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Risk sharing in the eurozone: which way forward?

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William De Vijlder

The debate on risk sharing in the eurozone has intensified significantly in recent years. It is an acknowledgment that the eurozone "house" needs to be made more solid but also reflects the concern about limited policy leeway to address future economic downturns. Risk sharing can be public or private sector based and, within each channel, either domestic or cross-border. Public cross-border risk sharing will have an important role to play in strengthening the functioning of the eurozone. However, the challenge is considerable because it raises questions of pre-commitment, conditionality, moral hazard and governance. Finally, risk sharing needs to be considered together with risk prevention, risk management and boosting resilience.

Several factors explain why the debate on risk sharing in the eurozone has gained considerable traction in recent years in academic and policy circles: the widespread view that the eurozone is not an optimal currency union, the acknowledgment that the eurozone "house" needs to be made more solid, the hangover of the sovereign debt crisis and concern about limited policy leeway to fight the next recession when it comes. A recent IMF paper neatly summarizes what can be considered to be the heart of the matter: *"The stability of a monetary union depends on the capacity to deal with idiosyncratic shocks affecting its member countries in the absence of independent monetary policy. Furthermore, wage and price rigidities and limited labour mobility ... reduce the ability of a country to adjust to idiosyncratic shocks. In this context, the existence of risk sharing mechanisms for achieving income insurance and consumption smoothing is essential."*¹ Depending on the progress that will be made in this debate, the implications for households, companies, the public sector and financial markets as well can be profound. In the aggregate, they can range from a structural reduction in realised economic risk with positive consequences for growth and recurrent questions about the future functioning of the EMU that could lead to an increase in structural uncertainty with negative consequences for growth.

Optimum currency area and risk sharing

In the theory of an optimum currency area (OCA), the word 'optimum' refers to the properties of an OCA: *"mobility of labour and other factors of production, price and wage flexibility, economic openness, diversification in production and consumption, similarity in inflation rates, fiscal integration and political integration."*² When countries share these characteristics, the need for exchange rate adjustment is reduced and a common currency can be introduced. Structural differences with other members should not stop a country from joining a currency area provided there is enough financial integration, which allows international risk sharing mechanisms. *"Risk sharing means that an entity acquires a claim on the future revenue streams of other entities which are not*

*correlated with its own primary source of income, allowing it to smooth out fluctuations in the amount of goods and services it consumes over time."*³ These mechanisms are necessary to cope with differences in terms of sensitivities to eurozone-wide shocks and to the divergent reactions to the common monetary policy. In addition, the possibility of asymmetric, country-specific shocks raises the need for risk sharing given the absence of monetary policy autonomy at the individual country level unless fiscal policy would benefit from enough leeway. However, in most countries, such leeway ranges from limited to non-existent.

Some heterogeneity in terms of cyclical position or structural characteristics can actually enhance risk diversification opportunities and hence risk sharing via international investments. This is a simple application of modern portfolio theory: an investor hitherto exclusively exposed to domestic income streams can diversify and reduce his risk by investing internationally to the extent that the income streams are imperfectly correlated. In case of a country-specific shock, the international diversification will cushion the negative impact on the return on the investor's portfolio. *"This implies that the functioning of both the OCA theory and the international risk-sharing theory prescribes market integration but for different, and even opposite, purposes. While becoming an OCA implies further flexibility for better synchronization of business cycles, the risk-sharing approach focuses on the cross-country synchronization of consumption, taking differences in output growth as an opportunity for diversification."*⁴

Types of risk sharing

International investments are only one of several channels of risk sharing. As shown in exhibit 1, a distinction can be made between four types of risk sharing, depending on whether the channel is private or public and, within a given channel, whether the risk sharing is domestic or cross border.

