial markets on 9 August 2007 made the euro's second decade truly cataclysmic, featuring numerous near-death moments, eventually followed by a sluggish and incomplete recovery.

In many ways, the euro's travails had already started in the early 1990s with the Maastricht Treaty (Bibow 2001). Not only did the EMS crises of 1992–1993 temporarily create havoc in European currency and economic affairs (Hefeker 1994), but more importantly, euro aspirant countries, in the spirit of Maastricht, were also embarking on a joint fiscal austerity crusade at that time. Providing a foretaste of things to come, growth crumbled, leaving countries struggling to cut deficits to meet the 3 per cent mark that was to decide the fate of the euro-to-be. The initially foreseen starting date in 1997 was missed. Timely global spillovers from the US 'dot.com' boom and US dollar appreciation then enabled 11 aspirant countries luckily to meet the 3 per cent mark at the last minute for the euro launch to go ahead in 1999. Establishing a (Maastricht regime) pattern, the euro area showed great trouble generating sufficient domestic demand and became over-reliant on external demand for its growth.

The 1990s revealed another foreshadowing of things to come, divergence. There were two early drivers of intra-area divergences. First, the euro periphery received a boost to asset prices and economic growth owing to interest rate convergence towards lower, German levels. Traditionally enjoying lower interest rates than the rest, Germany on this occasion felt the full brunt of the Bundesbank's slow-motion monetary easing. Second, in addition to persistent austerity embarked on in 1992, starting around 1996 Germany ordered itself a drastic dose of wage repression (Flassbeck 1997, 2007). The policy mix of fiscal austerity cum wage repression lastingly undermined domestic demand in Germany. Germany came to solely rely on (net) exports for its meagre growth and persistently underperformed the euro 'periphery'.

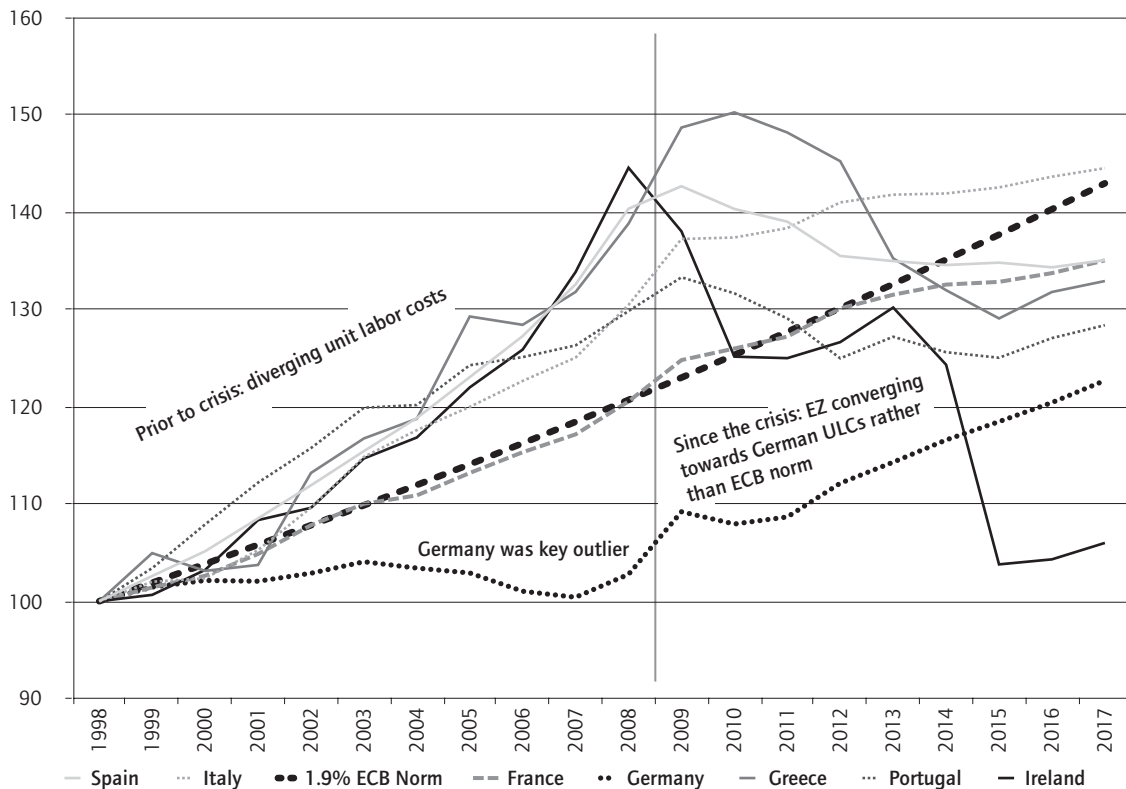
It is a myth that Germany had to 'restore' its competitiveness by repressing wages and unit labour costs. Only the former East German economy had a competitiveness problem because wages, but not productivity, had quickly converged to West German levels after unification, resulting in ample intra-German transfers. The former West German economy had lost competitiveness in the early 1990s, too, but did not have a competitiveness problem. Persistent inflation differentials in (West) Germany's favour in the 'hard EMS' era had left intra-EMS competitiveness positions seriously out of kilter by the time of Maastricht. DM appreciation brought about through the 1992–1993 EMS crises restored balance in Europe. But only temporarily, as it turned out.

(West) Germany had been used to operating with a competitive advantage due to its favourable inflation differential. First under the Bretton Woods regime

and later under the hard EMS, the German model of export-led growth had powered its economy (Bibow 2017). A persistent bias in aggregate demand shapes economic structures accordingly, giving rise to an over-sized tradable goods sector. Losing its former competitive advantage as the rest of Europe converged to German inflation levels – as was required by the Maastricht Treaty! – may have felt like an undue loss in competitiveness, but it was not. In the event, Germany’s knee-jerk reaction was to order itself wage repression on top of unconditional austerity, a fateful reaction that laid the groundwork for the severe crises that unhinged the euro area, starting in 2008.

Already the earlier global slowdown of 2001 (that in the euro area’s case had followed a rather brief boom towards the end of the 1990s) posed a challenge. The global slowdown was a common shock that dealt the euro area its first recession early on in life. Recovery from it not only proved sluggish, but intra-area divergences got a lot worse going forward. The 2000s saw intra-area divergences and corresponding imbalances soar until they reached breaking point and started unravelling in 2008–2009.

Figure 2 ECB's stability norm and diverging unit labour cost trends



Source: European Commission, AMECO.

The primary cause of trouble was that Germany, accounting for close to 30 per cent of the euro area economy, continued to suffocate domestic demand and its economy. By persistently applying fiscal austerity cum wage repression Germany famously turned itself into the ‘sick man of the euro’ in the run-up to the crisis (Dustmann *et al.* 2014). Here it is important to realise how the euro policy regime amplifies divergences once they get off the ground. The regime had not only failed to prevent the emergence of divergences that went back to the 1990s, but in the 2000s it further fired the build-up of intra-area imbalances and fragilities. Both monetary and fiscal policies played a part in this.

The ECB’s primary policy mandate is to maintain price stability in the euro area as a whole. Its monetary policy stance therefore is geared towards the euro area ‘average’ economic situation. Contrary to Mr Issing’s above quoted assessment of 2005, the ECB’s one-size monetary policy did not fit all euro area members equally well prior to the crisis. In fact, it may not have fit any of them. Its policy stance was persistently too tight for stagnant Germany, but too loose for the bubbling periphery. Whether or not its stance was appropriate ‘on average’, it reinforced stagnation in Germany while adding fuel to the fire on the periphery. Below-average inflation in Germany meant that real (inflation-adjusted) interest rates were relatively high and financial conditions tighter than elsewhere.² There were fears of a ‘credit crunch’ in Germany in the early 2000s. Credit expansion was lively, and became ever livelier, on the euro periphery. The euro fiscal regime, the asymmetric Stability and Growth Pact, only made matters worse. In stagnant Germany it triggered ever new austerity rounds and helped to keep the economy trapped in stagnation (Hein and Truger 2007; Mody 2018). It is ironic to suggest that Germany applied too little austerity and ignored the Stability and Growth Pact’s ‘excessive deficit procedure’ (EDP) in those years. Rather, by stubbornly trying too hard to balance its budget while repressing wages, Germany suffocated domestic demand. Countries that, unlike Germany, were not operating under an EDP faced no corresponding deflationary pressures. In some cases, fiscal easing may have helped to amplify bubbles.

In short, the regime deficiencies and policy mistakes that played out in response to the 2001 global slowdown were twofold: the macro policy-mix was insufficient for a more vivid recovery, while divergences were amplified further. Little can be expected from fiscal policy under the asymmetric Stability and Growth Pact regime. The aggregate fiscal stance resulting from independently determined national fiscal policies will only ever be optimal by accident. Mainstream economists may not see this as a problem, however. They tend to assume that monetary policy is always capable of making good for fiscal policy shortcomings and still establish an appropriate policy-mix. They would then have to blame the ECB for failing to deliver.³

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2. Applied to pre-euro ERM arrangements this argument is also known as the ‘Walters critique’. See Miller and Sutherland 1991.
 3. As some in fact did. See Alesina *et al.* 2001, Begg *et al.* 2002, and Gali *et al.* 2004, for instance. By contrast, the official view, not least the excuse provided by the ECB itself, would automatically put the blame on ‘structural problems’ and insufficient fiscal austerity. See Bibow 2003, 2004b.

Indeed, the ECB seriously misjudged the situation on at least two counts: one concerning the domestic inflation picture, the other concerning the international environment. After starting out at a very low level at the time of the euro's launch, (headline) inflation slightly exceeded the ECB's (original) 'below 2 per cent' price stability norm in the early 2000s. This was partly owing to the euro's earlier plunge, partly to the economic slowdown and partly to a peculiar euro regime phenomenon I have dubbed 'tax-push inflation'. Perversely, the slowdown created upward price pressures both by slowing productivity, boosting costs and core inflation, and through budgetary pressures that triggered increases in indirect taxes and administered prices, boosting headline inflation. Confronted with persistent upward target misses, whose causes it misread, the ECB was outstandingly slow in easing monetary policy in response to the slowing and then stagnant euro area economy (Bibow 2003; OECD 2002a,b).

This is where the global environment and US monetary policy enter the picture. The ECB's slow response not only held back domestic demand, it also stalled any export-driven recovery by inviting euro appreciation. The contrast with the Federal Reserve's policy provides the key. In response to the 2001 global slowdown and perceived deflation risks the US Federal Reserve quickly slashed its policy rate to record-low levels. The US authorities also made it clear at the time that a weak dollar was rather welcome. While the euro's plunge had challenged the ECB in the early years, euro appreciation came to pose a fresh challenge of another sort.

US dollar depreciation from 2002 until the Lehman bankruptcy effectively sidelined Europe's EMU in the global boom of the 2000s. The strong euro meant that the euro area could not rely on (net) exports as its growth engine, which used to be 'the German model' (Bibow 2017).⁴ The euro area had to generate sufficient domestic demand growth instead – and did a very poor job of it.

In its first decade the euro area's current account position was roughly balanced. When debates about surging 'global [current account] imbalances' heated up, the EU authorities excused themselves from any responsibility. They claimed that the euro area was not a party to those global imbalances and hence did not have to play a part in their resolution either (Bibow 2007b). They were found to be mistaken soon enough. Europe's banks emerged as key players in enabling bubbles and imbalances both in the region and globally (see Borio and Disyatat 2011).

Internally, while domestic demand in Germany was stagnant for many years, the country gradually turned über-competitive as unit labor cost trends

4. With Otmar Issing shaping the economic analysis of the ECB, the bank appeared to have largely adapted to the German model. Jean-Claude Trichet said as much in an interview in 2004 expressing Euroland's 'normal' hopes for external sponsors of recovery: 'Growth starts with exports, then passes on to investment, and then to consumption. That is the normal sequence for Europe in this phase of the cycle' (Krosta and Major 2004).

persistently diverged downwards from the rest (see Figure 2). From 2002 to 2006 Germany literally grew on (net) exports only. The country's current account surplus surged while Germany's trade partners, especially on the euro area 'periphery', were running up rising current account deficits and foreign debts in the process (Bibow 2012).

If the euro area's macro regime had already proved sub-optimal in coping with the 2001 global slowdown, matters turned far worse with the onset of the global crisis. At the beginning, it was essentially a banking crisis caused by bursting price bubbles in Europe and the United States. Banking problems and a deep recession caused fiscal wreckage. Conveniently titled a 'sovereign debt crisis' this provided the excuse to collectively apply the SGP with brutal conviction as that would boost confidence and allegedly cause other miracles too. Instead, it destabilised Europe's MU even more, with markets zooming in on particular MS at a time and panic spreading throughout the MU that was lacking proper defences and unable to muster its collective will for anything else but austerity and wage repression (Mody 2018).

The failure of Lehman Brothers triggered a European banking crisis and the unravelling of grave regional imbalances that exposed the euro area's lack of proper macro defences. The euro area authorities' inaptness made matters worse. The euro area had failed to prevent the emergence of intra-regional divergences and imbalances. These were amplified by the euro regime, feeding into home-grown bubbles. The resulting crises turned Europe's EMU into a massive global drag that has hindered global recovery and more balanced global growth in the post-global crisis era. All along, the authorities misdiagnosed the situation, and their improvisations – prompted by acute crises and necessary to overcome regime deficiencies – generally did too little too late (Bastasin 2012).

Some euro area member countries' banks had large direct exposure to US mortgage risks. Other member countries were facing banking problems caused by their own housing bubbles, such as Spain and Ireland. German and French banks in particular had large credit exposures to both the United States and euro area partner countries facing the bursting of home-grown bubbles. Further troublesome banking exposures showed up in the new EU Member States. The chickens of naïve financial liberalisation were coming home to roost.

With the 'Single Market Programme' of the late 1980s, Europe embarked on financial liberalisation and deep market integration. European banks felt encouraged to roam freely across borders, both in the region and globally. The bigger banks became truly global in life. Alas, when trouble struck, they turned out to be national in death as the euro area had not put the necessary regional safeguards and backstops in place. In short, Europe had failed to integrate policies in line with markets (Padoa-Schioppa 1994, 2004). Banking problems of regional and global origin therefore hit national public finances, which proved too heavy a burden for some countries' public finances to shoulder on their own.

It became apparent that banks' and their national sovereign's liquidity and solvency are closely connected: banking losses weakened the fiscal outlook, any deterioration in the sovereign's credit rating, in turn, undermined the banks further, and so on. Banks depend on their sovereign as a backstop: the central bank can provide emergency liquidity while the fiscal authority can provide emergency recapitalisation. At the same time, sovereigns depend on banks as lenders and buyers of their bonds. These are the very – supposedly safe – sovereign bonds that feature as liquidity and critical collateral in modern banking (and shadow banking) business.

Euro area sovereigns effectively issue their debts in a foreign currency and lack a central bank by their side that can act as lender of last resort. This weakens both sovereigns and banks. In fact, the peculiar 'euro divorce' between the fiscal and monetary authorities (Goodhart 1998) proved to be the euro area's Achilles heel as the critical two-way dependency between banks and their sovereigns saw vulnerabilities quickly spread and escalate. The 'bank–sovereign doom loop' destabilised more and more euro area countries, prompting large-scale flight-to-safety trades and threatening area-wide contagion and euro breakup.

