

How to increase fiscal stabilization at the euro area level?

Economic and Monetary Union (EMU) as originally designed failed to stabilize the euro area economy during the financial and economic crisis. In this contribution, we discuss prominent proposals to stabilize EMU through (1) risk reduction, which usually does not require explicit transfers, and (2) risk sharing mechanisms, which mostly involve fiscal transfers. We argue that mechanisms without transfers, e.g. building fiscal buffers at the national level in good times, help countries avoid large consolidation packages in bad times. Furthermore, we find that various, recently suggested mechanisms that involve explicit transfers (e. g. unemployment reinsurance) are somewhat flawed, as they involve a tradeoff between limiting permanent transfers and moral hazard and ensuring sufficient stabilization. However, allowing countries to be permanent net recipients or net contributors would considerably improve the stabilization capacity, and so would schemes that may run budget deficits in bad times. These features of a risk sharing mechanism would also be more in line with how existing fiscal federations work.

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JEL classification: E62, H77

Keywords: fiscal union, fiscal federalism, euro area

Even though the euro area had some stabilizers in place (see Katterl and Köhler-Töglhofer, 2018, in this issue), it is often quoted to have been outperformed by the U.K. and the U.S.A. in terms of GDP growth and unemployment development in the early 2010s. Many economists and politicians therefore argued that the current setting for fiscal stabilization in the euro area is insufficient. A different picture emerges when we look at GDP per capita and the employment rate (chart 1), with the euro area performing better than the U.S.A. in terms of the employment rate. However, there was a marked difference in terms of GDP growth per capita compared to both countries in the years 2012 and 2013. So the question arises what measures should be implemented to avoid a repeat of the so-called “European Sovereign Debt Crisis”.

Two fiscal factors have typically taken a large part of the blame for the weak performance in 2012/13, namely (1) (excessive) fiscal consolidation and (2) sovereign-financial feedback loops contributing to unfavorable lending conditions in parts of the euro area. Yet chart 2 shows that while the fiscal stimulus around 2009 was much smaller in the euro area than in the U.S.A. (only Portugal and Spain had deteriorations in the structural primary balance of a similar size), fiscal consolidation from 2011 to 2013 was much less pronounced, too. However, adjustments in the euro area were very unevenly distributed: compared with the U.S.A., Greece, Portugal and Spain had far larger consolidation packages in 2011 to 2013 (resp. 2010 to 2013 for Greece), which contributed to their very weak economic performance over this time span (chart 4). Furthermore, while the U.K. and the U.S.A. enjoyed low interest rates on government bonds despite their

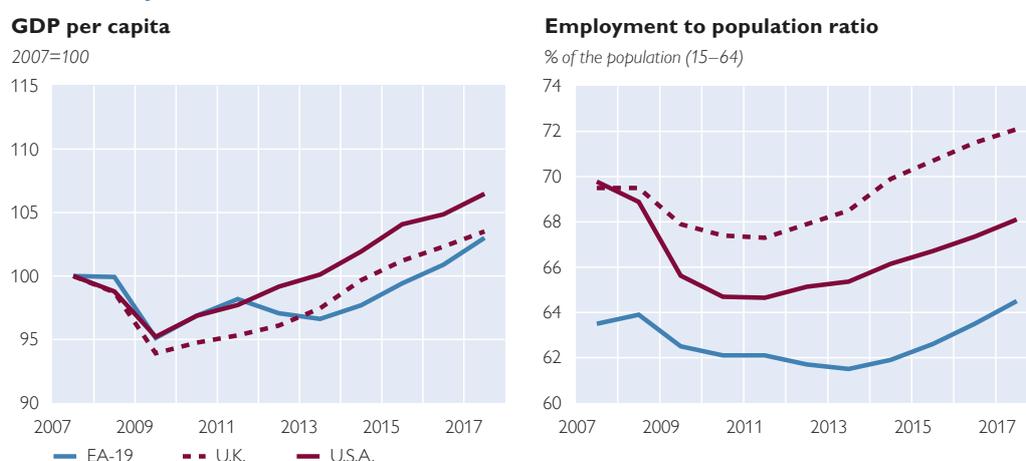
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Refereed by: Maria
Grazia Attinasi,
European Central
Bank

high budget deficits,² interest rates soared for several euro area countries, including Italy and Spain (chart 2, right-hand panel). The sharp rise in interest rates not only created problems for the sovereigns themselves, but it also (at least partly) translated into higher interest rates on bank loans to the private sector. The latter issue was to some extent tackled through monetary policy measures (e.g. the Outright Monetary Transactions program and long-term refinancing operations) and the banking union (which, however, has not been completed yet as it still lacks a common deposit insurance scheme).

Chart 1

Economic performance in the euro area, the U.K. and the U.S.A. since 2007



Source: Eurostat, OECD.

Our contribution, however, does not discuss financial stability or private sector risk premiums. Instead, we focus on how to avoid strong increases in sovereign risk premiums and especially on how to increase the room for fiscal maneuver (and reduce consolidation needs) in bad times.

Section 1 looks at the fiscal mechanisms for stabilization and risk sharing employed in existing fiscal federations. The subsequent sections discuss several proposals in the literature on how to increase fiscal stabilization in the euro area. Special attention is given to a very recent paper by leading French and German economists (Bénassy-Quéré et al., 2018) and to proposals by the European Commission (e. g. 2017a; 2017 December Package: Completing Europe's Economic and Monetary Union policy package (European Commission, 2017b–e)). Section 2 tackles approaches without explicit transfers among Member States (e. g. fiscal rules which are stricter in good times or mechanisms to directly reduce risk premiums on government debt). While most are risk reduction mechanisms, some also have a risk sharing component. Section 3 discusses schemes that involve some kind of risk sharing through net transfers to Member States in bad times. Section 4 highlights the tradeoff between limiting moral hazard and permanent transfers on the

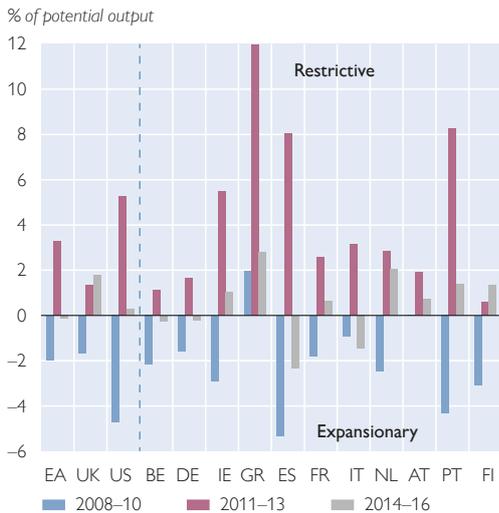
² Note that the interest rates on U.K. and U.S. government bonds (denominated in GBP and USD, respectively) are not fully comparable to those on bonds issued by governments in the euro area (denominated in EUR). This is especially true for the later years in chart 2 when monetary policy rates diverged completely.

one hand and facilitating risk sharing and providing stabilization capacity on the other. Finally, section 5 concludes.

Chart 2

Fiscal consolidation and government bond yields in the euro area

Fiscal adjustments¹ in selected time spans



Yields on 10-year government bonds



Source: OECD, ECB, Macrobond.

¹ Fiscal adjustments are proxied by the change in the underlying (i. e. structural) primary balance as calculated by the OECD (November 2017).

1 Fiscal stabilization in existing fiscal federations

In most existing fiscal federations (i. e. countries with a central government and several state governments), there are some fiscal rules for subnational governments (for an overview, see Eyraud and Gomez Sirera, 2015). In some countries, they were adopted voluntarily by the state governments (e. g. in the U.S.A.), while in others they were defined by intergovernmental agreements (e. g. in Austria).