¹ Davide Furceri and Aleksandra Zdzienicka (2013), *The Euro Area Crisis: Need for a Supranational Fiscal Risk Sharing Mechanism?*, IMF Working Paper 13/198

² Francesco Paolo Mongelli (2002), *'New' views on the optimum currency area theory: what is EMU telling us?*, ECB Working Paper 138

³ European Commission (2007)

⁴ Cinzia Alcidi, Paolo D'Imperio and Gilles Thirion (2017), *Risk-sharing and Consumption-smoothing Patterns in the US and the Euro Area: A comprehensive comparison*, CEPS working document, No 2017/04



Types of risk sharing

	Cross border	Domestic
Private	Asset channel Funding channel Labour market channel	Savings channel Credit market channel
Public	Transfers Temporary funding Rainy day funds Union-wide countercyclical policy	Countercyclical policy Automatic stabilisers

Exhibit 1

Source: BNP Paribas and references in the main text

Private cross-border risk sharing

This type of risk sharing can operate through an asset channel, a funding channel and a labour market channel. The first corresponds to the description in the previous paragraph: households of a given country directly or indirectly invest in financial markets abroad, which implies risk diversification to the extent that the returns on domestic investments are imperfectly correlated with the returns on foreign investments. The latter could be in another currency, but this could imply that the risk reduction generated by the imperfectly correlated assets is annihilated by the introduction of currency risk (unless this would be hedged on a permanent basis). 'Foreign' could also mean another country in the eurozone. Farhi and Werning (2017)⁵ show that *"This gives rise to an aggregate demand externality ex ante: the social benefits from international risk sharing are greater than what is appreciated by private economic agents, since they do not internalize these indirect macroeconomic stability effects and only value the direct microeconomic consumption smoothing role."* The indirect macroeconomic stability effects refer to the cushioning of the idiosyncratic shock, which will be welcomed not only by the country hit by the shock but also by its trading partners in the currency union. For this reason, the authors advocate that governments stimulate international investments within the currency union.

The funding channel works through cross-border bank credit and capital markets (bond and equity issuance) and is particularly relevant for companies. The risk sharing is of a particular nature here: rather than cushioning the impact of an idiosyncratic shock on corporate profits, it consists of providing uninterrupted access to financing by diversifying the financing sources internationally: domestic sources may dry up because of a credit crunch and/or a jump in interest rates following a country-specific shock.

Going forward, the European Banking Union and the Capital Markets Union will play a key role in using this type of risk sharing to its full extent.

Finally, the labour market channel or labour compensation channel of risk sharing consists of citizens of a given country working abroad as commuters or expats, of people who send remittances to their families in their country of origin or simply of people who have decided to migrate to and work in another country to escape from difficult economic conditions in their country of origin. *"This channel requires free movement of labour as well as the prerequisites for a high degree of labour mobility, among which are investment in human capital, flexibility in compensation and hours worked, portability of social security rights, and facilitated firm entry and exit."*⁶

Private domestic risk sharing

In this case, risk sharing is of an intertemporal nature: in order to reduce the impact of a country-specific shock on their consumption, households borrow, reduce their savings rate or sell assets. For these reasons, this channel is also called the consumption-smoothing channel, savings channel or credit market channel.

Public cross-border risk sharing

In theory, this could consist of permanent or temporary transfers, temporary funding including via international organizations, rainy day funds or even a union-wide countercyclical fiscal policy. In reality the menu will be shorter because of concerns about moral hazard, free-riding behaviour, accountability and debt mutualisation: *"The public channels of cross-border risk sharing require a great deal of solidarity among the partners and naturally involve a higher degree of political and institutional integration between them, including a system of common decision-making that ensures democratic legitimacy and accountability."*⁷

Public domestic risk sharing

This is traditionally the case of countercyclical fiscal policy. Public sector borrowing is used to maintain or even increase government expenditures and to finance the operation of the automatic stabilisers. However, the possibilities to do so may be constrained by the absence of policy leeway. Increasing concerns about debt sustainability could trigger big increases in bond yields, and this self-reinforcing spiral might itself end up triggering a funding crisis.

⁵ Farhi, E. and I. Werning (2017), *Fiscal Unions*, NBER Working Paper No. 18280

⁶ European Commission (2016), *Cross-border risk sharing after asymmetric shocks: evidence from the euro area and the United States*, Quarterly Report on the Euro Area, Volume 15 No 2

⁷ European Commission (2016)



Empirical estimates of the extent of risk sharing

Empirical research on the relative importance of risk sharing mechanisms traditionally follows the approach adopted in the seminal paper of Asdrubali et al (1996)⁸ by decomposing GDP into different aggregates

$$GDP = \frac{GDP}{NI} \cdot \frac{NI}{DNI} \cdot \frac{DNI}{DNI + G} \cdot \frac{DNI + G}{C + G} \cdot (C + G)$$

with GDP = gross domestic product, NI = net national income, DNI = disposable national income, G = government consumption, C = private consumption.