The second common shock hitting the euro area within 10 years of its birth also confirmed other regime shortcomings already identified in the earlier global slowdown: the euro area's aggregate fiscal stance and macro policy-mix proved seriously insufficient in effectively countering the demand shock. Once again, owing to pre-existing intra-area imbalances and fragilities, the common shock affected different Member States differently. And once again, not only the euro regime (rules) but also grave policy blunders (discretion) further aggravated the malaise. In the end, the peculiar euro divorce between the fiscal and monetary authorities that is at the root of the infamous 'doom loop' came to threaten area-wide contagion and the very existence of the currency union.

Excessive private rather than public indebtedness that had built up during the euro's first decade was at the heart of the matter; Greece was the outlier as excessive public debt was – exceptionally – part of the Greek problem from the beginning. Initially some limited fiscal stimulus was forthcoming in response to the unfolding economic collapse. But already in 2010, the Greek crisis gave birth to the official narrative of a 'sovereign debt crisis' that apparently called for a swift return to austerity across the continent. Entranced by the 'expansionary austerity' myth, the euro area authorities applied the euro's flawed fiscal regime with venom (see Alesina 2010; Guajardo *et al.* 2011; Perotti 2014; Blyth 2013).

The ECB long misjudged the challenge posed by the crisis. Its final pre-crisis interest rate hike occurred in July 2008, almost one year after stress had first emerged in global financial markets. Following Lehman's failure, it at first cut its policy rates faster than in 2001, but only to prematurely hike them again twice in 2011. While quite flexibly adjusting its liquidity support for banking systems, starting in August 2007, the ECB refrained from more aggressive 'quantitative easing' monetary policies as pursued by the US Federal Reserve and the Bank of England, for instance, until 2015 (Bibow 2016).

As a result, the euro area not only participated in the global financial crisis and Great Recession of 2008–2009, but, following a brief initial bounce-back in 2010, then experienced a second, long recession in 2011–2012 that made the euro area an outlier in the global recovery. Protracted regional recession was one issue, deepening intra-area divergences and correcting the resulting imbalances another. Euro crisis countries were ordered wage repression on top of fiscal austerity – the deadly mix that had gotten Germany sick prior to the crisis when Germany set out to ‘restore’ its competitiveness in the context of a global boom and regional bubbles. Under the yoke of the ‘Troika’ euro-crisis countries were now applying the same medicine jointly while no growth impulses were forthcoming elsewhere in the region. Unconditional austerity was declared to bolster confidence and growth. Wage repression was meant to facilitate ‘internal devaluation’ to restore the competitiveness of euro area current account deficit countries (Bibow and Flassbeck 2018).

In other words, by design, intra-area rebalancing was asymmetric and deflationary as no matching prescription for internal revaluation and domestic demand expansion was given to euro area current account surplus countries (chiefly Germany and the Netherlands). Instead, Germany was joining in the austerity campaign with élan, aiming at a (‘black zero’) balanced budget as well. Germany had inserted a ‘debt brake’ provision in its constitution in 2009 (Truger and Will 2013). As part of the Treaty on Stability, Coordination and Governance in the Economic and Monetary Union (TSCG), which entered into force on 1 January 2013, the euro area’s chief creditor country and hegemon pushed through the so-called ‘Fiscal Compact’. The Fiscal Compact essentially requires all countries to permanently pursue balanced budgets and anchor their zealous austerity ambitions in national legislation.

In addition to the austerity-cum-wage-repression rebalancing strategy, euro crisis countries were facing severely tightening financial conditions and a credit crunch as the euro divorce ignited the doom loop: interest rate spreads soared and banks deleveraged and curtailed lending to firms and households. Rising exports were the only lifeline that kept the euro area above water until 2013.

Mario Draghi’s famous promise to do ‘whatever it takes’ (made in London in late July 2012) and the ECB’s ‘outright monetary transactions’ (OMT) programme broke the contagion in financial markets and thereby helped to set the scene for the 2013 turnaround. Financial conditions slowly became more homogenous and monetary policy more uniform again. In response to declining inflation and acute deflation threats the ECB finally embarked on a more aggressively expansionary path in the summer of 2014. Its key policy rates were cut below zero and, in March 2015, its large-scale asset purchase programme was expanded to include public debt securities. These measures reduced interest rates area-wide to very low levels across the whole term structure. As a side-effect, the euro depreciated markedly, which further bolstered exports and the euro area’s external surplus.

In addition, fiscal policy turned from outright destructive to a more neutral stance in 2013. The European Commission effectively paused the Stability and

Growth Pact and allowed euro crisis countries some much-needed room to breathe. The ECB's more aggressive monetary easing measures had the welcome side-effect of reducing the interest burden on the public debt, thereby creating some welcome fiscal space. The euro area's recovery remained fragile and uneven until 2016. In late 2016 an improving global economy added external impetus, the recovery broadened and temporarily gained in momentum. Figure 2 above reflects the ongoing deflationary convergence towards Germany, leaving the ECB struggling and persistently undershooting its price stability norm.

By 2018, the euro area's recovery is still far from complete and crisis legacies loom large in numerous countries. Unemployment remains elevated in the euro area and very high in crisis countries. As another weighty crisis legacy, some banking systems are labouring under high levels of nonperforming loans. Perhaps most ironically, given 25 years of austerity-obsessed trying, public finances are in far poorer shape today than in 1991: public debt ratios have surged far above the 60 per cent mark, the average public debt level prevailing in the 1990s and enshrined in the Maastricht Treaty. Meanwhile, public investment has been crushed to extraordinarily low levels. These are the perverse outcomes of a truly dysfunctional fiscal regime that has seen fiscal stabilisers turn into fiscal destabilisers in times of crisis.

We said at the outset that it was crucial to properly identify the nature of the shocks that the euro area has confronted so that we can correctly assess how its (poor) performance fits into the optimum currency area theoretical framework. The analysis in this section highlights that the euro area's experiences do not easily fit the concept of 'asymmetric shocks' that is the focal point of optimum currency area theory and empirical research, as well as policy debates. The asymmetric shocks appearing in optimum currency area theory cannot be prevented, only offset. Divergent developments have characterised life under the euro to be sure. But the main shocks that hit the currency union and that proved rather challenging were common and principally symmetric ones, while *other – principally preventable! – developments and the euro regime itself (as amplifier rather than stabiliser) were largely responsible for producing asymmetric outcomes.*⁵

Intra-area divergences that partly originated in pre-euro times sharply worsened under the euro because the euro regime amplifies rather than

5. We have focused here on the two main common shocks that have hit the euro area since 1999. One could add here China's (and eastern Europe's) integration into the global economy as a third – more gradually unfolding – common shock (see Goodhart and Pradhan 2017). This shock, too, produced asymmetric results, specifically by favouring German exports over those of other euro area countries. This was due to Germany's strength in capital goods, while other countries that are more specialized in the production of consumer goods were facing elevated competition from China. Germany's advantage stemming from the China factor just like Germany's advantage with regard to establishing regional supply chains that include eastern European countries (Storm 2016) called for a boost in German wages inside the euro area. The fact that actual wage trends were in the opposite direction helps to explain why intra-area imbalances in competitiveness and trade escalated as much as they did.

contains divergences and imbalances once they arise. Recovery from the mild 2001 global slowdown was conspicuously sluggish. Recovery from the 2008-2009 global crisis started only in 2013, then progressed sluggishly and unevenly for many years, and remains incomplete even today. Turning the corner involved pausing the Stability and Growth Pact, aggressively expansionary monetary policies shelving vulnerable public debts on central bank balance sheets to counter acute deflation threats and a huge external surplus. Europe's currency union came close to breaking point in 2012 and a latent risk of fresh instabilities and even breakup remains today.

In optimum currency area language, the euro area appears to be uniquely ill-equipped to counter symmetric shocks, including systemic financial crises, as well as unable to prevent the emergence and endogenous amplification of – principally avoidable! – asymmetric 'shocks' (rather: intra-area divergences and imbalances) and resolving their consequences. Plagued by deficient domestic demand growth and unchecked divergences in competitiveness positions, the euro area has proved ill-equipped to effectively counter and resolve crises resulting from these failings.

In light of the experiences under the euro discussed here, the next section will underline and elaborate on the euro regime's key shortcomings and then make the case for fiscal union, while Section 6 will look at the United States for design inspiration in that endeavour.

5. The euro regime's key shortcomings and the case for a euro fiscal union

The essence of the euro's failure and its underlying regime flaws, together with their respective post-crisis reform initiatives, if applicable, may be summarised as follows.

First, Europe pursued market integration without proper commensurate policy integration, a hazardous disjuncture that was felt most critically in the domain of banking. Unreasonable neoliberal faith in the 'self-regulating' powers of free markets is to blame here. The euro's launch unleashed a fresh wave of adventurous banking activities that seemed to serve the goal of integrating Europe's financial markets. Neither common oversight nor backstops were put in place. The ECB's role was merely to support the responsible national authorities. But the national authorities lost sight of their clients' adventurous cross-border activities. In short, no one was minding the store. The 'doom loop' revealed the divorce between monetary and fiscal authorities as the euro's Achilles heel. The 'Banking Union' initiative of 2012 was meant to overcome the doom loop.

Second, intra-area divergences in competitiveness positions and the corresponding build-up of imbalances remained unchecked until the latter reached breaking point and unravelled in acute crisis. The euro regime rests on the peculiar (German) view that keeping budget deficits contained is sufficient to prevent the emergence of serious imbalances and secure prosperity in the euro area, a view that has no foundation in economic theory (Meade and Weale 1995; Weale 1999, 2004). As part of post-crisis reforms and apparently reflecting a broadening of perspective, a so-called 'Macro Imbalances Procedure' (MIP) was established that is meant to prevent intra-area imbalances and support rebalancing in future. But the narrow German fiscal focus remains powerful. Germany tied itself to the mast of the euro ship with its 'debt brake'. The euro area's fiscal screws were tightened with the Fiscal Compact. In addition, Germany is pushing for restrictions on banks' holdings of sovereign debt and the establishment of a sovereign debt restructuring mechanism (Bénassy-Quéré, A. *et al.* 2018).

Third, coping with common shocks, stabilising domestic demand and the economy, and overcoming crises have all proved extremely challenging for the euro area. The 2001 global slowdown revealed insufficient stabilisation capacity even to deal with normal downturns. The global crisis of 2008–2009 and its aftermath have played out as a full-blown regional calamity that saw the euro area drifting towards the brink of euro breakup. The area's fiscal regime has proved severely counterproductive: destabilising in the short run and also harmful to long-run growth.

With its critical blunders, the ECB's monetary policy proved inadequate on both occasions. For long an anti-growth bias appeared to afflict the ECB's pursuit of its price stability mandate. It took severe (below) target misses and acute deflation risks – and a more symmetric interpretation of its mandate – to finally mobilise more aggressive monetary policy action in support of growth since 2014 (Mody 2018). Since 2007 the ECB and euro system have acted flexibly and creatively as lenders of last resort to banks and banking systems. In Europe's EMU central bank support of sovereigns is peculiarly hindered by ideology and the law. The divorce between monetary and fiscal policies is the euro's Achilles heel, the root cause of its systemic vulnerability (Goodhart 1998; see also Goodhart 1992, 2005 and Godley 1992).

In terms of the optimum currency area schemata depicted in Figure 1, our analysis suggests that the most critical macroeconomic policy issues do not concern the right-hand side below the uppermost fork, which represents the usual preoccupation and focus in the optimum currency area literature on asymmetric shocks, but rather the left-hand side: common or symmetric shocks. Accordingly, it may be misguided to seek the key to euro regime reform mainly on the right-hand side of Figure 1.

In light of experience so far the most critical macro policy issues for the euro area will probably remain on the left-hand side, specifically: (i) how a symmetric rather than asymmetric (anti-growth) monetary policy approach can be assured in future; (ii) whether establishing an appropriate fiscal stance in the euro area is best achieved through coordinating national fiscal policies or through some suitable system of fiscal federalism; (iii) how the fiscal union question is related to establishing an appropriate macro policy-mix; and (iv) how fiscal union may also best help to overcome the euro area's peculiar systemic vulnerability (the 'doom loop'), which has its source in the divorce between monetary and fiscal institutions.

While the focus of this study is on fiscal regime reform and stabilisation policy, examining the euro area's experiences makes it clear that fiscal regime reform alone will not be sufficient to guarantee better performance in future. The other key shortcomings already mentioned also need to be rectified. We will briefly elaborate on these non-fiscal regime shortcomings before focusing on the fiscal regime because they also have important fiscal implications and/or connections.

Regarding banking union, the EU/euro area is at least on the right track. A banking union should have been established in the 1990s together with the euro. Sharing a common currency and central bank are often equated with sharing common monetary and exchange rate policies. But a uniform transmission of the common monetary policy throughout the monetary union presupposes a high degree of financial integration. Especially in Europe banks are central to the financial system and financing economic activity. Establishing uniform regulations and harmonised supervision should have been part of the Single Market ideal of a level playing field. With the euro, not

only common supervision but also common backstops became a necessity. Arguably, one reason this did not happen at the time was to avoid the fiscal implications of such a move. Both a common deposit insurance scheme and a common resolution regime ultimately also require common fiscal backstops. Denial of this issue came to haunt the euro area in the crisis, as the ‘doom loop’ experience has made apparent.

The declared objective of the – belated – 2012 Banking Union project was to break the ‘doom loop’. Some progress has been made: a Single Supervisory Mechanism and a Single Resolution Mechanism were set up. But deposit insurance and the common fiscal backstops for deposit insurance and resolution are still missing. Procrastination on this front persists even as common supervision without common deposit insurance and fiscal backstops contradicts the principle ‘no taxation without representation’. Crisis legacies complicate the matter. Apparently powerful creditor countries firmly believe that euro crisis countries must shoulder their injuries alone and work off any crisis legacies before further ‘risk sharing’ in view of potential future crises might eventually become possible. Their denial and procrastination are hazardous. They might end up learning the hard way that failure to resolve these issues in time sustains systemic fragilities, which also increases their own vulnerability to future crises. As Banking Union remains incomplete, the doom loop is ready to come alive again.

The point to emphasise here, then, is that if Banking Union is meant to make Europe’s monetary union safer and more resilient, this will also require moving towards fiscal union. An essential aspect of the inherent banking-fiscal-union connection is the issuance of a common safe asset or ‘euro bonds’. A common safe asset is indispensable for a functional financial system. Euro bonds would provide the basis for a common term structure of risk-free interest rates, make banks safer and enable a uniform transmission of monetary policy. The absence of a common safe asset contradicts both the Single Market ideal of a level playing field and undermines the uniform transmission of monetary policy – apart from the fiscal aspect, the euro divorce, that is so vital to Banking Union.

Arguably, the euro’s most puzzling flaw is the absence of any safeguard for keeping intra-area competitiveness positions aligned. When European integration started after the Second World War memories of interwar ‘beggar-thy-neighbour’ competitive currency devaluations were still fresh. Awareness of the fundamental importance of preventing their recurrence was widely shared. From the beginning exchange rates were declared ‘a matter of common concern’. Europe took several steps to stabilise regional exchange rates. ERM membership was made a precondition for admission to the euro club. The introduction of the euro was the coronation of a 50-year project of stabilising regional exchange rates. Critically, abolishing national currencies does not abolish the risk of intra-area competitiveness positions running out of kilter. While generally moving more slowly than currency prices, diverging wage–price inflation trends represent a critical risk. If anything, abolishing exchange rates makes it even more important to have safeguards that can prevent such outcomes in the first place.