Besides fiscal rules, fiscal stabilization for state governments has worked mostly via transfers, while loans have not played an important role. Palomba et al. (2015) argue that in normal times, loans provided by the federal government to state governments have only been relevant in the relatively centralized federation of Austria. However, in episodes of fiscal crisis, loans to the federal states have been quite common (Cordes et al., 2015). Guarantees on the debt of other federal states (typically via the federal government) have also played a very limited role. In Germany, several states have issued joint bonds (*Länderjumbos*), and the federal government and some states have jointly issued one Deutschland bond (*Bund-Länder-Anleihe*³), but liability has been several (i. e. not joint) in all cases.

In typical federations, fiscal centralization contributes to the smoothing of subnational economic shocks. The mechanisms involved can be grouped into two broad categories (see also Poghosyan et al., 2015):

³ The International Securities Identification Number (ISIN) is DE000A1X2301.

- **Stabilization:** in all federations, the central government and federal social security funds provide services (e.g. defense) and social transfers (e.g. pension and unemployment benefits) to the private sector as well as acyclical transfers to state governments (e.g. salaries and pensions for state teachers in Austria) or countercyclical transfers to state governments (e.g. transfers for the extension of unemployment benefits in the U.S.A.). The central government and the social security funds act as shock absorbers for state governments, as these expenditures are mostly financed by cyclical taxes. Also, state and municipal taxes (like property taxes) tend to be relatively less cyclical than federal taxes (see e.g. Escolano et al., 2015). Such mechanisms insure state governments against both common shocks affecting the whole federation and idiosyncratic shocks affecting only a few states.
- **(Fiscal) Risk sharing:** in some countries, revenue sharing between states is extensive. It can be achieved by the federal government collecting taxes and paying (procyclical) transfers to the states (as is the case in Austria) or by the state governments collecting taxes and sharing them with the other states. Such mechanisms insure state governments against idiosyncratic shocks but not against common shocks.

What these mechanisms have in common is that stabilization or fiscal risk sharing with regard to subnational budgets⁴ is mostly a side effect, especially for countries like Austria or Germany. They are mainly intended to be (1) of an allocative nature due to the high fixed cost involved in the provision of certain public services and the administration of social transfers and taxes or (2) to avoid (excessive) tax competition. Moreover, distributive considerations also play a prominent role in that living conditions are not supposed to differ too much across states.

Neither the European Union as a whole nor the euro area are fiscal federations. As the EU budget has to be balanced every year, it cannot provide any stabilization in case of a negative shock affecting all countries at the same time (as was the case in 2009). However, the design of the EU budget involves some implicit revenue sharing between states. The contributions by EU Member States are based on a fictional harmonized VAT base and especially on gross national income. So when a country's share in EU gross national income (which is relatively close to GDP for most Member States) declines, its share in the contributions payable to the EU budget will decline, too (chart 5). While net transfers out of the EU budget to the main beneficiaries of structural and cohesion funds are sizeable (see Köhler-Töglhofer and Katterl, 2018, in this issue), overall fiscal risk sharing through transfers is much smaller in the EU or the euro area compared to fiscal federations.

2 How to increase stabilization without explicit transfers

In this section, we summarize the main political and academic ideas on how to increase fiscal stabilization and reduce fiscal risks in the euro area without (necessarily) using monetary transfers. All proposals, including those in section 3 (which involve monetary transfers), also indirectly aim at supporting the banking union in the prevention of negative sovereign-banking loops, as they are supposed to decrease the probability of high risk premiums on government debt in crisis.

⁴ This should not be confused with a stabilization of household income, which could be achieved by the central government or by state governments.

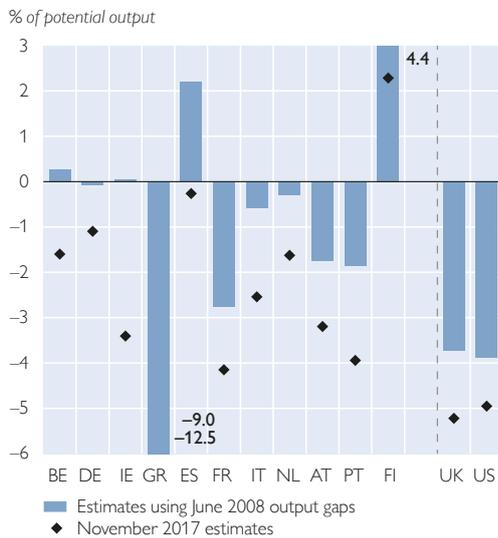
2.1 Less procyclical fiscal rules

Several proposals have been made to amend the fiscal rules such that they are stricter in good times and provide sufficient buffers for bad times. At least on first sight, Ireland and Spain had relatively good fiscal positions in 2007 (chart 3), and yet they were hit very hard by the crisis. By contrast, Portugal had a rather low structural balance, Italy had a very high debt ratio, and Greece had a very high structural deficit and a very high debt ratio directly before the crisis (chart 3).⁵ France and Austria had rather weak fiscal positions in 2007, too. While the consolidation packages of the latter two countries were not as large as in the countries with macroeconomic adjustment programs, they had to do significantly more than Germany (chart 2), which is likely to have contributed to their relatively weaker growth performance. An interesting case is Finland, which was hit particularly hard by the crisis. Thanks to its extraordinarily good fiscal position in 2007 (chart 3), however, its fiscal policy was able to expand considerably around 2009, and it had relatively small consolidation needs afterward (chart 2). Finland also did not experience a strong increase in sovereign risk premiums. Nevertheless, the country performed badly in terms of GDP per capita growth between 2007 and 2017 (chart 4). Consolidation needs in 2011 to 2013 would have been much smaller in the euro area if countries such as Greece, France, Italy, Austria and Portugal had had better pre-crisis positions.

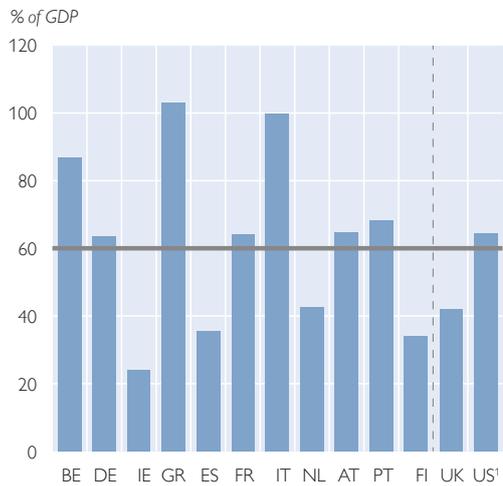
Chart 3

Fiscal positions in 2007

Structural balances (OECD)



Public debt (EDP definition)



Source: OECD, Eurostat.

¹ Data for the U.S.A. refer to “gross financial liabilities” (OECD), which are not fully comparable with the concept of EDP debt.

⁵ Note that Greece, Portugal and Austria had to make sizeable ex post revisions of their 2007 headline deficit ratios.

In a nutshell, the current subsets of EU fiscal rules have three anchors: (1) the 3% upper limit for the headline deficit, (2) the 60% benchmark for the debt ratio and (3) the country-specific medium-term targets for the structural balance. If a country does not achieve one or more of these targets, there will be certain consolidation requirements. The amount of consolidation is measured by (1) the change in the structural balance and (2) expenditure growth adjusted for the impact of discretionary revenue measures (for details, see European Commission, 2018b). Many aspects of the current framework are highly complex and/or procyclical (i.e. they tend to ask for more consolidation in bad times; for an overview, see Prammer and Reiss, 2016). This is true not only of the regulations themselves, but also of the application of the Stability and Growth Pact (SGP) by the European Commission. For example, just when economic conditions in the euro area improved around 2014, additional flexibility was introduced, which in fact reduced consolidation requirements (see Katterl and Köhler-Töglhofer, 2018, in this issue). In the following, we discuss two proposals which are supposed to make the EU fiscal rules at the same time less procyclical and less complex.