*"The ratios on the right-hand side can be interpreted as specific channels through which risk is absorbed. The first ratio, GDP/NI, accounts for income insurance stemming from internationally diversified investment portfolios. This is because NI measures the income (net of depreciation) earned by residents of a country, whether generated on the domestic territory or abroad, while GDP refers to the income generated by production activities on the economic territory of the country... The ratio NI/DNI, instead, can be interpreted as the public insurance channel due to government taxes and transfers as DNI is the income that households are left with after subtracting taxes and adding transfers. Finally, the ratios DNI/(DNI+G) and (DNI+G)/(C+G) account for smoothing through respectively public and private saving channels."*⁹

Empirical estimates

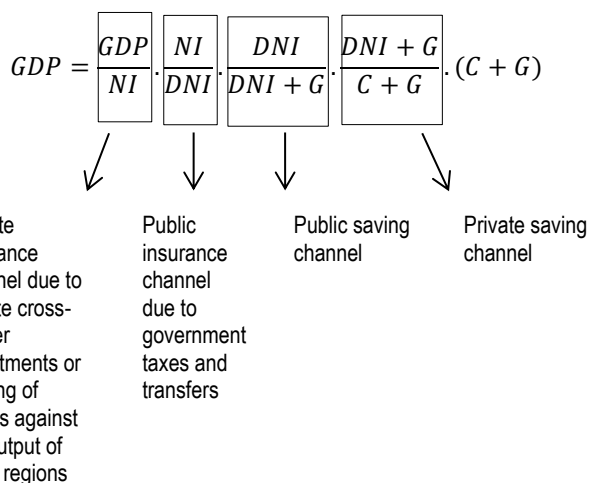


Exhibit 2

Source: Ferrari and Rogantini Picco (2016)

⁸ Pierfederico Asdrubali, Bent E. Sorensen and Oved Yosha (1996), *Channels of interstate risk sharing: United States 1963-1990*, The Quarterly Journal of Economics

⁹ Alessandro Ferrari and Anna Rogantini Picco (2016) *International risk sharing in the EMU*, ESM Working Paper 17

The empirical literature is quite sizeable. The appendix provides a non-exhaustive overview based on various (recent) articles and papers¹⁰. In summary, they show that

1. A significantly higher percentage of shocks are smoothed in the US compared with that of the eurozone
2. The channels of consumption smoothing are also different. In the US capital markets play a considerable role. In the eurozone, capital market-based risk sharing plays a very limited role, but public sector-based risk sharing is significant
3. Following the Great Recession, a distinction needs to be made within the eurozone between core countries and the ones on the periphery. In the latter, national government policy was procyclical, creating dis-smoothing, but loans from European institutions allowed the smoothing of consumption.

According to IMF (2013), the eurozone lacks the degree of risk sharing seen in federations (countries) like the U.S., Canada and Germany that smooth about 80 percent of local shocks whereas the euro area only insulates half of that number: *"in other words, when GDP contracts by 1 percent in one of the euro area countries, households' consumption in that country is depressed by as much as 0.6 percent (as opposed to 0.2 percent in the U.S., Canada and Germany)."* Moreover, capital markets play a limited role because of, relatively speaking, more limited cross-border ownership of assets. *"To the extent that there is insulation from negative shocks in the euro area, it occurs through cross-border saving and borrowing. Yet, this channel tends to break down in periods of severe downturns and financial crisis when risk sharing is most needed, as international credit markets become unwilling to grant loans (Furceri and Zdzienicka, 2013). The current crisis was no exception, as evidenced by the freezing of financial markets in the euro area periphery."* Finally, they note the almost non-existence of cross-country fiscal risk sharing, both in the EU and the eurozone. *"This is not surprising given the small size of the EU budget, its focus on harmonizing living standards (through the structural and cohesion funds) as opposed to providing risk sharing, and the overall limited transfer of fiscal authority to the EU level."*