Therefore it is most surprising that this vital matter was apparently overlooked at Maastricht.⁶ No safeguards were put in place to enforce the regime requirement of keeping national unit labor cost trends aligned with the ECB's common price stability norm. Figure 2 shows that Germany's misguided mission to 'restore' its competitiveness was in stark conflict with this norm and regime requirement for convergence and cohesion. We discussed above how this grave misconduct on Germany's part was the root cause of intra-area divergences and imbalances that unravelled in crisis – developments that might be cavalierly misinterpreted as consequences of 'asymmetric shocks'.

It took a major crisis to convince the euro authorities that it was naïve to believe that keeping budget deficits below 3 per cent of GDP is all that it takes to prevent intra-union imbalances and secure convergence and union-wide prosperity. As part of the post-crisis reforms, a 'Macro Imbalances Procedure' (MIP) was established. Like the Stability and Growth Pact and Fiscal Compact, the MIP is asymmetric by design: current account surpluses of up to 6 per cent of GDP are acceptable, while the bar for deficits was set lower, at 4 per cent of GDP. If safeguarding balance is the issue, excessive surpluses are no less harmful than excessive deficits. Arguably, both limits are set too high to indicate 'excess'. The fact that Germany and the Netherlands have for many years run current account surpluses well above 6 per cent of GDP without facing any serious pushback proves that the MIP is not only flawed by design but also wholly ineffective.

Making the euro viable on this front requires recalling the very rationale behind the original understanding that exchange rates are 'a matter of common concern', which found its culmination in the euro's launch: beggar-thy-neighbour strategies undermine both the Single Market and the single currency. As anti-trust authority the European Commission can act against individual enterprises that undermine fair market competition. But neither the European Commission nor anyone else is minding the euro store when whole nations set out to do just that. The euro needs effective safeguards for keeping intra-area competitiveness positions aligned.

German unification showed how competitiveness imbalances result in automatic transfer flows in a monetary union that is also a full-blown fiscal union. The euro crisis showed how competitiveness imbalances inside a monetary union that is not a fiscal union can ultimately lead to (ex post) transfers through bailouts and defaults. Current account surplus countries accumulate wealth in the form of external claims. They may cherish the notion that their saving flows lead to productive investment in monetary union partner countries and hence convergence. Inside the euro monetary union financial markets tolerated the running-up of external debts on the part of current account deficit countries for longer than usual, only to panic once the thought

6. While establishing common supervision under the ECB's helm and euro exchange rate policy (that is, extra-union competitiveness) were part of the Maastricht negotiations (see James 2012), keeping intra-union competitiveness positions aligned somehow seems to have fallen through the cracks.

of default crossed their deluded minds. So far, this outcome has been avoided largely by the central bank flooding the system with liquidity and shelving troubles on its balance sheet. It is ironic that the very countries that are most adamantly opposed to a euro transfer union and any central bank support of public debt insist on national behaviour – the pursuit of persistent current account surpluses – that can only result in realising their nightmares (Bibow 2012).

In Section 7 we will focus squarely on stabilisation, but exclude redistribution, in our proposal for fiscal regime reform. Here we emphasise that side-stepping the issue of redistribution is futile unless effective safeguards are put in place that prevent the reoccurrence of divergences and imbalances, as seen building up prior to the last crisis.

Finally, the ECB, too, is part of the challenge of establishing an appropriate macro policy-mix, including under crisis conditions. The ECB started out with a marked asymmetry in its policy approach: always hyper-alert to (imagined) inflation risks but remarkably complacent about any deflation risks. Some researchers attributed this bias to the young central bank's wish or need to establish its anti-inflation credibility. I have argued elsewhere (Bibow 2004b, 2016) that the ECB inherited this bias from the Bundesbank (with Otmar Issing as chief incubation vessel). The Bundesbank's asymmetry, its famous anti-inflation zeal, was part of the 'German model'. The model used to work for (West) Germany and the Bundesbank because and for as long as others behaved differently, providing the export pull that allowed Germany to get along without symmetric demand management policy (Bibow 2017). The euro area's huge external surplus, which has emerged since the crisis, reflects by how much the euro area is reliant on external growth for its survival. It is also evidence of the fact that the ECB's contribution to the euro area's macro policy-mix and domestic demand has been woefully insufficient.

The ECB's original asymmetry of approach was one important factor that held back domestic demand in the euro area and prevented more robust recoveries from the 2001 global slowdown and the 2008–2009 global crisis. It is only since 2014, in view of severe (below) target misses and acute deflation risks, that the ECB has evolved and transformed its approach into a more balanced one. A symmetric monetary policy approach is vital for achieving an appropriate macro policy-mix. Some observers suggest that this may require reforming the ECB's mandate into a 'dual mandate' (akin to the US Federal Reserve; Creel and Saraceno 2011; Moghadam 2018, for instance). The euro experience has shown that the personalities of central bankers can make a huge difference under any given mandate. The ECB will have to maintain and nourish its newly-found symmetry in mind-set and approach going forward.

In the remainder of this study we will assume that adequate reforms and behaviours in the three related areas indicated here will be forthcoming and now focus on the controversial issue of fiscal regime reform.

The euro's fiscal regime is clearly dysfunctional in a number of ways.

Some observers remain preoccupied with fiscal discipline (Bénassy-Quéré *et al.* 2018). Their aim is to reinforce discipline through tougher rules and through markets. This interpretation mistakes symptoms – that is, deteriorating public finances – for causes of the euro’s travails. The euro can claim anything for its failure but a lack of ambition and effort as regards austerity. The euro area has not suffered from too little but from far too much austerity (Bibow 2004a; Mody 2018).

The euro fiscal regime is afflicted by a serious imbalance: an overemphasis on discipline to the detriment of coordination and flexibility. There is no proper coordination to speak of. By design, fiscal stance is a random outcome (Buiter *et al.* 1993; Allsopp and Vines 1998; Buti *et al.* 1998; Pasinetti 1998; Buiter 2005). Fiscal stance has been inadequate, if not outright counterproductive throughout. Insofar as proper asymmetric shocks have played any role at all so far, countries labouring under the current asymmetric regime have more likely than not lacked budgetary flexibility and hence received insufficient support from fiscal policy.

The question is whether it is realistically possible to achieve better outcomes through coordination of national fiscal policies without any integration, or what form and degree of fiscal integration, what system of fiscal federalism, might deliver superior outcomes. In other words, what kind of fiscal union should the euro area aim for at this point?

To begin with, fiscal union involves more than just putting constraints (discipline) on national fiscal policies. Fiscal union means that fiscal functions and responsibilities are centralised in the form of a common budget to some degree. For the euro area, which consists of sovereign nations characterised by complex and diverse government structures, deciding on the matter of fiscal centralisation versus decentralisation is not straightforward. The EU’s ‘subsidiarity principle’ provides some guidance, which says that only those functions should be transferred to the federal level that cannot be taken care of equally well at lower levels of government. The Maastricht Treaty identified and codified the currency sphere as a domain for superior federal solutions. And the common currency, as engine of joint prosperity, was supposed to foster political unity as well. What kind of fiscal union could suitably complement the ‘incomplete’ euro monetary union?

In general, governments have spending, regulatory and taxation responsibilities. According to Musgrave (1959), public finances serve three broad functions: allocation, redistribution and stabilisation. In principle, a euro fiscal union could encompass all three functions.

In fact, from early on, European integration has featured some tentative centralisation of allocative and redistributive functions. Shared public control of the coal and steel industries provides an example of the former, the structural and cohesion funds exemplify the latter. The stabilisation issue featured in the requirement that Member States must treat exchange rates as a ‘matter of common concern’. Note that the approach taken was purely

passive: Member States should avoid destabilising the union. The current fiscal regime follows the same approach. By ‘keeping their own fiscal house in order’, Member States will, presumably, avoid destabilising the union. Any active role for either centralised or coordinated (national) stabilisation policies was missing prior to the introduction of the euro, which put the ECB in charge of countering common (or ‘symmetric’) shocks affecting the euro area economy.

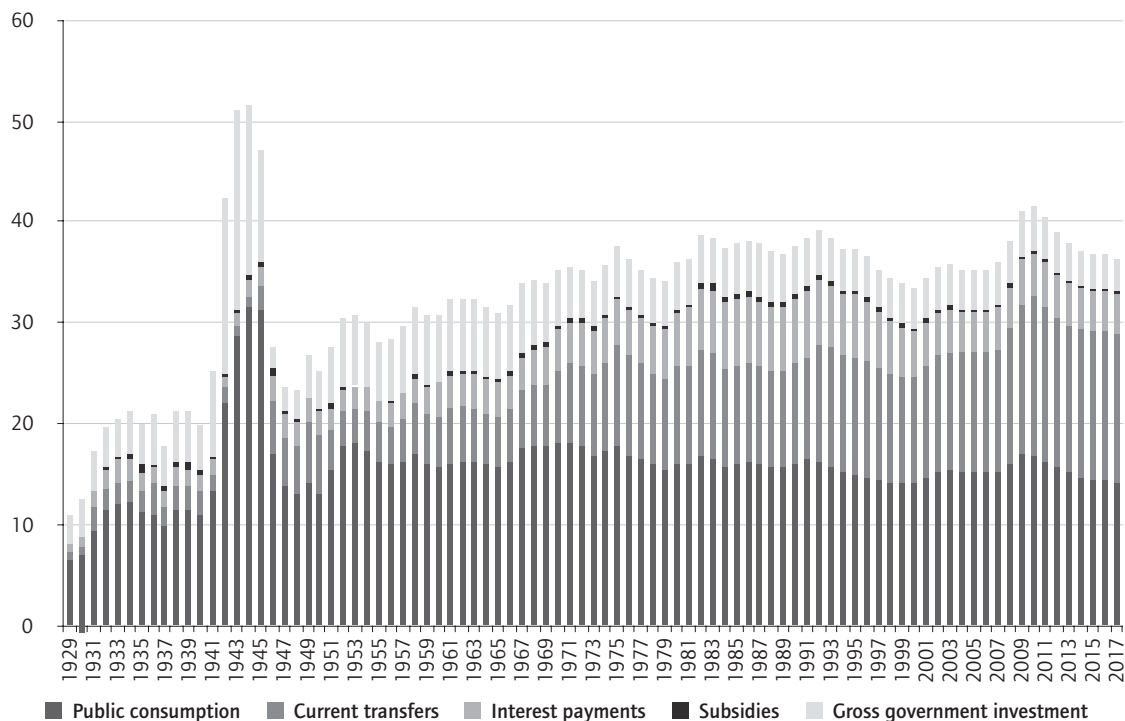
Today there is strong resistance against extending federal redistribution between Member States beyond existing levels, as currently practiced through the EU budget. A federal allocative role regarding the joint provision and sharing of common public goods would seem to provide a very good case. But moving forward in this direction will probably also meet resistance if benefits were perceived as being shared inequitably among Member States. It is for these fears – fears of a euro ‘transfer union’ – that we will now try to zoom in on the stabilisation function of a reformed euro fiscal regime. How can a more effective stabilisation mechanism be implanted in the euro regime body that meets the subsidiarity principle and avoids a transfer union?

In the next section we will seek inspiration from the US fiscal regime, a functioning monetary union.

6. Identifying lessons for Europe's EMU from US fiscal union⁷

Overall, the size of the public sector is somewhat smaller in the United States than in western European countries today. At 38 per cent of GDP, US general government spending is below the OECD average of 40 per cent (Figure 3), whereas in western Europe it ranges from the low 40s to the mid-50s. America spends significantly more on national defence. Western Europe has a larger, more generous welfare state: Europe's acclaimed 'social model'. Measured in terms of government contribution to GDP, the US government contributed 17 per cent to GDP in 2017, whereas in the euro area the corresponding share for final government consumption and gross capital formation was 23 per cent of GDP.

Figure 3 General government expenditures since 1929 (percent of GDP)

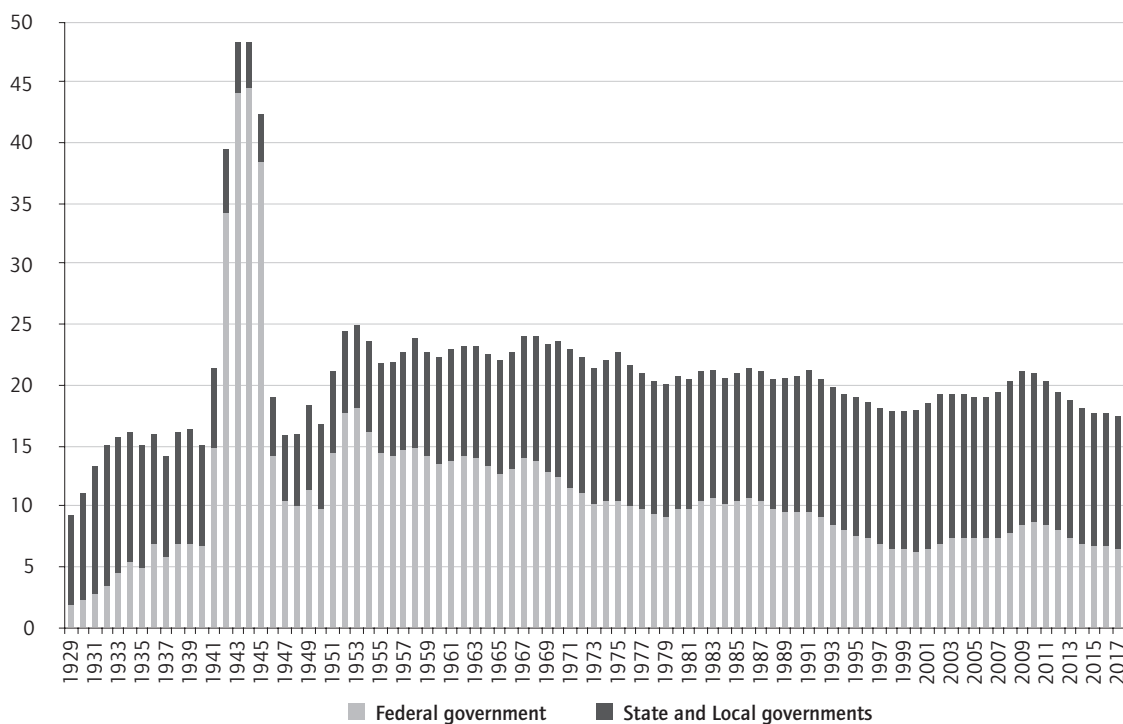


Source: Bureau of Economic Analysis.

7. On drawing lessons from US history for European fiscal federalism see, for instance, Inman and Rubinfeld 1992; Bordo and Jonung 1999; Bordo *et al.* 2011; Henning and Kessler 2012; Kirkegaard 2015.

US fiscal federalism has evolved over time. Historically, the United States has had highly decentralised fiscal arrangements. The federal government's share was less than one quarter of total government final spending in 1929 when the federal government contributed less than 2 per cent to GDP. At that time local governments provided the lion's share of government spending, while state governments, too, played only a minor fiscal role (Figure 4; BEA time series consolidate state and local government).

Figure 4 Federal versus state and local government final demand since 1929 (percent of GDP)



Source: Bureau of Economic Analysis.