Many articles (e. g. Claeys et al., 2016) suggest expenditure growth – adjusted for the estimated impact of discretionary revenue measures – should be the main indicator for consolidation efforts in the SGP. Supposedly, this would not only increase predictability (due to fewer measurement issues in real time) but also decrease procyclicality: the expenditure benchmark compares expenditure growth with a multi-year average of potential GDP growth rates instead of the more procyclical growth rate of the current year (such as the change in the structural balance). Furthermore, this benchmark calculates adjustments on the revenue side based on the estimated impact of discretionary measures instead of the change in estimated structural revenue. While these advantages have to be acknowledged, one should not forget that measurement problems with discretionary revenue measures go far beyond the treatment of improvements in tax collection or the uncertainties concerning the true effect of base-broadening measures. For example, the current expenditure benchmark ignores the following conceptual issues: revenue increases via bracket creep in the income tax, statistical interactions of expenditure with both tax and nontax revenue⁶ as well as the virtual impossibility of correctly accounting for revenue measures of smaller government entities.^{7,8} Some of these problems could be solved quite easily by deducting nontax revenue from the expenditure aggregate.

With a view to simplify the EU fiscal framework, several commentators (e.g. Claeys et al., 2016) also suggest using debt as the main (or even sole) anchor in the

⁶ For example, cuts in rental payments by Austrian schools to the country's central provider of space for certain public sector functions (Federal Real Estate Company) would reduce revenue and expenditure by the same amounts, and cuts to expenditure on personnel by universities would (in addition to reducing compensation of employees) decrease (imputed) government investment and revenue from output for own final use by the same amount. Furthermore, a cut to public pensions also has a direct impact on revenue (lower income tax on pensions), and, in the same vein, increases to employers' payroll taxes or social contributions automatically increase government expenditure.

⁷ For example, when the central government cuts intragovernmental transfers to museums or public railways, they may respond with expenditure decreases (which would be captured by the expenditure benchmark) or increases in ticket prices (which would be ignored in this framework).

⁸ These issues also make it extremely difficult to break down the requirements for government subentities (like the Austrian Stability Pact does for states and municipalities).

fiscal rules (i.e. the headline budget balance and the structural balance would be sidelined). However, relying on the current debt ratio alone to judge whether consolidation is necessary might lead to excessive consolidation: would Greece or Italy need to implement additional expenditure cuts (or tax hikes) if their structural balance ratio were already at +3% but their debt ratio was still more than 100%? The current fiscal framework would likely indicate that there is some room for expansion in that case.⁹ Furthermore, this measure might also lead to less adjustment in good times: while adjusted expenditure growth in Spain and Ireland was fairly high before the crisis (European Commission, 2011), their pre-crisis debt ratios were very low by euro area standards (chart 3). Larger consolidation requirements for high-debt countries could also be achieved by increasing the existing penalty term in the calculation of structural balance targets.

Various proposals have been made on how to improve the implementation of surveillance: Bénassy-Quéré et al. (2018) suggest replacing the current sanctions regime with a forced issuance of junior bonds in case of planned deviations from the fiscal rules (see section 2.2 for a discussion of the practicability of junior sovereign bond issues). They also argue (in line with other commentators) for reducing the European Commission's role and strengthening the European Stability Mechanism (ESM) and/or national fiscal councils.

2.2 Different forms of “Eurobonds”

More stabilization in bad times cannot only be achieved through better initial fiscal positions (i.e. reducing risk ex ante), but also through mechanisms which avoid an increase in sovereign risk premiums (and possibly also private sector risk premiums) in case of fiscal problems.¹⁰ While almost all proposals discussed in this paper could potentially help in this respect, the joint issuance of public debt by Member States would be the most direct way to achieve this in that it includes risk sharing. Some proposals involve joint and several liability of the issuing Member States (i.e. Germany would not only be liable for its own share but also, say, for the Italian share in the joint instrument and vice versa). Others, most prominently the European Safe Bonds (ESBies), have several (or proportionate) liability.

Prominent proposals for the issuance of bonds with joint and several liability include Blue Bonds (Delpa and von Weizsäcker, 2011) and “Eurobills” (Philippon and Hellwig, 2011). In both cases, only a part of government debt (60% of GDP for “Blue Bonds”, 10% of GDP in the form of short-term bonds for “Eurobills”) is issued jointly, and Eurobonds are senior to government debt instruments issued by individual Member States. However, when we look at government balance sheets, the distinction between junior and senior debt is much trickier than for corporations. This can lead to situations where even small amounts of senior debt are not fully repaid by a Member State (i. e. the other countries would have to step in). First, off balance sheet liabilities of governments tend to be extremely large,

⁹ The only binding rule in the current framework in this case is the debt benchmark. However, even in a fiscally bleak situation with a debt ratio of 150% and nominal trend growth of 2%, a structural balance of around +1½% would suffice to meet the requirements of the debt benchmark (assuming a deficit-debt adjustment of close to zero).

¹⁰ There are also strong reservations against this aim based on the argument that the threat of a high risk premium is an effective tool to encourage governments to pursue sound fiscal policies.

especially entitlements to pensions and other social transfers. Typically, they are neither senior nor junior to financial liabilities. Countries may cut their off balance sheet liabilities significantly before even slightly cutting financial debt. However, unlike for junior debt in a corporate bankruptcy, countries are very unlikely to reduce pensions or social transfers to zero before touching their financial debt at all. Second, in the national accounts, government consists of numerous entities, many of which may issue debt. Caps on the issuance of senior liabilities applicable to the core central government can be circumvented by reducing intragovernmental transfers (which improves the core central government balance). These cuts could be compensated for by the issuance of (possibly secured) debt by municipalities or corporations classified as government (like public railway corporations) and/or by legally binding guarantees on future payments by central government to them. If governments were unwilling to reduce these implicit liabilities from intragovernmental transfers and social payments (and if they were unwilling to increase taxes), they could be unable to redeem even relatively small amounts of financial debt.¹¹ Furthermore, taking joint liability for debt instruments would go beyond what is usual in existing fiscal federations (section 1).

ESBies, which were suggested by Brunnermeier et al. (2016), are the most prominent example of bonds with several liability where, similar to collateralized debt obligations, regular government bonds of Member States are bundled together into a senior and a junior tranche. A major advantage of this proposal is that, possibly in combination with regulatory incentives, it might induce banks to reduce their concentration risk or home bias by replacing bonds of their own government with ESBies. This could also be achieved through direct regulation by lifting the exception of government bonds from concentration risk rules. Concerning the effects on the financing conditions of governments, there is some uncertainty as to how the junior tranche would perform in times of fiscal stress in the euro area, as even the default of a smaller Member State would have a relatively large effect on this tranche. This is why ESBies should probably be seen as a risk reduction tool for sovereign-financial feedback loops. If the junior tranche carries a high risk premium in times of crisis, ESBies may not be that helpful in ensuring good financing conditions for troubled Member States. However, if banks did not hold parts of the junior tranche, they would be much less affected by increases in sovereign risk premiums (or defaults of single Member States) than if they held regular government bonds. This effect is accompanied by the side effect of a reduction in the cost of default for the defaulting Member State (while increasing the cost for the others) due to higher diversification. German banks would, for instance, be less affected by a German default if they held ESBies instead of German bonds (see S&P, 2017). Joint and several liability would also reduce the cost of a default for the defaulting country (due to the transfers the other Member States would have to pay), thus potentially encouraging moral hazard.