In a recent important paper, Cimadomo et al. (2018) use a different empirical approach and find a significantly higher degree of risk sharing. They start from the observation that in case of perfect risk sharing, running a regression between differences between eurozone members in terms of per capita consumption (dependent variable) and differences in per capita output growth (explanatory variable) would give a beta coefficient equal to zero (no correlation). Clearly the regression coefficient could be different from zero for other reasons than imperfect risk-sharing which is why they use several control variables (differences in taxation, in bond yields, etc.). To assess the existence of private risk sharing they include BIS data on cross-border bank loans as well as IMF data on international financial instrument holdings. Public risk sharing is captured via data on assistance from the EFSF and the ESM. They find that *"in the early years of the EMU only about 40% of country-specific output shocks were smoothed."* Following the eurozone sovereign crisis, 65% of these shocks were smoothed, a result which is

¹⁰ Ioannou and Schäfer (2017) also provide an overview of the literature on risk sharing.



due to increased financial integration and the activation of loans from the EFSF and the ESM. Interestingly, *“as regards private channels of risk sharing, crossborder holdings of equity and debt seem to be the most effective in smoothing consumption. This latter finding is particularly strong when we focus on the links between “Core” and “Periphery” EMU countries.”* Their calculations show that cross-border bank loans are pro-cyclical and *“tend to generate some shock amplification rather than shock absorption.”*

The future for risk sharing in the eurozone

Risk sharing is all the more important when a country is member of a monetary union. By construction, the common monetary policy reduces the autonomy of policy at the national level so risk sharing is necessary to soften the impact of asymmetric shocks as well as the divergent impact of commonly experienced shocks. Given the low level of risk sharing found in many papers, the key question for the eurozone is how to increase it. What follows builds on exhibit 1 by listing possible ways to do so.

Private/cross border

In a currency union, enhancing the *asset channel* by stimulating cross-border investing begs the question of the correlation between markets, at least in normal times: international diversification of the sovereign bonds of eurozone members will cause only limited risk reduction because there is a high degree of correlation amongst them. This would be different, however, in the case of an idiosyncratic shock that, by way of example, generates a funding crisis: with part of the public sector debt held abroad (because domestic investors have diversified their holdings internationally), the mark-to-market losses reflected by the spike in bond yields are shared internationally rather than being borne exclusively by the investors of the country of issuance. However this could give rise to contagion effects, as was seen during the eurozone sovereign debt crisis. International diversification can become very selective with investors opting for the safest sovereign issuers from the perspective of tail risk hedging rather going for return enhancement (in which case, one prefers riskier issuers). For this same reason, it can become very tactical because of the opportunity cost of investing in low-risk and hence low-yielding sovereign paper when markets are quiet and risk appetite is high. Tactical risk diversification then implies sudden significant cross-border portfolio reallocations and can lead to sudden halts in capital flows.¹¹

Putting in place cross-border risk sharing by means of equity investments may hit practical hurdles: companies may already have a diversified international economic exposure (which reduces the need for international investments at the household level). Moreover, companies

of large countries may be overrepresented in popular international equity indices, making it more difficult for the residents of these countries to put risk diversification strategies in place (because of the impact on the tracking error of a portfolio¹²). This would limit risk sharing opportunities via eurozone equity markets.

Developing the role of the funding channel, which works through cross-border bank credit and capital markets (bond and equity issuance), seeks to ensure uninterrupted access to financing by internationally diversifying the financing sources. Finalising the European Banking Union and establishing a Capital Markets Union are key in this respect. The topic of banking union was addressed by Mark Carney in a speech in 2014¹³: *“Effective currency unions need a wide range of institutions to support an integrated and efficient financial sector. These are often referred to as a “banking union” and include: common supervisory standards, access to central bank liquidity and lender of last resort facilities, common resolution mechanisms, and a credible deposit guarantee scheme. Without a banking union, cross-border capital flows can be restricted, the effectiveness of monetary policy impaired and, in the extreme, the viability of the union itself undermined. It is as difficult to separate the institutions that support banking union from national fiscal arrangements as it is to separate the creditworthiness of banks and sovereigns.”* The ECB¹⁴ argues that *“A potential major macroeconomic benefit deriving from greater cross-country penetration of banking markets in the euro area could be a stimulus given to private financial risk sharing that would improve the functioning of Monetary Union. The risk sharing literature has found that, after cross-regional or cross-border equity holdings, cross-regional or cross-border credit is the second most effective private mechanism for economic agents to insure against domestic shocks.”* Cross-border retail credit is extremely low, hence the interest in cross-border banking M&A from a macroeconomic perspective. In addition, *“on the liability side the benefits of cross-border consolidation come, for example, from having an additional stable retail deposit funding base abroad, which will often be affected by shocks that are different to those impacting home-country depositors.”*¹⁵ Putting this into practice is another matter. Although one welcomes the decision of the Euro Summit of 29 June 2018 that the ESM will provide a common backstop to the Single Resolution Fund, as far as the European Deposit Insurance Scheme is concerned, the only agreement was that *“work should start on a roadmap for beginning political negotiations on the European Deposit Insurance Scheme”*.