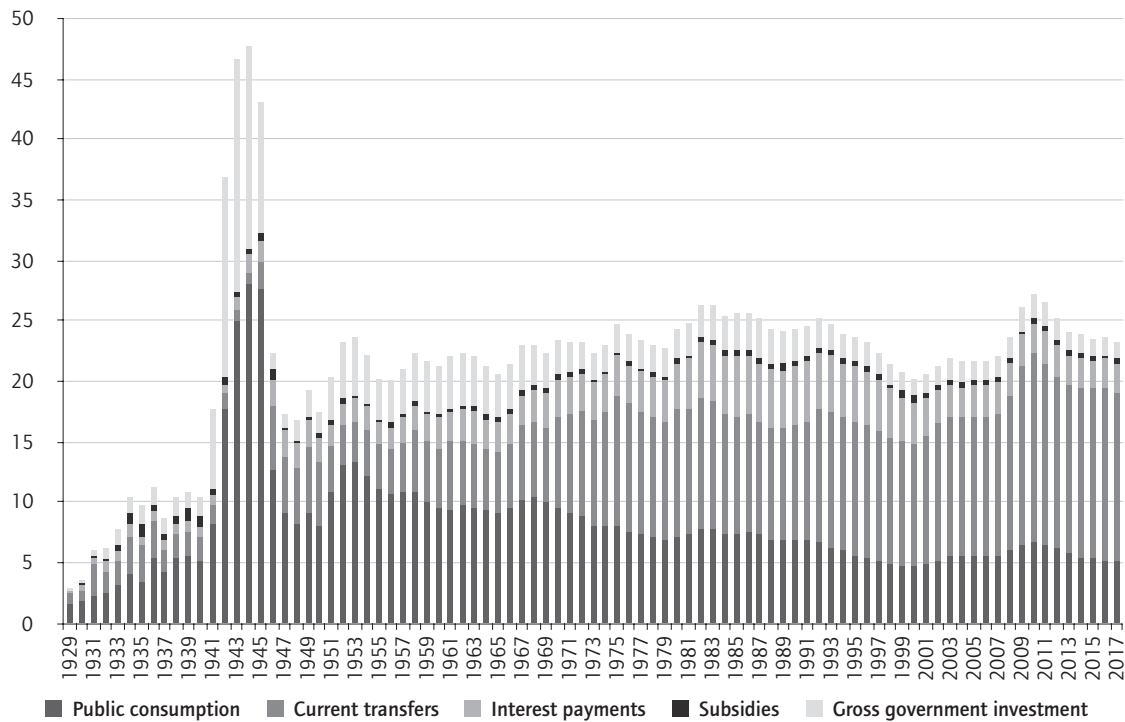
The Great Depression and New Deal of the 1930s changed the US public sector landscape decisively. The federal government expanded greatly, both absolutely and relative to state and local governments, as it launched its New Deal policies and took on new responsibilities, specifically federal social security programmes (Rockoff 1998). The Great Depression also brought increased centralisation of revenues and expenditures by the states relative to local governments as states took over public responsibilities from troubled local municipalities (in primary and secondary education, for instance). Prior to the Great Depression the states' share in total state and local government revenue and expenditures was roughly one quarter. Local governments were highly dependent on property tax revenues, which plunged in the Great Depression. State governments introduced general sales taxes as an emergency revenue source, and the state share surged by over 20 percentage points in the 1930s (Coen-Pirani and Wooley 2018).

Overall, the Great Depression and New Deal had a profound and lasting impact as US federalism, which

moved from a system of ‘coordinate’ (or ‘dual’) federalism, in which the various levels of government function in relatively independent spheres, to one of ‘cooperative’ federalism, in which there is much more sharing of fiscal functions and greater interplay among levels of government in the management and funding of public programs. (Wallis and Oates 1998: 156)

Federal grants to state and local governments – vertical transfers – started to play a sizeable role (Figure 5).

Figure 5 Federal government expenditures since 1929 (percent of GDP)

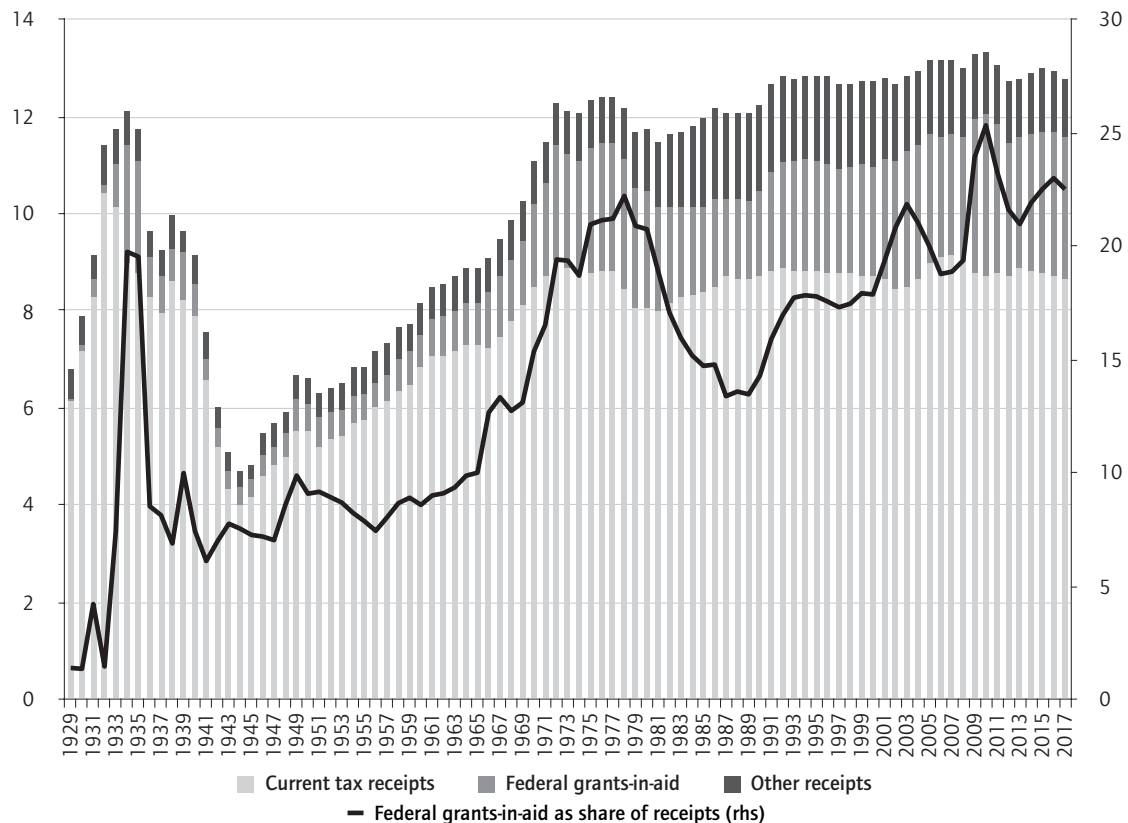


Source: Bureau of Economic Analysis.

US fiscal federalism continued to evolve in the post-war period. As a share of state and local revenues, federal grants rose from less than 2 per cent in the late 1920s to an over 20 per cent share in the 1970s (Figure 6). The rise in vertical transfers has been part of a broader rise in government transfer payments as a share of general government spending. The establishment of Medicare/Medicaid programmes in the 1960s were an important factor. In the US system of fiscal federalism transfers partially reach households directly from the federal level and partially from state and local government budgets (but may still be partially funded through vertical transfers at the federal level).

Moreover, through either mandates or incentives, federal policies have also played an important role in raising state spending from own revenues. This has been particularly the case in the areas of education, health and public welfare.

Figure 6 State and local government current receipts since 1929 (percent of GDP)



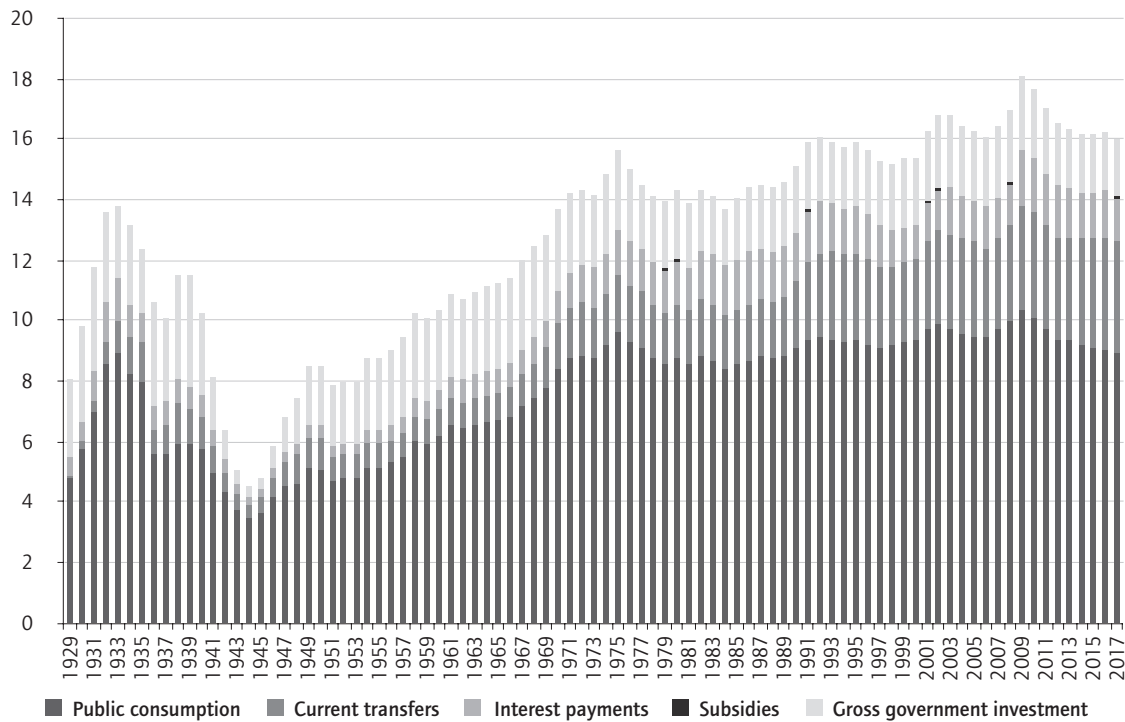
Source: Bureau of Economic Analysis.

Compared with the landscape prior to the Great Depression, the states have ultimately gained most prominence (Teaford 2002; Baicker *et al.* 2012). Following the very steep but temporary rise in importance of the federal government during the Second World War, since the 1950s the federal government's contribution to GDP has been on declining trend. Reflecting both fiscal decentralisation⁸ as well as a significant decline in military spending since the 1990s – the so-called ‘peace dividend’ – the federal government contributed only 6.5 per cent to GDP in 2017. The contribution of state and local governments was roughly 60 per cent larger in the same year. Starting from a low point during the Second World War of only 4 per cent of GDP, state

8. This development was not unique to the United States. A number of studies have found that since the 1980s there has been a trend towards decentralisation that is viewed as at least partly driven by democratisation (Arzaghi and Henderson 2005; Panizza 1999).

and local governments' contribution had roughly tripled by the 2000s, which was followed by a mild decline in recent years to just below 11 per cent of GDP in 2017. On the other hand, current transfers constitute a much smaller share of their expenditures compared with the federal government (Figure 7).

Figure 7 State and local government expenditures (percent of GDP)



Source: Bureau of Economic Analysis.

How exactly does fiscal federalism contribute to stabilising the US monetary union? Measuring the effectiveness of fiscal stabilisation is complicated by the fact that stabilisation and redistribution are inherently intertwined in the US system. The US federation, unusually, does not include any explicit (regional) equalisation transfers of the kind exemplified by the EU cohesion funds. In the United States, regional redistribution arises together with risk sharing across regions and stabilisation of shocks as a by-product of the centralisation of revenues and spending, specifically through the (progressive) federal income tax and the social security systems.

Different empirical methodologies are applied to separate the redistribution and stabilisation effects. Standard estimates suggest that fiscal integration stabilises only around 15 per cent (or less) of asymmetric income shocks, which is less than what common estimates suggest derives from risk sharing through capital and credit markets in the United States and comparable, if not inferior, to fiscal stabilisation effects in Europe.

It would be rash to conclude from these – severely biased (see Section 3 above) – results that national fiscal regimes might already provide sufficient stabilising powers in the euro area, while what Europe is really lacking is deeper financial integration. This line of argument would seem to have inspired the Banking Union cum Capital Markets Union initiatives, so that Europe’s monetary union can finally catch up in terms of private risk sharing through capital and credit markets.

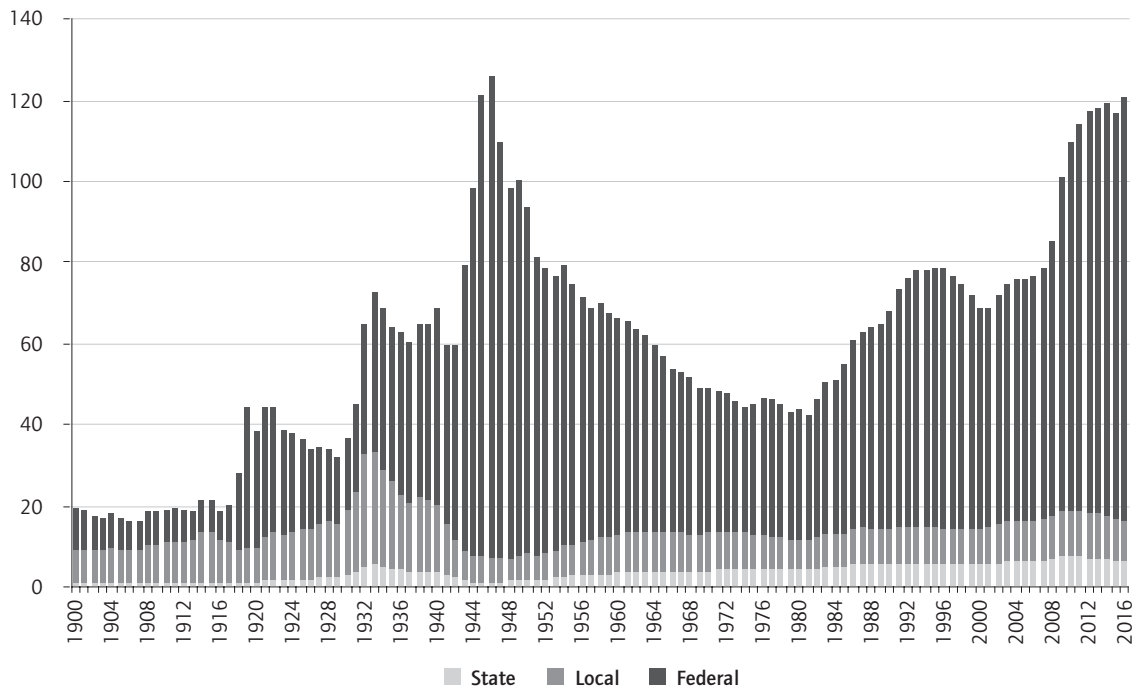
This reading of the evidence constitutes a fundamental misinterpretation of how fiscal federalism helps to stabilise the US economy. State and local government finance are at best neutral in their cyclical impact, but more likely procyclical (Krugman 2008). State unemployment insurance systems, which feature rainy-day funds as well as federal credit lines and contributions, are the only countercyclical pillar at the state level. The key stabilising factors of the US dollar monetary union are the unconstrained flexibility of the federal budget and vertical transfers within the US system of fiscal federalism. In principle, vertical transfers from the federal government are structural and rather unresponsive to shocks – unless the federal government, at its discretion, decides to adjust them (Blinder and Zandi 2010, 2015; Blinder 2016; see also Poghosyan *et al.* 2016).