2.3 European Monetary Fund and European Stability Mechanism

Federal loans to subnational entities in times of fiscal crisis are a relatively common stabilization tool in existing fiscal federations (section 1). The December 2017

¹¹ Note also that governments own certain assets which they cannot be forced to privatize.

package of the European Commission (2017b-e) included a proposal to establish a European Monetary Fund (EMF) to be built on the structures of the existing ESM.¹² Like the ESM, it is to provide financial assistance to Member States in need. They would have (guaranteed) access to EMF liquidity at rates lower than their countries' market rates (due to lower risk and liquidity premiums), which would reduce the cost of financing in future budgets. However, in contrast to the ESM, which is based on intergovernmental legislation, the European Commission's proposals suggests to set up the EMF as a legal entity under Union law. In addition to providing financing to Member States, it would also provide a common backstop to the Single Resolution Fund, i.e. the EMF would provide credit lines in case the Single Resolution Fund lacks the financial capacity to resolve failing banks.¹³ Moreover, the proposal foresees a more active role of the EMF in financial assistance programs (like that of the European Commission). These short-term features would restrict the EMF to providing credit (lines), i.e. loans, to Member States and their banks without including any transfer arrangements between Member States. One additional feature of the proposal might also imply a transfer capacity for the EMF, however: *“Over time, the European Monetary Fund could develop new financial instruments to supplement or support other EU financial instruments and programs, for instance in support of a possible stabilization function in the future”* (European Commission, 2017b, p. 2). Hence, the short-term measures would provide stabilization at the national level by reducing risk, as fiscal and financial problems would not aggravate and spread to other countries, while a future transfer capacity would also incorporate a risk sharing feature.

Bénassy-Quéré et al. (2018) go one step further by attributing the sole responsibility of assistance programs to the ESM/EMF¹⁴ and by making the ESM/EMF directors (to be elected like at the IMF) accountable for these programs to the European Parliament. Moreover, like the European Commission, they suggest extending low-cost ESM/EMF loans to pre-qualified countries in case of large economic shocks, which would turn the ESM/EMF into an institution offering a fiscal capacity (see section 3). To reduce moral hazard from the provision of (emergency) loans, the no bailout rule would have to be credibly enforced. Hence, the proposals would restrict ESM/EMF lending to countries with sustainable debt levels or explicitly require restructuring of debt as a condition for access to ESM lending. The credibility of the no bailout clause can be enhanced by reducing the expected economic disruptions from debt restructuring, which could be achieved by weakening the sovereign-bank nexus and/or by increasing the degree of formal risk sharing. According to Berger et al. (2018, p. 14) *“the presence of a formal arrangement to share some fiscal risk that limited the negative consequences of a default (for example, in the form of a common fiscal backstop for bank resolution and deposit insurance and fiscal transfers linked to the recession) could make default acceptable from an economic and political standpoint.”*

¹² For details on the current design of the ESM, see Katterl and Köhler-Töglhofer (2018).

¹³ The funds should be recovered from banking union members.

¹⁴ Bénassy-Quéré et al. (2018) do not request a name change for the EMF but propose an overhaul of the current ESM, as described above.

2.4 Sovereign debt restructuring mechanisms

Mechanisms for sovereign debt restructuring are considered for various reasons in the context of enhancing stabilization in the euro area (e.g. Bénassy-Quéré et al., 2018; Andritzky et al., 2016). Arguments for the desirability of more debt restructuring do not only include the classic arguments of alleviating the country's debt burden and imposing more market discipline: maturity extensions of existing debt instruments at the beginning of macroeconomic adjustment programs could also significantly reduce the financing needs of program countries and thereby shrink lending by supranational organizations and/or other Member States.¹⁵ Bénassy-Quéré et al. (2018) stress that the exemption of government bonds from concentration risk regulations for the financial sector would have to be abolished; otherwise a single country default might drag banks into bankruptcy. Note that while such a regulatory change would force banks to diversify their government bond holdings, it would not make holding government bonds more expensive per se (in contrast to abolishing the zero risk weights for government bonds denominated in euro). Another strand of the literature does not stress the desirability of restructuring but rather focuses on the framework needed for restructuring: if restructurings take place, they should be conducted orderly and symmetrically (i.e. holdouts of single bonds should be prevented).

Whether a higher frequency of sovereign debt restructuring is desirable and would lead to more or less stabilization is subject to debate. However, when there is a default, it is likely to be less destabilizing when it is orderly and comprehensive. Furthermore, such a mechanism could be a political prerequisite for the introduction (or extension) of other stabilizing mechanisms.

3 Recent proposals for risk sharing via explicit transfers¹⁶

Most proposals for reforming or deepening EMU comprise some form of fiscal risk sharing through a fiscal capacity to stabilize the EU or the euro area in the event of economic shocks. A non-exhaustive list includes the European Commission (2017a, 2017b-e), Berger et al. (2018), Buti (2017), Bénassy-Quéré et al. (2018), Allard et al. (2013), Dullien (2013, 2014) and Dullien et al. (2018). There seems to be a broad consensus that such a capacity should spare the Member State from losing market access and having to resort to the ESM/EMF. Access to the capacity should be based on transparent ex ante conditionalities that contribute to sound public finances, and the capacity should be large enough to provide the necessary stabilization. Moreover, its design should guarantee timely activation and limit moral hazard. However, the existing proposals diverge widely with respect to the following aspects: (1) Should this fiscal support take the form of temporary or permanent transfers,¹⁷ (2) what should trigger it (cyclical asymmetric or also symmetric large economic shocks), (3) should the trigger be automatic or discretionary, (4) should the support be general or earmarked to specific programs like investment protection, and (5) how should the fiscal capacity be financed?

¹⁵ A large part of lending in previous macroeconomic adjustment programs was used for the refinancing of maturing long-term debt.

¹⁶ In the face of the criticism current proposals are met with, one should not forget that also schemes with weak incentives, like the *Finanzausgleich* system of fiscal sharing in Austria, can provide substantial long-term risk sharing and stabilization.

¹⁷ The Five Presidents' Report calls for avoiding permanent transfers (Juncker et al., 2015, p. 15).

In subsections 3.1 to 3.3, we will summarize the key features of the most prominent proposals that involve risk sharing through monetary transfers and go beyond strengthening the existing programs (with a particular focus on European Commission proposals).

3.1 Investment protection

Several authors (e.g. IMF, 2016) advocate the centralized provision of EMU-wide public goods (e.g. defense, border control) or the centralized financing of common investment (e.g. in cross-border networks). A special version of this is an EMU investment protection scheme, which the Commission proposed in its 2017 December package. Even though investment expenditure supports long-term potential growth, it is usually cut first when a country faces consolidation needs (e.g. Eckerstorfer et al., 2017). In order to preserve investment expenditure in the event of large asymmetric shocks, the European Commission put forward two suggestions in its December 2017 package, both designed as risk sharing tools. First, as an immediate risk sharing tool, the European Commission suggests adjusting the requirements of the European Structural and Investment Funds: depending on the circumstances, the EU co-financing rate could be increased or payments from the Funds could be frontloaded. The second proposal, the European Investment Protection Scheme, also aims at supporting well-identified priorities and already planned projects. However, it sets eligibility criteria to access financing, namely compliance with the EU surveillance framework during the period preceding the shock. It suggests automatic triggers for disbursement based on defined parameters (*“for example, based on a large temporary negative deviation from their unemployment or investment trend”*; European Commission, 2017e, p. 14). Financing of the Investment Protection Scheme could take the form of loans (provided by the EMF), grants or reinsurance, where participating Member States contribute prior to becoming eligible for payouts. Hence, the Investment Protection Scheme does not necessarily imply a redistribution of resources among Member States.

However, a trigger based on deviations of actual investment from trend investment is not supportive of minimizing moral hazard. Investment expenditure is a policy variable so policy makers could cut it deliberately to gain access to grants or insurance payouts.

Two other risk sharing tools, a rainy day fund and a European unemployment (re)insurance scheme, are mentioned – albeit not elaborated on – in the December 2017 package. Given the importance of these tools in the policy discussion, we outline the details of these two proposals below.

3.2 Rainy day fund

The rainy day fund, as sketched by the European Commission (2017a) in its reflection paper and by the IMF staff discussion note (Allard et al., 2013)¹⁸, clearly represents a macroeconomic stabilization and risk sharing tool. It collects contributions from Member States and pays transfers to them in case of negative shocks.

¹⁸ Based on the suggestions by the Tommaso Padoa-Schioppa Group (2012).