With respect to the Capital Markets Union, according to the European Commission, its realisation *“is paramount to help provide more innovative, sustainable and diversified sources of funding for households and businesses, such as through increased access to venture capital or equity financing and less focus on debt. As such, the CMU will increase risk-sharing via the private sector and the overall resilience of the financial sector. It thereby also contributes to broader*

¹¹ Cimadomo et al. (2018) talk about the “knife-edge” property of the financial markets which sometimes act as shock absorber and contribute to risk sharing but in other states of the world can amplify shocks and cause the international spreading of risk.

¹² The tracking error reflects to which extent a portfolio is expected to have a performance which differs from its benchmark

¹³ *The economics of currency unions*, Speech given by Mark Carney, Governor of the Bank of England, 29 January, 2014

¹⁴ ECB, Financial integration in Europe, May 2017

¹⁵ ECB (2017)



*macro-financial stability to the economy in case of economic shocks.*¹⁶ The contribution of the CMU to risk-sharing and greater macro-financial stability is quite obvious, but the main benefit will be in the diversification of funding sources and, one would expect, as a consequence cheaper funding costs and faster growth. Whether it will greatly enhance international risk-sharing is less clear because households already have ample opportunities to diversify their investments internationally.

Concerning the role of the labour market channel in risk sharing, some authors see the considerable pay-off of boosting labour mobility in the eurozone: *"An important argument that arises is why so little risk sharing is achieved through factor markets in the EMU. Evidently, the answer is that both labour and financial markets are much more fragmented. In other words, although the EMU is highly integrated in terms of commodities trading, it is very fragmented with respect to services and financial trading... This may suggest that a full implementation of a financial market union along with a much more integrated market in services and a free movement of workers may largely compensate for the lack of a political union."*¹⁷ However, is there a risk of conflicting objectives? Consider country A, a eurozone member that is in a deep recession. Labour migration to country B, another eurozone member where GDP is still growing, makes it possible to smooth the impact of A's recession on the households of A. But what will be the macro impact on A's economy: will households commute, will there be remittances, will this slow the recovery in A, will this contribute to a structural divergence between A and B, etc.? It seems intuitively clear that this type of private risk-sharing creates the need for increased public cross-border risk sharing.

Private/domestic

The role of the savings and credit market channels in smoothing asymmetric shocks very much depends on intertemporal consumption-smoothing decisions by households, their access to credit and their willingness to let the savings rate decline (which depends amongst other things on short- and long-horizon uncertainty). In this respect, a stable banking system and more generally financial stability are key. Completing the Banking Union could indirectly contribute to enhanced risk sharing.

Public/domestic

This is the remit of national governments that are faced with a funding constraint and a debt sustainability constraint. Confronted with an economic downturn, the health of government finances will determine whether it is all possible to let the automatic stabilisers play their role and, even more, to consider using countercyclical fiscal policy for increased smoothing. When fiscal policy leeway is lacking to start with and debt/GDP dynamics are very sensitive to a reduction in real economic growth, there is a genuine risk that markets will charge a

higher risk premium, thereby accelerating the increase in the debt/GDP ratio. *"Government budgets cannot provide substantial smoothing over long and deep recessions unless governments save in advance. This contrasts to risk-sharing through cross-ownership of stocks – foreign investors will share the risk of falling stock values, but this does not, in general, lead to debt spirals where high debt leads to risk of sovereign default, which leads to higher interest payments, leading to increasing debt, and so on."*¹⁸