The Global Financial Crisis and Great Recession provided an important recent example of such a discretionary move. Not only did the federal government greatly boost its spending despite plunging tax revenues, but exceptionally, there were also large additional transfers (grants-in-aid; see Figure 6) from the US federal budget to the states that were included in the 2009–2010 ‘Obama (fiscal) stimulus’ package (officially the ‘American Recovery and Investment Act of 2009’, ARRA). Another stabilisation mechanism is derived from the exceptional extension of unemployment insurance benefits by the federal government. More broadly, when all financial transactions between the central government and all residents of a given state are considered, which partly respond automatically to shocks (the automatic stabilisers) and may partly arise from discretionary policies, as just described, then, overall, net fiscal transfers are both large and rather sensitive to shocks, especially common shocks (see Figure 6; Dreyer and Schmid 2015; Dadak and Matkovskyy 2018). Effectively, the federal government takes on additional debt on behalf of the states to contain their rising indebtedness in a downturn and stabilise the economy.

And that is the crucial point: the US monetary union is equipped with a fiscal regime that is far superior in countering common shocks than Europe’s monetary union. The evolution of US public debt at the different levels of government reflects the essential point: it is primarily the federal debt that increased sharply in the aftermath of the crisis, while lower-level government debt was not only low to begin with but also remained fairly stable (as a share of GDP; see Figure 8). Both automatic stabilisers, particularly the federal income tax, and discretionary federal spending decisions, including the ARRA grants-in-aid to states and the extension of unemployment benefits, were responsible for this outcome. The point is that state and local governments in

the United States essentially follow ‘balanced-budget rules’ or, more precisely, the ‘golden rule of public finance, which requires them to balance their current budgets, while excluding debt-financed public investment, effectively forming a separate capital budget.’⁹

Figure 8 Public debt at federal, state and local levels since 1990 (percent of GDP)



Source: https://www.usgovernmentdebt.us/debt_deficit_history (based on US Bureau of Census and other sources).

Concentrating any recession or crisis-driven rise in public debt at the federal level is crucial because, in contrast to sub-federal government debts, US federal public debt faces no liquidity risk: the US Treasury is partnered with the Federal Reserve. This vital fiscal–monetary axis of power at the federal level not only enables the federal government to establish an appropriate fiscal stance, but also empowers the central bank to suitably complement the macro policy-mix without obstacles. Especially in the recent crisis episode, the Federal Reserve went far beyond its conventional monetary policy response to cyclical downturns and purchased federal debts *en masse*, thereby depressing both federal funding costs and easing financial conditions across the board. By providing the basis for a term structure of risk-free interest rates the federal

9. We are simplifying here to underscore the key point. In practice, U.S. state and local budgets show great diversity (Poterba 1994, Inman 1997, 2003). While some states and localities follow versions of the “golden rule” others use “pay-as-you-go” financing for capital projects and often have dedicated revenue streams for them. At about 23 percent of state GDP the State of New York is at the high end of debt ratios for state and local government debt, Wyoming has less than 5 percent. The weighted average for all state and local debt combined is roughly 15 percent of GDP.

debt also plays a crucial role in the uniform transmission of monetary policy in the US dollar monetary union.

In the United States, as elsewhere in federal systems, lower-level governments do not have the luxury of a central bank standing by their side. At the sub-federal level of government, the divorce between fiscal and monetary policies is a commonplace fact. As a result, sub-federal governments are generally far more vulnerable, which is why state and local public debt needs to be strictly contained and kept at low levels (Goodhart 2007). Discretionary fiscal transfers as part of the ARRA were aimed at limiting the rise in state debt or, more precisely, the fiscal crunch that balanced-budget rules – established to maintain low levels of debt – would otherwise have triggered.

The US federal government provides another key national safety net that ameliorates the vulnerability of sub-federal governments: it fiscally backstops the US banking and financial system (Goodhart and Lee 2013). Bank deposits are insured by the Federal Deposit Insurance Corporation (FDIC), which is backstopped by the US Treasury. Also, if the need arises, the federal government can fiscally support the financial system beyond bank deposit insurance – as happened in the recent crisis in the form of the Troubled Asset Relief Program (TARP). Again, close cooperation between the federal treasury and the central bank may be called for in such situations. US banking problems may be regionally concentrated, but they are covered at the federal level.

In contrast to the euro area, in the United States, the fiscal–monetary axis of power that is the hallmark of sovereignty is firmly established at the federal level. Hence there is no ‘doom loop’ risk in the US monetary union: fiscal bailouts of troubled financial institutions do not hit state governments but the federal government only, which has a central bank by its side. Federal debts can therefore provide the US financial system (and global financial system) with a financial asset that is safe under (almost) all conditions.

In short, the secret behind the success of the US dollar monetary union is *not* primarily that there is extensive fiscal risk sharing in place to counter asymmetric shocks. Rather, the monetary–fiscal nexus at the centre of power of the federal government puts the United States in a position to effectively counter common shocks, including systemic financial crises, even grave ones such as the 2008–2009 global financial crisis, a crisis that lastingly unhinged the ‘incomplete’ monetary union on the other side of the Atlantic. Furthermore, whatever degree of stabilisation may arise through private risk-sharing mechanisms in this context through integrated US capital and credit markets, ultimately rests on federal fiscal backstops as well. The US financial system not only features financial integration, but also fiscal integration as its backstop. The two are not substitutes but complementary in the stabilisation of the US monetary union. The implication for Europe’s monetary union is that private insurance mechanisms through financial integration as aspired through the Banking Union cum Capital Markets Union are no substitute for fiscal integration. They can, at best, be a useful complement, but only if the necessary federal fiscal arrangements are put in place first. The contrasting experiences

in the euro monetary union and the United States during the recent crises clearly underscore this critical point (as Draghi 2018b appears to acknowledge; see also Goodhart 2005; Farhi and Werning 2012; Berger *et al.* 2018).

7. Redesigning the euro area fiscal regime: a fiscal union for the near and medium term

In the spirit of the optimum currency area literature it may be tempting to take the US system of fiscal federalism as benchmark or starting point in redesigning the euro area's fiscal regime. Dreyer and Schmid (2015) undertake a useful exercise in simulating the magnitude of net fiscal transfers that would have resulted (over the simulated period from 2000 to 2010) if the euro area had copied the US model of fiscal union. The sheer magnitude of estimated transfers makes it clear that the US model is not a realistic outlook for the euro area in the near and medium term, and perhaps not even for the long term. (See also Dadak and Matkovskyy 2018 for a similar exercise yielding broadly similar conclusions.) The aim here is to identify a minimalist but workable fiscal union that focuses on stabilisation.

Numerous studies have tried to separate the stabilisation and redistribution effects that are intertwined and embedded in the US fiscal regime (see Section 3). Strong political resistance to any fiscal redistribution beyond the current level in the EU budget suggests that fiscal regime reform proposals should focus on stabilisation only at this point.

While there is widespread agreement that the euro area needs to become more resilient to shocks, it remains controversial whether this requires establishing a central fiscal capacity and of what kind. Some observers continue to fear primarily that any implicit bailout guarantee provided through fiscal centralisation might undermine incentives for sound fiscal policies and end up in worsening national fiscal positions, thereby increasing the euro area's vulnerability to shocks and their impact. Whether or not one subscribes to this view, the prominence of the moral hazard argument in euro area debates is bound to curtail the size of any euro fiscal union and constrain its functions.

Even if it is accepted that the euro area needs some – as small as possible – central fiscal capacity to improve its resilience to shocks, there is also the other complication that the analysis above has highlighted. Quite falsely, a common interpretation of euro area experiences among observers that acknowledge the need for a central fiscal capacity is that country-specific shocks have been the euro area's foremost challenge, with heightened spillovers stemming from deepening economic and financial integration turning asymmetric shocks into a common challenge.¹⁰ From this perspective a logical conclusion is to move

¹⁰ For instance, the 'Four Presidents Report' of 2012 only refers to an 'EMU fiscal capacity with a limited asymmetric shock absorption function' (Van Rompuy *et al.* 2012). On the other hand, the 'Five Presidents Report' of 2015 discusses the issue of the euro area's 'fiscal

towards setting up a risk-sharing mechanism that features temporary fiscal transfers between euro area members, following the train of thought summarised on the right-hand side of Figure 1.

Various proposals exist for common unemployment schemes (see Dullien and Fichtner 2013; Beblavý *et al.* 2017, for instance). In light of significant national heterogeneity in labor market institutions and social policies, such a scheme may be easiest to design for the euro area as a ‘reinsurance’ arrangement: in this case national unemployment schemes remain in place, but fiscal transfers flow from countries currently with low unemployment levels to those currently with high levels. If arranged as horizontal transfers among Member States, their effect is to contain the rise in sub-federal public debt (or degree of fiscal austerity) in currently cyclically weak countries. To avoid explicit transfer flows stabilisation may also be facilitated through arrangements featuring ‘rainy-day funds’ and/or credit lines of some form.

The United States may serve as inspiration and model here. The US system of unemployment insurance features both rainy-day funds and federal credit lines. The United States also has a federal unemployment system that provides extended unemployment benefits, effectively backstopping state-run schemes in case of national recessions. These arrangements certainly play a role in how the US monetary union copes with both symmetric and asymmetric shocks and it would be hard to deny that they might also play a constructive role as part of any euro area fiscal union.

An upshot of our analysis here is that a common unemployment (re-)insurance scheme (or alternative fiscal risk-sharing arrangements) can be a useful supplement, but they are not a proper fix for the foremost deficiencies in the euro fiscal regime, as (proper) asymmetric shocks were only a sideshow compared with the challenges that common shocks have presented in the euro area’s experience so far.¹¹

In future the euro area must prevent internal divergences and imbalances that have left it extremely vulnerable and highly likely to experience asymmetric outcomes when common shocks hit. Setting up a common unemployment (re-)insurance scheme that would have triggered fiscal transfers to Germany in the 2000s (put forward as a selling point for such a scheme by Dullien und Fichtner 2013) when Germany was engaged in underbidding its euro partners

stance’ and also identifies a need for a better cushioning of ‘large macroeconomic shocks’; it mentions a ‘European Fund for Strategic Investments’, but also insists that the stabilisation function ‘should not lead to permanent transfers between countries or to transfers in one direction only’ (Juncker *et al.* 2015). While the ‘Juncker plan’ may perhaps be subsumed under the latter set of proposals, the issues of fiscal stance and common shocks continue to receive little attention in ongoing reform debates and the ‘doom loop’ appears to be a matter of country-specific shocks as well.

11. Simulation exercises suggest that the even a small common budget of 0.5 per cent of GDP or less would contribute significantly to the stabilisation of asymmetric shocks (Majocchi and Rey 1993; Pisani-Ferry *et al.* 1993; Italianer and Vanheukelen 1993; Arnold *et al.* 2018).

and destabilising the union, would be a truly perverse outcome: rewarding misconduct that is bound to undermine the union.

The analysis presented here suggests a different course of action: the key issue for the euro area is to set up a fiscal regime that can achieve a degree of stabilisation of common shocks comparable to that of the United States.

Recall that net fiscal transfers are large in the US fiscal union not only because they serve both redistribution and stabilisation. The point is that in national recessions and crises the federal government will implement discretionary fiscal stimulus measures on top of automatic fiscal stabilisers in place at the federal level, including federal support for state unemployment systems. In fact, it is *only* at the federal level that there is fiscal stabilisation in the United States, as balanced-budget rules pose a risk of procyclical fiscal policies at sub-federal levels of government:

No modern American president would repeat the fiscal mistake of 1932, in which the federal government tried to balance its budget in the face of a severe recession. The Obama administration will put deficit concerns on hold while it fights the economic crisis. But even as Washington tries to rescue the economy, the nation will be reeling from the actions of 50 Herbert Hoovers — state governors who are slashing spending in a time of recession, often at the expense both of their most vulnerable constituents and of the nation's economic future. (Krugman 2008)

The best way for the federal government to meet this risk is to act promptly and decisively, including discretionary transfers (grants-in-aid) to the states. A vital outcome is that the rise in public debt will then be concentrated at the federal level, where there is no liquidity risk, while the public debt landscape at the sub-federal level will typically remain fairly stable.

It is neither necessary nor possible to fully replicate the US model in Europe to achieve far better stabilisation outcomes in future. It is not necessary because euro area members have powerful automatic fiscal stabilisers in place already. It is not possible because the balance (in terms of relative size) between national and supra-national budgets in the euro area is bound to remain very different from the balance between federal and sub-federal budgets in the United States. One problem is the risk that national automatic stabilisers may be shut off at just the times they are most needed, as actually happened when common shocks hit in 2001 and 2008. The reason for this was not insufficient austerity 'in good times', but rather that the euro area's current fiscal regime – by design – prevents taking an appropriate fiscal stance. The regime has an in-built deflationary bias. Another problem was that the 'doom loop' not only resulted in shattered national public finances of countries directly hit, but also featured the infection of other member countries as contagion spread throughout the monetary union, which was lacking effective systemic defences.

Ultimately both problems stem from the peculiar divorce between monetary and fiscal policies in the euro area. *And the only effective solution to the matter is to pair up the ECB with a 'Euro Treasury' partner.*

The details of the 'Euro Treasury Plan' (ETP) to complete the 'incomplete' euro regime will not be repeated here (see Bibow 2013, 2014, 2015). The central idea of the ETP is very simple: to create a Euro Treasury as a vehicle to pool future euro area public investment spending and have it funded by proper Euro Treasury Bonds (ETBs). Member States would be apportioned their share of investment grants and also contribute their respective shares towards interest servicing on the common debt, both based on GDP shares. This apportioning of grants and interest service based on GDP shares would rule out a 'transfer union' by design. The ETP also respects the subsidiarity principle: it only creates a centralised capital budget while fiscal responsibilities in general remain national. In fact, apart from adding the Euro Treasury, the current fiscal regime could remain essentially unchanged as long as it is applied symmetrically. Member States would be required to abide by the rules of the Stability and Growth Pact and Fiscal Compact but applied to current public expenditures only, while national public capital expenditures would now form a separate capital budget funded through common Euro Treasury bonds.

Adding the Euro Treasury to the euro regime would kill many birds with one stone and make the euro viable. It would provide for steady spending on public investment and a steady stream of Euro Treasury bonds that would serve as the euro area's common safe asset.

It is widely ignored that the current euro fiscal regime is indeed unworkable. The ambition is to permanently balance the budget (over the cycle), which implies that public debt, expressed as a share of GDP, will converge to zero in the long run. There is no basis in economic theory for this pursuit. Public finance principles of intergenerational justice suggest debt- rather than tax-financing of public investment. Denying the financial system public debt as a vital safe asset flies in the face of financial stability policies. And, in terms of first principles of sound macroeconomic reasoning, the peculiar prioritisation of keeping the financial balance of the public sector in balance is pure folly and a recipe for disaster (Godley 1992; Terzi 2016). Germany has only succeeded with its 'black zero' craving by running up gigantic external surpluses. Following the German model, the euro area is attempting to do the same, just as the Fiscal Compact has transformed German fiscal dogma into a pan-euro area affair. The euro area is far too large to get away with this small-country mercantilist strategy for much longer.