While the European Commission's proposal would provide for disbursement “*on a discretionary basis to cushion a large shock*” (European Commission, 2017a, p. 26), the tool envisaged by Allard et al. (2013) and Furceri and Zdzienicka (2015) is based on automatic disbursement in the event of a negative output shock, which is defined as either a negative output gap or a growth deviation from historical averages. When there is no negative shock and hence no disbursement, the contributions are saved. Thus, the fund not only provides insurance against country-specific shocks (risk sharing) but also allows for anticyclical policy responses in case of common shocks (stabilization). The European Commission stresses that disbursements of a rainy day fund are usually limited to the overall contributions, which might limit the fund's stabilization capacity. Allard et al. (2013) and Furceri and Zdzienicka (2015) attribute a considerable income and consumption smoothing capacity to rainy day funds. Both papers estimate the contributions needed to achieve a level of stabilization similar to that observed in Germany – where about 80% of regional shocks are smoothed – to 1½–2½% of gross national income (GNI) annually. According to Furceri and Zdzienicka (2015), gross (net) contributions of about 4½% (1½%) of GNI per annum would suffice to fully insure euro area countries against severe downturns.¹⁹ In addition, the European Commission (2017a) and Allard et al. (2013) also consider some – limited – borrowing capacity of the fund to further smooth the impact of shocks.

In the proposals discussed above, the correct and timely trigger of disbursement could be problematic in practice. Discretionary activation might come with decision and implementation lags, while automatic disbursement might be subject to measurement, and hence activation, errors. Moreover, a rainy day fund might generate permanent transfers and thus decrease the incentives Member States have to build national fiscal buffers or engage in necessary structural reforms. Hence, ex ante conditionalities such as sound public finances or (partial) repayment of the distributed funds might be required (see also section 3.3).

3.3 European unemployment (re)insurance

Despite the alternatives mentioned above, a European unemployment insurance (EUI) scheme has often been advocated as the most attractive risk sharing tool. Unemployment (unlike the output gap) is comparatively easy to observe, it generally reacts quickly to cyclical movements, the EU Member States have a broadly harmonized measure of unemployment, the recipients of the benefits are well defined, and unemployment expenditure has a high multiplier effect as it allows for consumption smoothing.

When looking at the growing body of literature²⁰ suggesting some kind of unemployment (re)insurance as a risk sharing mechanism, we have to distinguish between macroeconomic risk sharing schemes (so-called equivalent systems) and true microeconomic unemployment insurance schemes (genuine systems). These mechanisms have in common that they focus more on risk sharing (i.e. handling idiosyncratic shocks to single Member States) than on stabilization after a common shock to the euro area as a whole.

¹⁹ Currently, Austria's annual gross contribution to the EU budget amounts to roughly 1% of GDP.

²⁰ For an overview of different EUI schemes, see Beblavý and Lenaerts (2017).

The setup of an equivalent system is similar to that of a rainy day fund in that it supports Member States and not individuals. A country's EUI contributions are based on its (un)employment developments and/or linked to GDP (Italianer and Vanheukelen, 1993; Beblavý and Maselli, 2014; Beblavý et al., 2015; Dolls et al., 2016b; Carnot et al., 2017; Bénassy-Quéré et al., 2018). The country can still choose how to finance its contributions. Payouts to Member States are also triggered by employment indicators, e.g. changes in the unemployment rate and/or the unemployment level. Even if the fund's payouts are earmarked as unemployment benefits, the Member States are free to decide how to distribute the money exactly.

In contrast, a microeconomic unemployment scheme (genuine system) would rely on a supranational institution to levy unemployment contributions and distribute benefits directly to individuals (Dolls et al., 2016b; Jara and Sutherland, 2014; Dullien, 2014). The Member States would only administer revenue collection and payouts and provide the necessary unemployment information, if at all. Most proposals advocate a European unemployment scheme as the basic scheme, which could be complemented by national schemes.

Avoiding moral hazard is a serious issue when setting up an EUI system, no matter if it is a genuine or an equivalent scheme. The Member States' unemployment schemes differ widely with respect to their generosity and eligibility requirements. Furthermore, the unemployment rate according to the internationally standardized definition may be only loosely correlated with the actual number of recipients of unemployment benefits (Beer et al., 2014). Hence, some common eligibility criteria would be needed, because otherwise countries could claim higher transfers than justified. As indicated by Beer et al. (2014) and Beblavý et al. (2015), an EUI could also prevent governments from taking structural measures to decrease unemployment risks, in particular if these measures involve political costs. Moreover, countries might reduce active labor market policies (such as subsidizing short-time employment) to absorb shocks at the intensive margin, as the common pool only reimburses unemployment benefits but not preventive measures.

As harmonization is vital for a genuine unemployment system but politically unfeasible, the literature has recently focused on equivalent unemployment schemes. To limit moral hazard, proposals for an equivalent EUI usually include ex ante and/or ex post conditionalities. Bénassy-Quéré et al. (2018) and Carnot et al. (2017), among others, suggest compliance with the fiscal rules and country-specific recommendations of the European Semester as a condition for access to EUI funds.²¹ Of course, access is only granted once certain triggers (e.g. unemployment level) have been activated; Carnot et al. (2017) suggest a double trigger that consists in a deviation from long-term average unemployment and the most recent change in unemployment. Furthermore, these more recent proposals (e.g. Bénassy-Quéré et al., 2018; Carnot et al., 2017) design the EUI as a reinsurance scheme or as a combined self-insurance and reinsurance scheme (Dullien et al., 2018). Reinsurance means that the EUI covers only a portion of the losses incurred above a certain threshold; hence, the EUI pays in case of large shocks only. Member

²¹ *The implicit assumption seems to be that the country-specific recommendations would include labor market recommendations if the labor market was strongly unbalanced.*

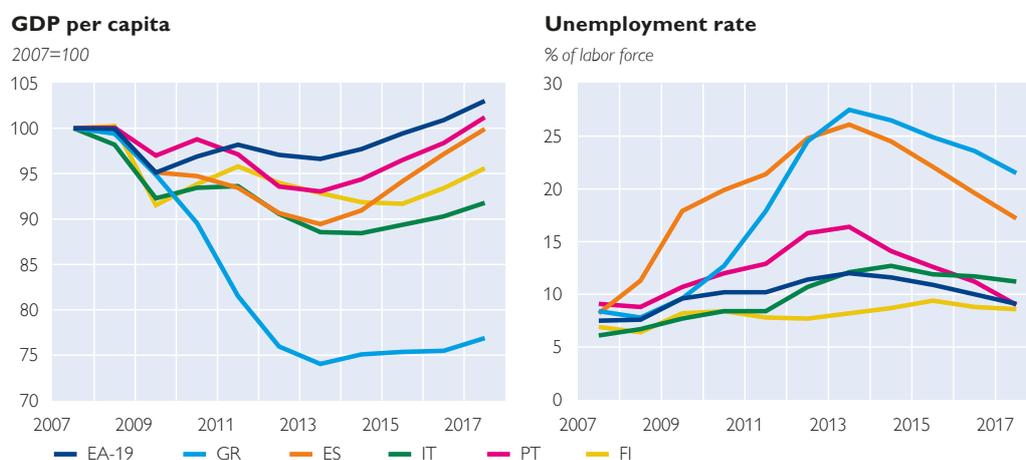
States are still incentivized to reform inefficient labor markets. They have to cover anything below that threshold by using either their national schemes (Bénassy-Quéré et al., 2018; Carnot et al., 2017) or their prior contributions to the part of the EUI dedicated to national self-insurance (Dullien et al., 2018). To avoid permanent transfers, the proposals (for both unemployment schemes) often suggest adjusting a Member State's contribution to its payout likelihood, hence balancing the system *ex ante* (experience rating, e.g. Carnot et al., 2017; Dullien et al., 2018). Clawbacks balance the system *ex post* by adjusting contribution rates to balance past net payouts received by a Member State within a specified period (e.g. Dullien, 2014; Dolls et al., 2016b; Beblavý et al., 2015; Dullien et al., 2018). In their comparison of 18 EUI variants that all include either experience rating or clawbacks, Beblavý and Lenaerts (2017) consider experience rating to be more useful, as it allows for more gradual adjustment than claw-backs.