Public/cross border

With the benefit of hindsight, Mongelli (2002)¹⁹ sounded too optimistic when he stated that budgetary discipline in line with the targets of the Stability and Growth Pact in combination with national fiscal stabilisers would reduce *"the need for other types of adjustments -- such as supranational transfers, international risk sharing through the financial system, changes in prices and wages, and/or changes in real exchange rates."* Experience has shown that compliance with the Stability and Growth Pact has been mixed at best, international risk sharing has played a limited role in the eurozone and public risk sharing at the national level has had a considerable impact. What role is there for a common fiscal policy? Dmitrievy and Hoddenbaghz (2015) argue that the design of a fiscal union depends on the degree of substitutability between the products of different countries. When goods produced in one member country of a currency union become increasingly substitutable with goods produced in other member countries, creating a transfer union becomes more important. *"The euro area, a currency union with self-interested fiscal authorities, low cross-border risk-sharing and low labour mobility, would benefit immensely from a fiscal union between member states."*²⁰

Theoretically one could argue for fiscal policy coordination with countries with more fiscal policy leeway committing to an expansionary policy in case of a common shock. However, this could raise concern about free-riding behaviour by those countries without leeway because of budgetary profligacy in the past. For the stronger countries, there is the question of the intertemporal dimension: budgetary strength today does not automatically imply strength tomorrow in a rapidly ageing society where health and social security expenditures can cause a significant increase in the budget deficit. The more important question is how to react to asymmetric shocks considering the lack of fiscal policy leeway in many eurozone countries, a point which is emphasized by Furceri and Zdzienicka (2013): *"in the absence of alternative risk sharing mechanisms, the lack of fiscal space associated with current weak fiscal positions (high debts and deficits) could limit the ability of automatic stabilizers to provide insurance against shocks."* In such a

¹⁶ European Commission (2017), *Reflection paper on the deepening of the economic and monetary union*, COM (2017) 291, 31 May, 2017

¹⁷ Valentina Milano (2017), *Risk sharing in the euro zone: the role of European institutions*, Center for Labor and Economic Growth, Department of Economics and Finance, LUISS Guido Carli, Working Paper No. 01/17

¹⁸ Sebnem Kalemli-Ozcan, Emiliano Luttini and Bent Sørensen (2014), *Debt Crises and Risk-Sharing: The Role of Markets versus Sovereigns*, Scandinavian Journal of Economics 116(1), pp. 253–276

¹⁹ Francesco Paolo Mongelli (2002), *"New" views on the optimum currency area theory: what is EMU telling us?*, ECB working paper 138

²⁰ Mikhail Dmitrievy and Jonathan Hoddenbaghz (2015) *The Optimal Design of a Fiscal Union*



case “the lack of a supranational federal budget may entail significant costs”²¹.

As mentioned by Ferrari and Rogantini Picco (2016), “The lack of public risk sharing mechanisms is a major rationale behind the proposal included in the Five Presidents’ Report (2015) regarding the creation of a euro area fiscal capacity able to absorb asymmetric shocks.”²² This point had already been made three years earlier, in the Four Presidents’ Report²³ of December 2012 and it was discussed in detail in last year’s reflection paper of the European Commission on the deepening of the economic and monetary union²⁴. The common stabilization function “would complement the national budget stabilisers in the event of severe asymmetric shocks. It would also allow running smoother aggregate fiscal policies for the euro area in unusual circumstances when monetary policy reaches its limits.”²⁵ The guiding principles would be the absence of permanent transfers, minimisation of moral hazard, no duplication with the ESM as a crisis management tool, access subject to clear criteria and continuous sound policies. Three options are mentioned for such a macroeconomic stabilization function for the eurozone:

1. A European Investment Protection Scheme. This “would protect investment in the event of a downturn, by supporting well-identified priorities and already planned projects or activities at national level, such as infrastructure or skills development... In an economic downturn, public investment is usually the first item to be cut in the national budget. This amplifies the economic crisis and risks permanent negative effects on growth, employment and productivity. With the protection scheme, which could be in the form of a financial instrument, investment projects could still be continued. As a consequence, firms and citizens could overcome the crisis more quickly and more robustly.”
2. A European Unemployment Reinsurance Scheme. This “would act as a ‘reinsurance fund’ for national unemployment schemes. Unemployment benefits are an important part of the social safety net and their uptake tends to increase in a downturn, when resources are constrained by the need to contain fiscal deficits. The scheme would provide more breathing space for national public finances and help to emerge from the crisis faster and stronger. The unemployment reinsurance scheme would, however, probably require some prior convergence of labour market policies and characteristics.”
3. A rainy day fund. This “could accumulate funds on a regular basis. Disbursements from the fund would be triggered on a discretionary basis to cushion a large shock. Its effects would be similar to the two options above. A rainy day fund, however, would normally limit its payments strictly to its accumulated contributions. Its capacity might thus be too small in case of a large shock. Alternatively, the fund could be equipped with the capacity to

borrow. This would need to be accompanied by a design that clearly provides for savings at other times and limits indebtedness.”