Organising steady deficit spending at the euro area's centre would appropriately refocus the euro area towards a domestic demand-led growth strategy. Steady debt-financed spending on public investment by the Euro Treasury would finally enable the Member States to balance their current (structural) budgets. Over time, national debt ratios will decline to very low levels and the bulk of public debt will be at the centre – where it is made safe by the fact that the ECB can always purchase Euro Treasury bonds if its monetary policy

mandate calls for a sufficiently aggressive response to a common shock (deep recession or crisis).

With low national debt ratios and balanced current (structural) budgets, the automatic fiscal stabilisers can do their job: stabilisation will happen in an automatic and decentralised fashion. This contrasts with the US fiscal regime. In the United States, fiscal stabilisation is concentrated at the federal level alone. There is even the risk that the sub-federal authorities may implement procyclical and destabilising policies because their balanced-budget rules allow little budgetary leeway. European realities and the fiscal balance foreseen in the Euro Treasury plan, with its small supranational budget, calls for a more decentralised stabilisation model for the euro area. The current unworkable euro fiscal regime saw the automatic fiscal stabilisers being switched off when they were most needed. The ETP would restore the functionality of the national automatic fiscal stabilisers. We have emphasised the importance of common shocks in the euro area's experience. But the same will apply to asymmetric shocks, which would once again be stabilised through national budgets, too.

It is easily conceivable to complement the euro regime with a common unemployment (re-)insurance scheme, designed to help balance out asymmetric shocks, as an add-on to the ETP. It is also straightforward to add crisis provisions for temporarily expanded (proportionate) all-purpose grants from the Euro Treasury to all Member States at times of deep (common) recessions, to concentrate the rise in public debt at the centre of the system, where it is safe to do so.¹² The same reasoning applies to using the Euro Treasury as the ultimate fiscal backstop for the Banking Union. Current ESM arrangements still result in a concentrated rise in national indebtedness – even if temporarily backed in complex ways by the union – and involve procyclical fiscal tightening. As far as banking problems are concerned, there is a stark contradiction between mutualising supervision but failing to mutualise the fiscal backstopping part as well. This leaves national taxpayers on the hook for supra-national supervision policy blunders.¹³

In many ways, Euro Treasury plan arrangements might even be superior compared with the US fiscal regime, and certainly more feasible at this time. The shortcomings of the US fiscal regime have been clearly on display over the past decade or so. Starting in 2011, the Republican-controlled US Congress

12. For instance, one possible crisis-mode trigger for all-purpose grants by the Euro Treasury to Member States would be if GDP declined by at least 2 per cent. While the magnitude of a common budget designed to stabilise asymmetric shocks may be 0.5 per cent of GDP or even less (see footnote 11), Furceri and Zdzienicka's 2013 simulations suggest that stabilising severe downturns and financial crises in Europe's monetary union would call for a budget with gross contributions of 4.5 per cent of countries' GDP to achieve fiscal risk sharing comparable with that of Germany and other federally organised countries. The MacDougall report of 1977 foresaw a common budget of 2–2.5 per cent of GDP during the 'pre-federal integration' and envisioned a common budget in the 5–10 per cent of GDP ballpark if redistributive and defence functions were mutualised later on.

13. The opposite kind of argument is popularly levelled against more 'risk sharing' among members: moral hazard risks would increase when other Member States are liable for the consequences of decisions and risk taking beyond their control.

embarked on premature fiscal austerity, which not only held back the recovery but also forced the Federal Reserve into ultra-aggressive action to offset the damage. As in Europe, cuts in public investment have been one harmful aspect of this misguided austerity campaign. The American Society of Civil Engineers periodically assesses the state of US public infrastructure. The most recent 2017 'Infrastructure Report Card' gives a very poor (not far from failing) grade (D+). Austerity at the federal level has depressed public investment both directly as far as public investment by the federal government is concerned, and indirectly because public investment at state and local levels are often co-funded with support through federal grants. Although public investment may be excluded from balanced-budget rules at state and local levels of government, the general budget squeeze in the context of a lacklustre recovery appears to have held back state and local public investment spending, too. The Euro Treasury plan does not feature co-funding and should properly ring-fence public investment spending and secure its steady growth.

The post-crisis experiences have revealed further surprises. While remaining significantly higher than migration flows within the EU, inter-state and intra-state migration trends in the United States have been pointing downwards for decades (see Heinz and Ward-Warmedinger 2006; Gáková and Dijkstra 2008; Bräuniger and Majowski 2011; Molloy *et al.* 2011). It appears that America's pioneer spirit may be fading. But the consequences of Americans leaving certain regions to live in more prosperous parts of the country include ever deeper depression and despair among those left behind. The US national economy may have fully recovered 'on average' today, but regional divergences have become a very serious challenge. So much so, as to undermine social and political cohesion.

The macro policy drivers of divergence discussed in the euro area context above have also been at play in the United States in the form of a common monetary policy stance that is too tight for depressed regions and too easy for more fortunate regions of the country, not to mention balanced-budget rules that harm already depressed regions by inflicting more (procyclical) austerity on them. The US federation does not include any explicit regional equalisation transfers. Regional redistribution arises together with risk sharing across regions and stabilisation of shocks only as a by-product of the centralisation of revenues and spending in the federal budget. Support arising from the unemployment system is very limited. Neither superior labor market flexibility, including labor mobility, nor financial integration have prevented these outcomes. The US macro policy regime has once again proved its considerable superiority compared with that of the euro area in meeting the challenge of countering common shocks and stabilising the national economy, but today's crass regional divergences – with their stark social and political consequences – clearly call into question the adequacy of the US fiscal regime with respect to achieving balanced and inclusive growth across the nation.

Meanwhile, over in Europe, the drawn-out euro crisis and belated and sluggish recovery have given rise to unprecedented levels of intra-euro area migration flows of EU nationals, especially of young and skilled workers. A pertinent

question, however, is whether ‘improved’ labour mobility is really stabilising the monetary union and supporting regional convergence. Crisis-driven intra-euro area migration not only appears to further undermine social and political cohesion. Crisis-driven migration may also be considered among the crisis legacies that are still holding back a broad-based recovery today, undermining rather than helping the achievement of the EU objectives of convergence and joint prosperity (Hope 2018).

The EU objectives of personal freedom and (protection of) cultural diversity are also relevant here. The vision behind free movement of people is liberty and unhindered, but broadly balanced two-way flows between member countries inside the union. The post-crisis reality of large and persistent net migration flows clashes with this vision: it is driven not by liberty but poverty and despair. Large and persistent net flows may have been part of the American spirit since the nation’s pioneer days, when much of the net flows were made up of new arrivals rather than previous waves resettling. The same description may apply to today’s (smaller) immigration flows, as well as the behaviour of new college graduates. The optimum currency area literature may have wrongly depicted labor mobility as a factor stabilising out-of-sync regions. In the United States, this is much less of a factor stabilising regional business cycles, but primarily part of the longer-term rise and fall of US regions. In the EU/euro area, when crisis-stricken countries lose significant shares of their population, especially young and skilled workers emigrating as economic refugees, this is bound to adversely affect the objectives of cohesion and protecting cultural diversity inside the union.

One may give the EU authorities the benefit of the doubt and suspect that herein lies the rationale for their relentless push for structural labour market reforms, namely, in the belief that more flexible labor markets would help avoid large and persistent net migration flows.¹⁴ In neoclassical theory (and Mundell’s optimum currency area thinking) wage (level) flexibility and labour mobility appear to be neat substitutes. The analysis presented here suggests that wage flexibility can be only part of the solution in case of proper asymmetric shocks, shocks that actually require recalibrating intra-area competitiveness positions (that is, as expenditure switching policies). More generally, the real task is to keep wage and unit labor cost trends aligned with the ECB’s common price stability norm, so as to prevent the kind of divergences whose legacies are still holding the euro area back today. Labour market flexibility will not necessarily make this task any easier. What is required is a comprehensive approach to macroeconomic policy coordination, including by the social partners (Koll and Watt 2018). After all, national wage and productivity trends are ‘a matter of common concern’, just like exchange rates were in the old pre-euro days.

14. Padoa-Schioppa (2004: 61) exemplifies this view: ‘Only with a very flexible labor market can employment policies avoid generating asymmetric shocks that monetary policy cannot cure. The need for labor market flexibility is all the more strong in the European Union, where significant cultural and social barriers limit geographical mobility of workers.’

We emphasised above that the true strength of the US fiscal regime is not its capacity to stabilise asymmetric shocks, but its contribution to stabilising the national economy. The fiscal capacity at the centre that stabilises the United States when hit by common shocks is partly based on automatic stabilisers and partly on discretionary policy action. The crucial post-crisis discretionary fiscal policy choices were, first, the premature pursuit of austerity starting in 2011 and, second, the procyclical fiscal expansion in 2018. The first mistake put excessive pressures on the Federal Reserve to do the expansionary heavy-lifting alone, with unwelcome national and global side-effects. The more recent mistake caught the Federal Reserve off guard when it had embarked on its delicate path of policy normalisation in an economy that appears nearly fully-employed, in the aggregate. Ironically, the Republican-controlled US Congress thereby verified Milton Friedman's foremost fear that government discretion can be very risky when exercised by incompetent and/or corrupt governments.

The Euro Treasury plan establishes the nucleus of a 'steady-hand federal government'. The plan foresees steady public investment spending and provides a focal point for a neutral fiscal stance. For as long as the Stability and Growth Pact is applied symmetrically and as part of a broader effective and symmetric Macro Imbalances Procedure that prevents new divergences and imbalances, procyclical fiscal policies would be avoided, which would make the ECB's job so much easier.¹⁵ A tailor-made tool to foster convergence and cohesion is already in place: the EU budget. The Euro Treasury, as the missing core instrument in euro area fiscal stabilisation policy, would be separate from and run parallel to the EU budget, which would remain the sole instrument of any intra-regional redistribution. For the time being targeting redistribution by this specific tool seems superior to the US regime, which features regional redistribution as a by-product of a much larger overall budget.

Two additional observations are in order here. First, proper euro bonds (such as the ETBs foreseen here) would be necessary to provide the euro area with a common safe asset. Synthetic 'common' bonds (so-called European Safe Bonds, ESBies, or Sovereign Bond-Back Securities, SBBs; see Brunnermeier *et al.* 2011; Bénassy-Quéré *et al.* 2018; Gabor and Vestergaard 2018, for instance) are no solution. These proposals follow the usual optimum currency area frame of thought that is focused on asymmetric shocks. In line with the conventional focus the idea is that pooling will provide safety through diversification. That trick does not work in the case of common shocks (as Draghi 2018a appears to acknowledge). Ultimately, all euro area members would continue to float in the same wobbly boat that can easily capsize when a storm hits – because of the divorce between monetary and fiscal policies.

15. Germany's obsessive 'black zero' fiscal policy stance best exemplifies the risks of an asymmetric application of the Stability and Growth Pact. The experience underscores the original argument for policy coordination as an effort to prevent freeriding and a deflationary bias, which is the opposite of the Maastricht presumption of an expansionary fiscal bias. See Allsopp *et al.* (1995) and Forder (2007), and also Draghi (2014) and numerous years of IMF Article IV consultations on Germany.

Second, expecting the ECB to act as lender of last resort to sovereigns (by purchasing national debts) ultimately runs into the same problems as stem from the fact that the euro monetary union is currently not a fiscal union. If the ECB purchases national debt there is fiscal risk sharing involved with the possibility of (implicit) fiscal transfers. Risk mutualisation on the ECB's balance sheet bears legal risks. The ECB has been trying to work around these complications in its Public Sector Purchase Programme by having the national central banks concentrate their respective purchases on national debt only. Things are less complicated for the Federal Reserve, which has only purchased federal debts as part of its QE programmes. It would take proper euro bonds (see De Grauwe and Moesen 2009; De Grauwe 2013) to properly overcome the euro divorce and doom loop. Euro Treasury bonds would also facilitate the uniform transmission of the ECB's monetary policies, including when in crisis mode.

8. Summary and concluding remarks

This study set out to reframe and refocus the debate on euro regime reform. We argued that the conventional optimum currency area framework (mis)directs researchers' and reformers' attention to asymmetric shocks and that developments in Europe's monetary union have been misdiagnosed as matching the conventional optimum currency area script. Euro area member countries have truly experienced very diverse outcomes under the euro, but these diverse outcomes were not caused by proper asymmetric shocks. Rather, pre-crisis divergences and imbalances translated the impact of common shocks into diverse outcomes. The root cause of pre-crisis intra-area divergences and imbalances can be traced back to sustained wage repression on Germany's part.

Europe's failure, when the euro was launched, to heed the historical insight that exchange rates – read: balanced intra-area competitiveness positions – are 'a matter of common concern' was exacerbated by the fact that the euro regime itself reinforces and magnifies divergences once these get under way. Unsustainable intra-area imbalance built up until crisis struck. In response, Member States that had lost competitiveness vis-à-vis Germany were prescribed 'internal devaluation'. It is ironic that after abolishing the threat of external devaluations by monetary integration, Europe is nowadays effectively engaging in a cycle of competitive internal devaluations. To stop this hazardous cycle and prevent the recurrence of pseudo-asymmetric shocks of this kind in future, an effective and symmetric Macro Imbalances Procedure will need to be added to the regime. Ultimately, preventing intra-area divergences is a prerequisite for avoiding a euro transfer union, which appears to be the uppermost fear of opponents of euro fiscal union.

But complementing the euro monetary union by fiscal union is indeed necessary. The euro area needs a fiscal regime that makes it possible to achieve a more adequate fiscal stance and macro policy-mix. Towards this end we have proposed a minimalist fiscal union that features a common public investment budget funded by common euro bonds. The Euro Treasury Plan excludes a transfer union by design and focuses on stabilisation policy only. Given the small size of the federal budget and its steady expansion, stabilisation policy would, once again, be implemented in a decentralised way in the euro area. The key change brought about by the proposed fiscal reform would be to enable the national automatic stabilisers to do their job and not be switched off at the times they are most needed. In case of severe recessions, it is advisable to add a mechanism that would concentrate the rise in public indebtedness at the supra-national rather than the national level.

The proposed fiscal regime reform would simplify and support the ECB's task, greatly enhancing the chances of establishing a sound macro policy-mix and responding more effectively to common shocks in future, the euro area's foremost challenge and failure to date. The Euro Treasury Plan would also establish the fiscal–monetary axis of power that is needed to overcome the euro area's peculiar systemic financial vulnerability and decisively break the 'doom loop'.

Despite the monetary union's devastating crisis experience the EU/euro area authorities have so far clung on to their stale neoliberal ideology and faith in traditional mainstream optimum currency area theory. As a result, they continue to focus on asymmetric shocks and place excessive hopes in intra-regional stabilisation through further market liberalisation and integration, particularly financial markets. Their 'banking union cum financial market union' project is inspired by the perceived stabilisation benefits of the more integrated US financial system. But the contribution of financial integration with regard to internal US stabilisation may be greatly exaggerated, also because the outcome is really a case of joint production that crucially depends on federal financial policies and fiscal backstops. Europe cannot realistically expect to achieve much progress on this front without putting in place appropriate federal fiscal backstops, too. The US case underlines that market integration needs to go hand in hand with policy integration and that monetary (and banking) union needs to be supplemented with fiscal union.