While limiting moral hazard and permanent transfers, experience rating or clawbacks also limit risk sharing and hence the stabilization capacity when countries are hit by long-lasting shocks (section 3.5). However, if access to the EUI is conditioned on sound public finances, Member States might be more resilient to shocks even without resorting to the EUI (Bénassy-Quéré et al., 2018), and such risk might be reduced *ex ante*.

Another issue to consider is that Member States' labor markets react very differently to downturns (chart 4). For example, Finland and Spain had relatively similar unemployment rates in 2007, and Finland had somewhat lower growth in GDP per capita than Spain after 2007. However, Finland's unemployment rate remained below 10% throughout the crisis, while that of Spain temporarily exceeded 25%. An unemployment reinsurance scheme as those described earlier would have granted much higher transfers to Spain than to Finland. This is quite problematic as GDP is a much better proxy for tax base growth (and therefore tax revenue growth in the absence of discretionary measures) than the unemployment rate. Hence, while Finland would have needed transfers about as much as Spain to keep up revenues, Spain would have received more from an EUI.

Chart 4

Economic performance in selected euro area countries since 2007



Source: Eurostat.

4 Limiting moral hazard vs. improving risk sharing and stabilization capacity

As indicated in the previous section, most of the recent proposals focus mainly on how to avoid permanent transfers and limit moral hazard, which most likely reflects current political preferences. However, allowing countries to be permanent net recipients or net contributors considerably improves a scheme's stabilization and risk sharing capacity. Furthermore, a scheme's stabilization properties also depend on its sources of financing.

4.1 Cyclical contributions to a fiscal capacity already provide risk sharing

All the mechanisms discussed in section 3 would need to be financed. The same is true for a centralized EMU budget (or an enlarged EU budget) that provides public goods (e.g. defense). As long as a new mechanism or the euro area (or EU) budget are financed via cyclical contributions, automatic risk sharing would increase, regardless of whether the additional revenue was used for larger transfers to poorer Member States, acyclical lump-sum transfers based on population size or the provision of public services (like border protection). The financing options proposed in the literature range from using existing instruments (the ESM, an extended EU budget), designing new instruments to dedicating a specific source (or a share thereof) to the fiscal capacity.

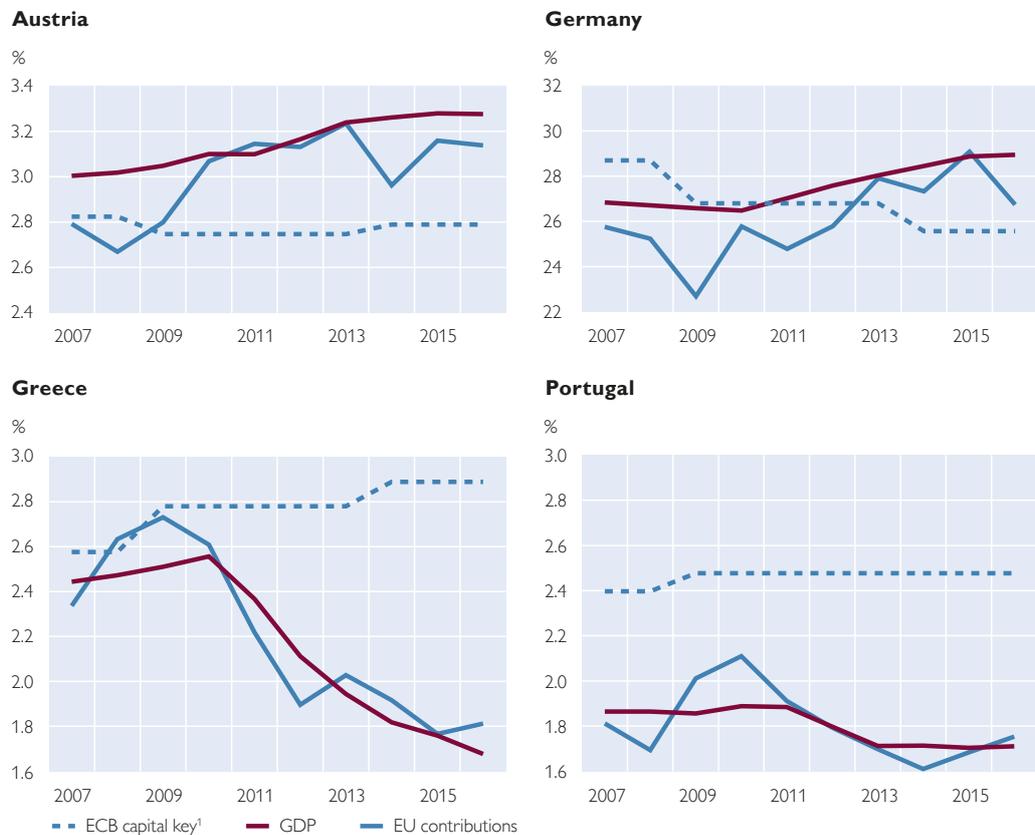
- **Own taxes:** to restrict tax competition, the fiscal federalism literature (e.g. Oates, 1972) usually calls for taxes on highly mobile assets to be allocated to the highest level of government. In addition, taxes on economic bads with large externalities (e.g. emissions) should be levied by the highest level of government to internalize externalities properly. The European Commission (2018a) recently suggested attributing to the EU part of corporate taxation based on a common consolidated corporate tax base (including the digital tax) as well as revenues from emission trading schemes, which seems in line with fiscal federalism literature. In case the fiscal capacity were to be designed as a genuine unemployment insurance system (microeconomic approach), it could be financed by earmarked unemployment insurance contributions levied on an individual basis.
- **GNI/GDP share:** most authors suggest basing a country's contributions to the fiscal capacity on its GNI/GDP. The share itself could be fixed or it could depend on another variable, e.g. unemployment volatility (Carnot et al., 2017).²² This allows the country to choose how to finance its contributions, and it allows for cyclical variations.

While these two types of financing sources would differ substantially in terms of administrative implementation, they would all contribute to risk sharing. The case is simplest for GNI-based contributions (like in the current EU budget framework) or GDP-based contributions. A decline in a country's share in the euro area (or EU) GNI would lead to a decline in its share in contributions paid (chart 5) but not to a decline in the public services and transfers provided by the euro area (EU) budget.

Using actual taxes instead would mean that contributions depend on the cyclicity of the respective taxes shared. If we take at face value the OECD's

²² Suggested contributions are in the order of 0.1% of GNI/GDP (Bénassy-Quéré et al., 2018) or 0.5% of GDP multiplied by the change in the unemployment rate (Carnot et al., 2017) per year.

Share of Member States in the EA-19 from 2007 to 2016



Source: ECB, Eurostat.

¹ We also indicate the share in the EA-19 for the capital key before 2015 (to account for EMU enlargements).

estimates of fiscal sensitivities (Price et al., 2014), using corporate taxes would enhance risk sharing more than unemployment insurance contributions or environmental taxes. However, as mentioned above, risk sharing properties are not the only criteria for choosing the appropriate tax base; externalities play a crucial role, too.

4.2 Permanent transfers would enhance risk sharing

Increasing the size of the EU budget (or constructing a euro area budget) would typically imply permanent transfers, with high-income countries like Austria or Germany being net payers and low-income countries like Greece or Portugal being net recipients.²³ Note that schemes like the EU budget or revenue sharing mechanisms in genuine fiscal federations, where states/countries with high (low) per-capita income are permanent net payers (net recipients), are also stabilizing for the net payers as net contributions would decline if they were hit by an adverse regional shock. However, several prominent proposals (including the Five

²³ This assumes that the enlarged EU budget or a new euro area budget would work like the current EU budget (i.e. income-dependent contributions and own taxes as the financing source, expenditure for common functions and transfers to poorer states) or like a (small-scale) federal budget in a typical fiscal federation (i.e. financed by taxes which are not lump sum).