While establishing a common unemployment reinsurance system could make a valuable contribution, it would not heal the euro regime's most serious defects. Our comparative study of the US case underlines that the 'incompleteness' of the current euro fiscal regime is felt most critically when it comes to countering common shocks (and financial crises) rather than proper asymmetric shocks.

References

- Alcidi C. and Thirion G. (2017) Fiscal risk sharing and resilience to shocks: lessons for the euro area from the US, Working Document 2017/07, Brussels, Centre for European Policy Studies.
- Alcidi C., D'Imperio P. and Thirion G. (2017) Risk-sharing and consumption-smoothing patterns in the US and the euro area: a comprehensive comparison, Working Document 2017/04, Brussels, Centre for European Policy Studies.
- Alesina A.F. (2010) Fiscal adjustments: Lessons from recent history. Paper prepared for the ECOFIN meeting in Madrid 15 April. https://scholar.harvard.edu/files/alesina/files/fiscaladjustments_lessons-1.pdf
- Alesina A.F., Blanchard O.J., Galí J., Giavazzi F. and Uhlig H. (2001) Defining a macroeconomic framework for the euro area: monitoring the European Central Bank 3, London, Centre for Economic Policy Research.
- Allsopp C., Davies G. and Vines D. (1995) Regional macroeconomic policy, fiscal federalism, and European integration, *Oxford Review of Economic Policy*, 11 (2), 126-144.
- Allsopp C. and Vines D. (1998) The assessment: macroeconomic policy after EMU, *Oxford Review of Economic Policy*, 14 (3), 1–23.
- Almunia J. (2008) "Foreword" in EMU@10—Successes and challenges after ten years of Economic and Monetary Union, *European Economy* 2/2008, Luxembourg, Office for Official Publications of the European Communities.
- Arnold N., Barkbu B., Ture E., Wang H. and Yao J. (2018) A central fiscal stabilization capacity for the euro area, *IMF Staff Discussion Notes* 18/03, Washington, DC., International Monetary Fund.
- Arzaghi M. and Herderson J.V. (2005) Why countries are fiscally decentralizing, *Journal of Public Economics*, 89 (7), 1157-1189.
- Asdrubali P., Sorensen B.E. and Yosha O. (1996) Channels of interstate risk sharing: United States 1963-1990, *The Quarterly Journal of Economics*, 111 (4), 1081-1110.
- Asdrubali P. and Kim S. (2004) Dynamic risksharing in the United States and Europe, *Journal of Monetary Economics*, 51 (4), 809–836.
- Baicker K., Clemens J. and Singhal M. (2012) The rise of the states: US fiscal decentralization in the postwar period, *Journal of Public Economics*, 96 (11–12): 1079–1091.
- Bastasin C. (2012) *Saving Europe: Anatomy of a Dream*, Washington, D.C., The Brookings Institution.
- Bayoumi T. and Eichengreen B. (1993) Shocking aspects of European monetary integration, in Torres F. and Giavazzi F. (eds) *Adjustment and growth in the European Monetary Union*, Cambridge, Cambridge University Press, 193-235.
- Bayoumi T. and Masson P. R. (1995) Fiscal fows in the United States and Canada: lessons for monetary union in Europe, *European Economic Review*, 39 (2), 253–274.
- Beblavý M., Lenaerts K. and Maselli I. (2017) Design of a European unemployment benefit scheme, *Research Report* 2017/04, Brussels, Centre for European Policy Studies.
- Beckworth D. (2010) One nation under the fed? The asymmetric effects of US monetary policy and its implications for the United States as an optimal currency area, *Journal of Macroeconomics*, 32 (3), 732-746.

- Beetsma R. and Giuliodori M. (2010) The macroeconomic costs and benefits of the EMU and other monetary unions: an overview of recent research, *Journal of Economic Literature*, 48 (3), 603–641.
- Begg D., Canova F., De Grauwe P., Fatás A. and Lane P.R. (2002) *Surviving the slowdown: Monitoring the European Central Bank 4*, London, Center for Economic Policy Research.
- Bénassy-Quéré A., Brunnermeier M.K., Enderlein H., Farhi E., Fratzscher M., Fuest C., Gourinchas P.-O., Martin P., Pisani F., Rey H., Véron N., Weber di Mauro B. and Zettelmeyer J. (2018) *Reconciling risk sharing with market discipline: a constructive approach to euro area reform*, CEPR Policy Insight 91, London, Centre for Economic Policy Research.
- Berger H., Dell'Ariccia G. and Obstfeld M. (2018) *Revisiting the economic case for fiscal union in the euro area*, IMF Departmental Paper 18/03, Washington, DC., International Monetary Fund.
- Bibow J. (2001) Making EMU work: some lessons from the 1990s, *International Review of Applied Economics*, 15 (3), 233-259.
- Bibow J. (2003) *Is Europe doomed to stagnation? An analysis of the current crisis and recommendations for reforming macroeconomic policymaking in Euroland*, Working Paper 379, Annandale-on-Hudson, N.Y., The Levy Economics Institute, <http://www.levyinstitute.org/pubs/wp379.pdf>
- Bibow J. (2004a) *On fiscal consolidation: contrasting strategies and lessons from international experiences*, Working Paper 400, Annandale-on-Hudson, N.Y., The Levy Economics Institute. <http://www.levyinstitute.org/pubs/wp400.pdf>
- Bibow J. (2004b) *Assessing the ECB's performance since the global slowdown: a structural policy bias coming home to roost?*, Working Paper 409, Annandale-on-Hudson, N.Y., The Levy Economics Institute. <http://www.levyinstitute.org/publications/assessing-the-ecbs-performance-since-the-global-slowdown>
- Bibow J. (2004c) *Reflections on the current fashion for central bank independence*, *Cambridge Journal of Economics*, 28 (4), 549-576.
- Bibow J. (2005) *Germany in crisis: the unification challenge, macroeconomic policy shocks and traditions, and EMU*, *International Review of Applied Economics*, 19 (1), 29–50.
- Bibow J. (2006a) *The euro area drifting apart: does reform of labour markets deliver competitive stability or competitive divergence?* in European Trade Union Confederation (ed), *Structural reforms and macro-economic policy*, Brussels, European Trade Union Confederation, 76-86.
- Bibow J. (2006b) *How the Maastricht regime fosters divergence as well as fragility*, Working Paper 460, Annandale-on-Hudson, N.Y., The Levy Economics Institute of Bard College.
- Bibow J. (2007a) *How the Maastricht regime fosters divergence as well as fragility*, in Arestis P., Hein E., and Le Heron E. (eds.), *Monetary Policies—Modern Approaches*. Basingstoke, UK: Palgrave.
- Bibow J. (2007b) *Global imbalances, Bretton Woods II, and Euroland's role in all this*, in Bibow J. and Terzi A. (eds), *Euroland and the World Economy: global player or global drag?*, Basingstoke, Palgrave-Macmillan, 15-42.
- Bibow J. (2009) *Keynes on monetary policy, finance and uncertainty: liquidity preference theory and the global financial crisis*, London, Routledge.
- Bibow J. (2012) *The Euroland crisis and Germany's euro trilemma*, *International Review of Applied Economics*, 27 (3), 360–385.

- Bibow J. (2013) Lost at sea: the euro needs a euro treasury, IMK Study 35, Dusseldorf, Hans-Böckler-Stiftung, Macroeconomic Policy Institute.
- Bibow J. (2014) The Euro treasury plan, Public Policy Brief 135, Annandale-on-Hudson, N.Y., The Levy Economics Institute.
- Bibow J. (2015) Making the euro viable: the euro treasury plan, Working Paper 842, Annandale-on-Hudson, N.Y., The Levy Economics Institute.
- Bibow J. (2016) From antigrowth bias to quantitative easing: the ECB's belated conversion? Working Paper 868, Annandale-on-Hudson, N.Y., The Levy Economics Institute.
- Bibow J. (2017) How Germany's anti-Keynesianism has brought Europe to its knees, Working Paper 886, Annandale-on-Hudson, N.Y., The Levy Economics Institute.
- Bibow J. and Flassbeck H. (2018) Das Euro-Desaster: wie deutsche Wirtschaftspolitik die Eurozone in den Abgrund treibt, Frankfurt am Main, Westend.
- Bini Smaghi L. and Vori S. (1992) Rating the EC as an optimal currency area: is it worse than the US., in O'Brien R. (ed.) Finance and the international economy: the AMEX Bank review prize essays, in memory of Robert Marjolin, Oxford, Oxford University Press, 78-104.
- Blanchard O. and Katz L. (1992) Regional evolutions, Brookings Papers on Economic Activity, vol. 23 (1): 1-76.
- Blinder A. (2016) Fiscal policy reconsidered, Brookings. <https://www.brookings.edu/research/fiscal-policy-reconsidered/>.
- Blinder A. and Zandi M. (2010) How the Great Recession was brought to an end, 27 July, <https://www.princeton.edu/~blinder/End-of-Great-Recession.pdf>
- Blinder A. and Zandi M. (2015) The financial crisis: lessons for the next one, Policy Futures, Washington, D.C., Center on Budget and Policy Priorities.
- Blyth M. (2013) Austerity: the history of a dangerous idea, New York, Oxford University Press.
- Bordo M.D. and Jonung L. (1999) The future of EMU: what does the history of monetary unions tell us?, NBER Working Paper 7365, Cambridge, MA, National Bureau of Economic Research.
- Bordo M.D., Markiewicz A. and Jonung L. (2011) A fiscal union for the euro: some lessons from history, NBER Working Paper 17380, Cambridge, MA, National Bureau of Economic Research.
- Borio C. and Disyatat P. (2011) Global imbalances and the financial crisis: link or no link?, BIS Working Papers 346, Basel, Bank for International Settlements.
- Bräuninger D. and Majowski C. (2011) Labour mobility in the euro area, EU Monitor, (85), 1-12, Deutsche Bank.
- Brunnermeier M., Garicano Luis, Lane P.R., Pagano M., Reis R., Santos T., Thesmar D., Van Nieuwerburgh S. and Vayanos D. (2011) European safe bonds (ESBies), <http://personal.lse.ac.uk/vayanos/euonomics/esbies.pdf>.
- Buiter W.H., Corsetti G. and Roubini N. (1993) Excessive deficits: sense and nonsense in the Treaty of Maastricht, Economic Policy, 8 (16), 57-100.
- Buiter W.H. (2005) The 'sense and nonsense of Maastricht' revisited: what have we learnt about stabilization in EMU?, CEPR Discussion Paper 5405, New York; Centre for Economic Policy Research.
- Buti M., Franco D. and Ongena H. (1998) Fiscal discipline and flexibility in EMU: the implementation of the Stability and Growth Pact, Oxford Review of Economic Policy, 14 (3), 81-97.

- Campos N.F. and Macchiarelli C. (2018) Symmetry and convergence in monetary unions, LEQS Paper 131, London, European Institute, London School of Economics.
- Coen-Parani D. and Wooley M. (2018) Fiscal centralization: theory and evidence from the Great Depression, *American Economic Review*, 10 (2), 39-61.
- Creel J. and Saraceno F. (2011) The dual mandate, the Fed and the ECB, OFCE le blog, 22 September, <https://www.ofce.sciences-po.fr/blog/the-dual-mandate-the-fed-and-the-ebc/>
- Dadak C. and Matkovskyy R. (2018) An American-style transfer union in Europe: a first glance at how much it might cost, *Journal of Economic Issues*, 52 (3), 749-769.
- De Grauwe P. and Moesen W. (2009) Gains for all: a proposal for a common euro bond, CEPS Commentary. <http://aei.pitt.edu/11091/1/1823%5B1%5D.pdf>.
- De Grauwe P. (2013) Design failures in the eurozone – can they be fixed?, *European Economy, Economic Papers* 491, Brussels, European Commission. http://ec.europa.eu/economy_finance/publications/economic_paper/2013/pdf/ecp491_en.pdf
- Del Negro M. (2002) Asymmetric shocks among US states, *Journal of International Economics*, 56 (2), 273–297.
- Decressin J. and Fatas A. (1995) Regional labor market dynamics in Europe, *European Economic Review*, 39 (9), 1627-1655.
- Draghi M. (2014) Unemployment in the euro area, Speech, Annual central bank symposium in Jackson Hole, 22 August.
- Draghi M. (2018a) Risk-reducing and risk-sharing in our Monetary Union, Speech, European University Institute, Florence, 11 May.
- Draghi M. (2018b) Economic and Monetary Union: Past and present, Speech, Berlin, 19 September.
- Dreyer J.K. and Schmid P.A. (2015) Fiscal federalism in monetary unions: hypothetical fiscal transfers within the Euro-zone, *International Review of Applied Economics*, 29 (4), 506-532.
- Dullien S. (2017) Risk sharing by financial markets in federal systems: what do we really measure?, FMM Working Paper 02-2017, https://www.boeckler.de/pdf/p_fmm_imk_wp_02_2017.pdf.
- Dullien S. and Fichtner F. (2013) A common unemployment insurance system for the euro area, *DIW Economic Bulletin*, 3 (1), 9-14.
- Dustmann C., Firzenberger B., Schönberg U. and Spitz-Oener A. (2014) From sick man of Europe to economic superstar: Germany's resurgent economy, *Journal of Economic Perspectives*, 28 (1), 167–188.
- Dyson K. and Featherstone K. (1999) *The road to Maastricht: negotiating Economic and Monetary Union*, Oxford, Oxford University Press.
- Eichengreen B. (1993) European monetary unification, *Journal of Economic Literature*, 31(3): 1321-57.
- European Commission (1990) One market, one money. An evaluation of the potential benefits and costs of forming an economic and monetary union, *European Economy* 44, Luxembourg, Office for Official Publications of the European Communities.
- Farhi E. and Werning I. (2012) Fiscal unions, NBER Working Paper 18280, Cambridge, MA., National Bureau of Economic Research.
- Fatás A. (1998) Does EMU need a fiscal federation? *Economic Policy*, 13 (26), 164–203.
- Feldstein M. (1992) Europe's monetary union: the case against EMU, *The Economist*, June 13, 12–19.

- Feldstein M. (1997) The political economy of the European economic and monetary union: political sources of an economic liability, *Journal of Economic Perspectives*, 11 (4), 23-42.
- Flassbeck H. (1997) Und die Spielregeln für die Lohnpolitik in einer Währungsunion?, *Frankfurter Rundschau* online, October 31.
- Flassbeck H. (2007) Wage divergences in Euroland: explosive in the making, in Bibow J. and Terzi A. (eds), *Euroland and the world economy: global player or global drag?*, London, Palgrave Macmillan, 42-52.
- Forder J. (2007) Whatever happened to policy coordination?, in Bibow J. and Terzi A. (eds), *Euroland and the world economy: global player or global drag?*, London, Palgrave-Macmillan, 75-90.
- Frankel J. A. and Rose A. K. (1998) The endogeneity of the optimum currency area criteria, *The Economic Journal*, 108 (449), 1009-1025.
- Friedman M. (1953) The case for flexible exchange rates, in Friedman M., *Essays in positive economics*, Chicago, University of Chicago Press, 157-203.
- Furceri D. and Zdzienicka A. (2013) The euro area crisis: need for a supranational fiscal risk sharing mechanism?, *IMF Working Paper 13/198*, Washington, DC, International Monetary Fund.
- Furceri D. and Zdzienicka A. (2015) The euro area crisis: need for a supranational fiscal risk sharing mechanism?, *Open Economies Review*, 26 (4), 683–710.
- Gabor D. and Vestergaard J. (2018) Chasing unicorns: the European single safe asset project, *Competition & Change*, 22 (2), 139-164.
- Galí J., Gerlach S., Rotemberg, J.J., Uhlig H. and Woodford M. (2004) The monetary policy strategy and the ECB reconsidered: Monitoring the European Central Bank 5, London, Center for Economic Policy Research.
- Gakova Z. and Dijkstra L. (2008) Labour mobility between the regions of the EU-27 and a comparison with the USA, *Regional Focus*, (2), 1-8. https://ec.europa.eu/regional_policy/sources/docgener/focus/2008_02_labour.pdf.
- Giavazzi F. and Pagano M. (1991) The advantage of tying one's hands: EMS discipline and Central Bank credibility, in de Ménéil G. and Gordon R.J. (eds.) *International volatility and economic growth: the first ten years of the international seminar on macroeconomics*, Amsterdam, Elsevier Science Publishers, 303-330.
- Godley W. (1992) Maastricht and all that: Letter from Europe, *London Review of Books*, 14 (19), 3-4.
- Goodhart C.A.E. (1992) National fiscal policy within EMU: The fiscal implications of Maastricht, in Goodhart C.A.E (ed), *EMU and ESCB after Maastricht*, London, Financial Markets Group. ch. 2.3.
- Goodhart C.A.E. (1998) The two concepts of money: implications for the analysis of optimal currency areas, *European Journal of Political Economy*, 14 (3), 407-432.
- Goodhart C.A.E. (2005) The links between fiscal and monetary policies on the one hand and financial stability on the other, paper presented at the Conference of the Austrian National Bank, May, Vienna.
- Goodhart C.A.E. (2007) Replacing the stability and growth pact?, in Bibow J. and Terzi A. (eds), *Euroland and the world economy: global player or global drag?*, London, Palgrave-Macmillan, 135-153.
- Goodhart C.A.E. and Smith S. (1993) Stabilization, in *The economics of community public finance*, *European Economy Reports and Studies 5*, Luxembourg, Office for Official Publications of the European Communities, 417–455.

- Goodhart C.A.E. and Lee D.J. (2013) Adjustment mechanisms in a currency area, *Open Economies Review*, 24 (4), 627-656.
- Goodhart C.A.E. and Pradhan M. (2017) Demographics will reverse three multi-decade global trends, BIS Working Papers 656, Basel, Bank for International Settlements.
- Gros D. and Thygesen N. (1998) *European monetary integration: from the European monetary system to economic and monetary union*, 2nd edition, Harlow, Addison Wesley Longman.
- Guarjardo, J., D. Leigh, and A. Pescatori. (2011). *Expansionary austerity*. IMF Working Paper no. 11/158. Washington, DC: International Monetary Fund.
- Hefeker C. (1994) German monetary union, the Bundesbank and the EMS collapse, *PSL Quarterly Review*, 47 (191), 379-398.
- Hein E. and Truger A. (2007) Fiscal policy and macroeconomic performance in the euro area: Lessons for the future, in Bibow J. and Terzi A. (eds), *Euroland and the world economy: global player or global drag?*, London, Palgrave-Macmillan, 154-183.
- Heinz F. F. and Ward-Warmedinger M. (2006) *Cross-border labor mobility within an enlarged EU*, ECB Occasional Paper Series 52, Frankfurt am Main, European Central Bank.
- Henning C.R. and Kessler M. (2012) *Fiscal federalism: US history for architects of Europe's fiscal union*, Working Paper 12-1, Washington, DC, Peterson Institute for International Economics.
- Hope K. (2018) Greece brain drain hampers recovery from economic crisis, *Financial Times*, 16 August.
- Inman R. P. and Rubinfeld D. (1992) Fiscal federalism in Europe: lessons from the United States experience, *European Economic Review* 36 (2-3), 654-660.
- Inman R.P. (1997) Do balanced budget rules work? U.S. experience and possible lessons for the EMU, in Siebert H. (ed.) *Quo Vadis Europe?*, Tübingen, J.C.B. Mohr, 309-332.
- Inman R.P. (2003) Transfers and bailouts: enforcing local fiscal discipline with lessons from U.S. federalism, in Rodden J., Eskeland G.S. and Litvack J. (eds.) *Fiscal decentralization and the challenge of hard budget constraints*, Cambridge MA, MIT Press, 35-84.
- Ishiyama Y. (1975) The theory of optimum currency areas: a survey, *IMF Staff Papers*, 22 (2), 344-83.
- Issing O. (2005) One size fits all! A single monetary policy for the euro area, *Speech, International Research Forum, Frankfurt am Main.*, 20 May.
- Italianer A. and Vanheukelen M. (1993) Proposals for community stabilization mechanisms: some historical applications, in European Commission, *The economics of Community public finance*, European Economy, Reports and Studies 5, Luxembourg, Office for Official Publications of the European Communities, 493-510.
- James H. (2012) *Making the European Monetary Union*, Cambridge, Harvard University Press.
- Juncker J.-C., Tusk D., Dijsselbloem J., Draghi M. and Schulz M. (2015) *Completing Europe's economic and monetary union*, Brussels, European Commission. https://ec.europa.eu/commission/sites/beta-political/files/5-presidents-report_en.pdf.
- Kenen P.B. (1969) The theory of optimum currency areas: an eclectic view, in Mundell R. A. and Swoboda A. K. (eds), *Monetary problems of the international economy*, Chicago, IL: The University of Chicago Press, 41-60.
- Kenen P. B. (1995) *Economic and monetary union in Europe: moving beyond Maastricht*, Cambridge, Cambridge University Press.

- Keynes J.M. ([1936] 1973) *The general theory of employment, interest and money*, Basingstoke, Macmillan. <http://cas2.umkc.edu/economics/people/facultypages/kregel/courses/econ645/Winter2011/GeneralTheory.pdf>.
- Kirkegaard J.F. (2015) *Economic governance structures in the United States*, Brussels, European Parliament.
- Koll W. and Watt A. (2018) *Convergence and stability in the euro area through effective macroeconomic policy coordination*, IMK Study 61e, Dusseldorf, Hans-Böckler-Stiftung, Macroeconomic Policy Institute.
- Krosta A. and Major T. (2004) *Reforms good for growth with Europe on track for recovery*, Interview with J.-C. Trichet. *Financial Times*, April 23.
- Krugman P. (1993) *Lessons of Massachusetts for EMU*, in Torres F. and Giavazzi F. (eds), *Adjustment and growth in the European monetary union*, Cambridge, Cambridge University Press, 241–266.
- Krugman P. (2008) *Fifty Herbert Hoovers*, *The New York Times*, December 28, <https://www.nytimes.com/2008/12/29/opinion/29krugman.html>
- MacDougall G. (1977) *Report of the study group on the role of public finance in European integration*, Luxembourg, Office of official publications of the European Communities. <http://aei.pitt.edu/36433/1/Report.study.group.A13.pdf>.
- Majocchi A. and Rey M. (1993) *A special financial support scheme in economic and monetary union: need and nature*, *European Economy. Reports and Studies* 5, 457–480.
- McKinnon R.I. (1963) *Optimum currency areas*, *American Economic Review*, 53 (4), 717–725.
- Meade J. and Weale M. (1995) *Monetary union and the assignment problem*, *The Scandinavian Journal of Economics*, 97 (2), 201–222.
- Méltiz J. (2004) *Risk-Sharing and EMU*, *Journal of Common Market Studies*, 42 (4), 815–840.
- Méltiz J. and Zumer F. (2002) *Regional redistribution and stabilization by the center in Canada, France, the UK and the US: a reassessment and new tests*, *Journal of Public Economics*, 86 (2), 263–286.
- Miller M. and Sutherland A. (1991) *The 'Walters critique' of the EMS – A case of inconsistent expectations?*, *The Manchester School*, LIX supplement, 23–37.
- Mody A. (2018) *Euro tragedy: a drama in nine acts*, Oxford, Oxford University Press.
- Moghadam R. (2018) *The ECB's narrow mandate is no longer fit for purpose*, *Financial Times*, 14 June, <https://www.ft.com/content/5f5fc09e-6e25-11e8-8863-a9bb262c5f53>
- Molloy R., Smith C. L. and Wozniak A. (2011) *Internal migration in the United States*, *Journal of Economic Perspectives*, 25 (3), 173–196.
- Mongelli F.P. (2005) *What is the European economic and monetary union telling us about the properties of optimum currency area?*, *Journal of Common Market Studies*, 43 (3), 607–635.
- Mundell R. A. (1961) *A theory of optimum currency areas*, *The American Economic Review*, 51 (4), 657–665.
- Mundell R.A. (1973) *A plan for a European currency*, in Johnson H. and Swoboda A. (eds.) *The economics of common currencies*, London, Allen & Unwin Ltd, 143–173.
- Musgrave R. [(1959). *The theory of public finance*, New York, McGraw-Hill.
- Nikolov P. (2016) *Cross-border risk sharing after asymmetric shocks: evidence from the euro area and the United States*, *Quarterly Report on the euro area*, 15 (2), 7–18.
- OECD (1986) *Flexibility in the labour market*, Paris, OECD.

- OECD (1999) EMU: facts, challenges and policies, Paris, OECD.
- OECD (2002a) Economic Survey on the euro area, 2001-2002, Paris, OECD.
- OECD (2002b) Inflation persistence in the euro area, in OECD Economic Outlook 72, Paris, OECD, 163-172.
- Padoa-Schioppa T. (1994) The road to monetary union in Europe: the emperor, the kings, and the genies, Oxford, Oxford University Press.
- Padoa-Schioppa T. (2004) The euro and its Central Bank: getting united after the Union, Cambridge MA, MIT Press.
- Panizza U. (1999) On the determinants of fiscal centralization: theory and evidence, *Journal of Public Economics*, 74 (1), 97-139.
- Pasinetti L. L. (1998) The myth (or folly) of the 3% deficit/GDP Maastricht 'parameter', *Cambridge Journal of Economics*, 22 (1), 103-116.
- Perotti R. (2014) The 'austerity myth': gain without pain?, BIS Working Papers 362, Basel, Bank for International Settlement. <http://www.bis.org/publ/work362.htm>.
- Pisani-Ferry J., Italianer A. and Lescure R. (1993) Stabilization properties of budgetary systems: a simulation analysis, in *The economics of Community public finance*, European Economy, Reports and Studies 5, Luxembourg, Office for Official Publications of the European Communities, 511-538.
- Poghosyan T., Senhadji A. and Cottarelli C. (2016) The role of fiscal transfers in smoothing regional shocks, IMF Working Paper 16/141, Washington, DC., International Monetary Fund.
- Poncela P., Pericoli F., Manca A.R. and Nardo M. (2016) Risk sharing in Europe, JRC Science for Policy Report 104621, Luxembourg, Publications Office of the European Union.
- Poterba J. (1994) State responses to fiscal crises: the effects of budgetary institutions and politics, *Journal of Political Economy*, 102 (4), 799-821.
- Priewe J. (2007) Reconsidering the theories of optimum currency area - a critique, in Hein E., Priewe J. and Truger A. (eds), *European integration in crisis*, Marburg, Metropolis, 27-52.
- Rockoff H. (1998) By way of analogy: the expansion of the Federal government in the 1930s, in Bordo M.D., Goldin C. and White E.N. (eds), *The defining moment: the great depression and the American economy in the Twentieth Century*, Chicago, University of Chicago Press, 125-54.
- Rose A. (2000) One money, one market: estimating the effects of common currencies on trade, *Economic Policy*, 15 (30), 7-45.
- Sala-i-Martin X. and Sachs J. (1991) Fiscal Federalism and optimum currency areas: evidence for Europe from the United States, NBER Working Paper 3855, Cambridge, MA, National Bureau of Economic Research.
- Sala-i-Martin X. and Sachs J. (1992) Fiscal Federalism and optimum currency areas: evidence for Europe from the United States, in Canzoneri M.B., Grilli V. and Masson P.R. (eds), *Establishing a central bank issues in Europe and lessons from the US*, Cambridge, Cambridge University Press, 195-219.
- Sandbu M. (2015) Europe's orphan: the future of the Euro and the politics of debt, Princeton, Princeton University Press.
- Sardoni C. (2007) The economic rationale of the EMU and the euro, in Bibow J. and Terzi A. (eds), *Euroland and the world economy: global player or global drag?*, Basingstoke, Palgrave-Macmillan, 91-103.
- Sargent T.J. and Wallace N. (1981) Some unpleasant monetarist arithmetic, *Federal Reserve Bank of Minneapolis Quarterly Review*, 5 (3), 1-17.

- Storm S. (2016) German wage moderation and the eurozone crisis: a critical analysis, Institute for new economic thinking, 8 January, <https://www.ineteconomics.org/perspectives/blog/german-wage-moderation-and-the-eurozone-crisis-a-critical-analysis>.
- Tavlas G.S. (1993) The 'new' theory of optimum currency areas, *The World Economy*, 16 (6), 663-685.
- Tavlas G.S. (2009) Optimum-currency-area paradoxes, *Review of International Economics*, 17 (3), 536-551.
- Teaford J.C. (2002) *The rise of the states: evolution of American state government*, Baltimore, John Hopkins University Press.
- Terzi A. (2016) A T-shirt model of savings, debt, and private spending: lessons for the euro area, *European Journal of Economics and Economic Policies: Intervention*, 13 (1), 39-56.
- Truger A. and Will H. (2012) The German 'debt brake': a shining example for European fiscal policy?, Working Paper 15/2012, Berlin, Institute for International Political Economy.
- Teaford J. C. (2002) *The rise of the states: evolution of American state government*, Baltimore, John Hopkins University Press.
- Truger A. and Will H. (2013) The German "debt brake": a shining example for European fiscal policy, *Revue de l'OFCE*, (127), 153-188.
- Van-Rompuy H., Barroso M., Juncker J. C. and Draghi M. (2012) Towards a genuine economic and monetary union, Brussels, 26 June. <https://www.consilium.europa.eu/media/33785/131201.pdf>.
- Von Hagen J. (1992) Fiscal arrangements in a monetary union – some evidence from the US, in Fair D. and de Boissieu C. (eds), *Fiscal policy, taxes, and the financial system in an increasingly integrated Europe*, Dordrecht, Kluwer Academic Publishers, 337–359.
- Wallis J.J. and Oates W. (1998) The impact of the New Deal on American federalism, in Michael D. Bordo, Goldin C. and White E.N. (eds), *The defining moment: the great depression and the American economy in the twentieth century*, Chicago, University of Chicago Press, 155–180.
- Weale M. (1999) Monetary and fiscal policy in Europe, *Journal of Common Market Studies*, 37 (1), 153-162.
- Weale M. (2004) National saving and the Stability and Growth Pact, *Journal of Common Market Studies* 42 (5), 1023-1059.
- Wolf M. (2007) The pain in Spain will follow years of rapid economic gain, *Financial Times*, March 27.