Presidents' Report, see Juncker et al., 2015, p. 15) call for avoiding permanent transfers. Allowing for permanent transfers has substantial implications for risk sharing. If a scheme were designed such that average net transfers by all countries were zero in the medium run, then the transfers would de facto become loans. While such loans have the advantage of being disbursed more automatically than loans in adjustment programs, the former would also be much smaller than the ones granted in adjustment programs (where large loans are typically necessary just to refinance a country's existing debt).

If economic and financial problems are of a short-term nature and if countries build sufficient buffers in good times, then they should be able to deal with these problems by themselves. This was the case in Germany, which faced the second-largest GDP decline in 2009 among the larger euro area economies (after Finland). Its relatively large buffers allowed the country to let automatic stabilizers operate freely and pass some additional stimulus measures. Germany has often been asked (e.g. by the European Commission, 2016, 2017f) to reduce its buffers despite its good cyclical position, though, so there seems to be a preference against building buffers at the national level. Buffers at the national level may not be sufficient in case of longer slumps like those observed in Italy or Greece. However, in such cases, loans or temporary transfers might not be sufficient for stabilizing a country, in particular if the repayment conditions were not designed properly.

This tradeoff between stabilizing the Member States and avoiding redistribution becomes evident when we look at the various EUI suggestions, which tend to avoid (large) permanent transfers. Beblavý and Lenaerts (2017) report that a high payout trigger threshold would reduce the costs, as payouts would be made to a few countries only and infrequently. However, the EUI's stabilization capacity would be limited to 0.09% of GDP, compared with 0.21% of GDP for low trigger thresholds for equivalence schemes (based on the 19 euro area countries' GDP level in the period 1995–2013). Clawbacks (see section 3.3) would be even more effective at avoiding permanent transfers, but they might risk destabilizing a country if not designed properly. A suggestion put forward by e.g. Dullien et al. (2018) includes a dynamic clawback system that requires Member States to pay back money once the net payouts to them exceed a certain threshold and unemployment has improved. This particular suggestion implies that Greece would have received transfers in 2015 (as its unemployment rate was above the average of the previous five years), but it would have had to pay higher contributions due to the previous long-term payout (as its unemployment rate was below the average of the past three years).

This type of ex post neutrality would also make the term “insurance” misleading, as insurance policies granted by private corporations are only neutral ex ante: when such policies are set up, expected net transfers by all insured members would be close to zero, but ex post some members would be net recipients and others net payers. In the absence of legacy issues (e.g. nonperforming loans in banks' balance sheets), a common deposit insurance scheme may qualify as such an insurance. However, such genuine insurance schemes might be questioned politically if they implied that ex post some high-income countries (such as France or Germany) would become permanent net recipients and some low-income countries (such as Estonia or Greece) permanent net payers, even when accounting for payments from the EU budget. This would run contrary to genuine fiscal federations, where

high-income states (like Bavaria or California) would still be likely to remain overall net payers and low-income states (like Berlin or Mississippi) would still be overall net recipients, even if the former received higher net transfers from federal unemployment or deposit insurance.

4.3 Schemes allowed to run deficits provide more stabilization

From a pure fiscal stabilization perspective, it appears counterproductive that the EU budget cannot run budget deficits in case of negative shocks that affect all (or most) EU Member States, as was the case in 2009 or 2012/13. Allowing members to simply not pay any contributions might be an option in such cases. This would recast the EU (euro area) to fit the definition of an actual fiscal federation, where, according to Poghosyan et al. (2015), stabilization via the federal government tends to dominate risk sharing between state governments.

Such a scheme would create some deficit bias at the EU (euro area) budget level. This might have the effect of reducing Member States' average deficits and to create common EU (euro area) debt, possibly in the form of some kind of Eurobond. The latter (unlike the Eurobonds discussed in section 2.2) would be backed by the EU (euro area) budget, which would be decided upon by European institutions. Thus a deficit bias at the central level would align the EU more closely with a typical fiscal federation, where the central government owes most of the debt and federal states do not guarantee the debt of other states. The same arguments would obviously hold for all facilities described in sections 3.1 to 3.3.

5 Conclusions

The dismal economic performance of the euro area in 2012/13 was, in part, down to high consolidation and its uneven distribution across countries as well as high risk premiums on government debt. This paper looks at various suggestions on how to avoid a repeat of such developments. Some prominent proposals, such as strengthening fiscal rules in good times, do not involve monetary transfers, which probably makes them easier to pass while still providing a reasonable degree of risk reduction. However, building fiscal buffers in good times seems politically difficult in many countries, even though countries like Greece, France, Italy, Austria and Portugal would have had to consolidate much less in the early 2010s had their pre-crisis fiscal positions been as good as those of Germany or Finland. Another interesting proposal is the extension of the European Stability Mechanism. In contrast, the various proposals involving Eurobonds appear ambiguous in terms of their direct effects on sovereigns.²⁴

Many proposals comprise some form of fiscal risk sharing and involve explicit transfers through rainy day funds, investment protection schemes or some kind of European unemployment insurance. While we do not dispute that transfers among Member States could help avoid another crisis like the one observed in 2012/13, the concrete proposals suffer from several limitations. The indicators on which payouts to Member States would be based in these recent proposals either suffer from moral hazard (public investment, unemployment rate), from a lack of observability in real time (output gap, public investment) or from large cross-country heterogeneity in the labor market structure (unemployment rate).

²⁴ *ESBies may help reduce the risks for the banking sector, however.*

Furthermore, in line with current political preferences, the discussion of these mechanisms mainly focuses on how to avoid permanent transfers and how to limit moral hazard. However, allowing for the possibility of countries being permanent net recipients or contributors would enhance the stabilization capacity considerably. Moreover, if schemes with explicit transfers were also allowed to run budget deficits in bad times, this would improve stabilization properties (at least as long as this is compensated for by lower average deficits at the national level over the business cycle). The latter two features would be more in line with the setup of existing fiscal federations.

References

- Allard, C., P. Koeva Brooks, J. C. Bluedorn, F. Bornhorst, K. Christopherson, F. Ohn-
sorge, T. Poghosyan and an IMF Staff Team. 2013.** Toward a Fiscal Union for the Euro
Area. IMF Staff Discussion Note 13/09.
- Andritzky J., D. I. Christofzik, L. P. Feld and U. Scheuering. 2016.** A Mechanism to Reg-
ulate Sovereign Debt Restructuring in the Euro Area. German Council of Economic Experts
Working Paper 04/2016.
- Beblavý, M. and K. Lenaerts. 2017.** Feasibility and added value of a European unemployment
benefits scheme: Main findings from a comprehensive research project. Brussels: European
Commission.
- Beblavý, M. and L. Maselli. 2014.** An Unemployment Insurance Scheme for the Euro Area: A
simulation exercise of two options. CEPS Special Report 98.
- Beblavý, M., G. Marconi and I. Maselli. 2015.** A European Unemployment Benefits Scheme:
The rationale and the challenges ahead. CEPS Special Report 119.
- Beer C., W. Köhler-Töglhofer and A. Stiglbauer. 2014.** A Common European Unemploy-
ment Insurance – A Much Debated Route toward European Fiscal Union. In: Monetary Policy &
the Economy Q4/14. Vienna: OeNB. 35–52.
- Bénassy-Quéré, A, M. K. Brunnermeier, H. Enderlein, E. Farhi, M. Fratzscher, C.
Fuest, P.-O. Gourinchas, P. Martin, J. Pisani-Ferry, H. Rey, I. Schnabel, N. Véron,
B. Weder di Mauro and J. Zettelmeyer. 2018.** Reconciling risk sharing with market disci-
pline: A constructive approach to euro area reform. CEPR Policy Insight 91.
- Berger, H., G. Dell’Ariccia and M. Obstfeld. 2018.** Revisiting the Economic Case for Fiscal
Union in the Euro Area. IMF Departmental Paper Series 18/03.
- Brunnermeier, M. K., S. Langfield, M. Pagano, R. Reis, S. Van Nieuwerburgh and D.
Vayanos. 2016.** ESBies: Safety in the tranches. ESRB Working Paper Series 21 / September 2016.
- Buti, M. 2017.** Deepening the Economic and Monetary Union: the EU priorities by 2025 and be-
yond. SUERF Policy Note 22.
- Carnot, N., M. Kizior and G. Mourre. 2017.** Fiscal stabilisation in the Euro-Area: A simulation
exercise. Working Papers CEB 17-025.
- Claeys, G., Z. Darvas and Á. Leandro. 2016.** A proposal to revive the European Fiscal
Framework. Bruegel Policy Contribution 2016/07.
- Cordes, T., M. Guerguil, L. Jaramillo, M. Moreno-Badia and S. Ylaoutinen.
2015.** Subnational fiscal crises. In: Cottarelli, C. and M. Guerguil (eds.). Designing a European
Fiscal Union. Lessons from the experience of fiscal federations. New York: Routledge Studies in
the European Economy.
- Delpla, J. and J. von Weizsäcker. 2011.** Eurobonds: The Blue Bond concept and its implications.
Bruegel Policy Contribution 2011/02.

- Dolls, M., C. Fuest, F. Heinemann and A. Peichl. 2016a.** Reconciling Insurance with Market Discipline: a Blueprint for a European Union. CESifo Working Paper Series 5767.
- Dolls, M., C. Fuest, D. Neumann and A. Peichl. 2016b.** An Unemployment Insurance Scheme for the Euro Area? A Comparison of Different Alternatives Using Micro Data. Revised version of CESifo Working Paper 5581. Munich: CESifo.
- Dullien, S. 2013.** A euro-area wide unemployment insurance. Paper prepared for the DG for Employment, Social Affairs and Inclusion. Brussels: European Commission.
- Dullien, S. 2014.** Preventing permanent transfers under a European Unemployment Insurance: Can a claw-back mechanism be the answer? Presentation at the conference “Economic shock absorbers for the Eurozone: Deepening the debate on automatic stabilisers” in Brussels on June 20.
- Dullien, S., J. Fernández, M. López, G. Maass, D. del Prado and J. von Weizsäcker. 2018.** Fit for purpose: a German-Spanish proposal for a robust European Unemployment Insurance. Madrid: Friedrich-Ebert-Stiftung.
- Eckerstorfer, P., D. Prammer and L. Reiss. 2017.** Three small essays on public investment: economic rationales, the EU fiscal framework and some statistical comparisons. In: Monetary Policy & the Economy Q4/17. Vienna: OeNB. 32–47.
- Escolano, J., D. Benedek, H. Jin, C. M. Granados, M. Nozaki, J. Pereira, G. Rota Graziosi, L. Sinn and J. Torres. 2015.** Distribution of fiscal responsibilities in federations. In: Cottarelli, C. and M. Guerguil (eds.). Designing a European Fiscal Union. Lessons from the experience of fiscal federations. New York: Routledge Studies in the European Economy.
- European Commission. 2011.** Public Finances in EMU 2011.
- European Commission. 2012.** A blueprint for a deep and genuine economic and monetary union: Launching a European Debate. COM(2012) 777 final/2. November 30.
- European Commission. 2016.** Recommendation for a Council Recommendation on the 2016 national reform programme of Germany and delivering a Council opinion on the 2016 stability programme of Germany.
- European Commission. 2017a.** Reflection paper on the deepening of the Economic and Monetary Union. COM(2017) 291. May.
- European Commission. 2017b.** Communication on further steps towards completing the Economic and Monetary Union. COM/217/821.
- European Commission. 2017c.** Proposal for a Council Regulation on the establishment of the European Monetary Fund. COM/2017/0827 final.
- European Commission. 2017d.** A European Monetary Fund. https://ec.europa.eu/commission/sites/beta-political/files/european-monetary-fund_en.pdf.
- European Commission. 2017e.** Communication: New Budgetary Instruments for a stable euro area within the union framework. COM/2017/0822 final.
- European Commission. 2017f.** Recommendation for a Council Recommendation on the 2017 National Reform Programme of Germany and delivering a Council opinion on the 2017 Stability Programme of Germany.
- European Commission. 2018a.** A new, modern Multiannual Financial Framework for a European Union that delivers efficiently on its priorities post-2020. The European Commission's contribution to the Informal Leaders' meeting on February 23. https://ec.europa.eu/commission/sites/beta-political/files/communication-new-modern-multiannual-financial-framework_en.pdf.
- European Commission. 2018b.** Vade Mecum on the Stability and Growth Pact – 2018 Edition. Institutional Paper 075. March.
- Eyraud, L. and R. Gomez Sirera. 2015.** Constraints on subnational fiscal policy. In: Cottarelli, C. and M. Guerguil (eds.). Designing a European Fiscal Union. Lessons from the experience of fiscal federations. New York: Routledge Studies in the European Economy.

- Furceri, D. and A. Zdzienicka. 2015.** The Euro Area Crisis: Need for a Supranational Fiscal Risk Sharing Mechanism? *Open Economics Review* 26(4).
- IMF. 2016.** Euro Area Policies, Selected Issues. IMF Country Report 16/220.
- Italianer, A. and M. Vanheukelen. 1993.** Proposals for community stabilization mechanisms: Some historical applications. *The Economics of Community Public Finance, European Economy: Reports and Studies* 5. Brussels: European Commission.
- Jara Tamayo, H.X. and H. Sutherland. 2014.** The implications of an EMU unemployment insurance scheme for supporting incomes. *EUROMOD Working Paper EM5/14*.
- Juncker, J.-C., D. Tusk, J. Dijsselbloem, M. Draghi and M. Schulz. 2015.** The Five Presidents' Report: Completing Europe's Economic and Monetary Union. Brussels: European Commission.
- Katterl, A. and W. Köhler-Töglhofer. 2018.** Shock prevention and shock absorption instruments – the status quo. In: *Monetary Policy & the Economy Q2/18*. Vienna: OeNB.
- Oates, W. E. 1972.** *Fiscal Federalism*. Books. Cheltenham: Edward Elgar Publishing Ltd. Number 14708. April.
- Palomba, G., E. Jenkner, J. Menkulasi and S. Sola. 2015.** Financing of central and subnational governments. In: Cottarelli, C. and M. Guerguil (eds.), *Designing a European Fiscal Union. Lessons from the experience of fiscal federations*. New York: Routledge Studies in the European Economy.
- Philippson, T. and C. Hellwig. 2011.** Eurobills, not Eurobonds. *VOX CEPR's Policy Portal*. <https://voxeu.org/article/eurobills-not-euro-bonds>.
- Poghosyan, T., A. Senhadji and C. Cottarelli. 2015.** The role of fiscal transfers in smoothing regional shocks. In: Cottarelli, C. and M. Guerguil (eds.), *Designing a European Fiscal Union. Lessons from the experience of fiscal federations*. New York: Routledge Studies in the European Economy.
- Prammer, D. and L. Reiss. 2016.** The Stability and Growth Pact since 2011: More complex – but also stricter and less procyclical? In: *Monetary Policy & the Economy Q1/16*. Vienna: OeNB. 33–53.
- Price, R. W., T.-T. Dang and Y. Guillemette. 2014.** New Tax and Expenditure Elasticity Estimates for EU Budget Surveillance. *OECD Economics Department Working Papers* 1174.
- Rodden, J. and E. Wibbels. 2010.** Fiscal Decentralization and the Business Cycle: An Empirical Study of Seven Federations. *Economics and Politics* 22(1). 37–67.
- S&P. 2017.** How S&P Global Ratings Would Assess European “Safe” Bonds (ESBies). *RatingsDirect*.
- Tommaso Padoa-Schioppa Group. 2012.** Completing the Euro: a Roadmap toward Fiscal Union in Europe. June 26. <http://www.eng.notre-europe.eu/011-3317-Completing-the-EuroA-road-map-towards-fiscal-union-in-Europe.html>.