The absence of any reference to a common fiscal policy at the Euro Summit of 29 June this year shows how big a challenge it is to make progress on this matter even though the economic rationale seems strong. Admittedly, the existence of the ESM and the intended broadening of its remit towards a backstop for the Single Resolution Fund imply public cross-border risk sharing, but an effort in terms of a much needed cyclical stabilization policy requires something else. According to Furceri and Zdzienicka (2013), “the results obtained for non-financial downturns may suggest that even if financial mechanisms for banking crisis prevention and resolution may reinforce the role of credit in providing risk sharing in times of financial stress, non-financial severe downturns are likely to remain largely unsmoothed. In light of these findings, and given limited labour mobility across euro area countries, it will then be crucial to identify alternative risk sharing mechanisms that could insure countries against severe downturns.”

To put it differently, the observation that risk sharing drops in times of financial crises or severe downturns in conjunction with a smaller number of factors providing risk sharing implies a need in the policy debate to focus on such an extreme environment and ask whether the effort of enhanced risk sharing is targeting the right factors. Importantly, Mario Draghi argues in a recent speech²⁶ that completing the Banking Union and the Capital Markets Union will reduce the need for public risk sharing, which is based on pooling of financial resources. These resources can be used to create a backstop in the context of bank resolution: “With common public risk-sharing through a backstop for the resolution fund, the incentives at the national level to limit capital and liquidity flows would disappear. That would in turn lead to greater banking integration and private risk-sharing at the euro area level.”

So the implication is that progress in terms of public risk-sharing would foster private risk-sharing which in turn would reduce the calls on public risk-sharing to enhance the resilience of the eurozone²⁷.

In case of large shocks public risk-sharing would still have an important role to play by financing countercyclical measures whilst being mindful of the necessity to avoid moral hazard. For this reason, the IMF, which has formulated concrete proposals, insists that a central fiscal stabilization capacity can also be used to improve compliance with fiscal rules in the eurozone and to make this a pre-condition for being eligible to benefit from this common stabilization capacity.²⁸

²¹ Mongelli (2002)

²² Alessandro Ferrari and Anna Rogantini Picco (2016), *International risk sharing in the EMU*, ESM Working Paper 17

²³ Van Rompuy Herman (2012)

²⁴ European Commission (2017)

²⁵ European Commission (2017)

²⁶ Draghi Mario (2018b)

²⁷ Private risk-sharing would be fostered because of enhanced cross-border financing, both banking and capital markets based. To quote Yves Mersch, member of the Executive Board of the ECB: “backstops reduce risk across the system by containing market panics when a crisis hits” (Mersch (2018)). A strong bank resolution framework would imply that “when bank failures do happen, very little public risk-sharing is actually needed as the costs are fully borne by the private sector” (Draghi (2018a)).

²⁸ Poul M. Thomsen (2018)



A common stabilization function: which effects?

As mentioned before, following the Five Presidents' report, more and more calls have been made for a common stabilization function so as to avoid a big increase in economic divergence between eurozone members in times of crisis. Two facilities already exist: the ECB's Outright Monetary Transactions, which come with an ESM programme and the ESM itself. *"But the conditionality attached to its programmes in general also implies procyclical fiscal tightening. So, we need an additional fiscal instrument to maintain convergence during large shocks, without having to over-burden monetary policy. Its aim would be to provide an extra layer of stabilization, thereby reinforcing confidence in national policies."*²⁹

Different types of a common stabilization function, with different levels of ambition, have been analysed in the literature. Gadatsch et al. (2016) simulate the impact of three forms of fiscal union (labour tax harmonisation, the per-capita equalisation of public revenues and the creation of a centralised supranational fiscal union). The differences in international risk sharing are very small, and there is little improvement in terms of shock absorption. However, under a centralised fiscal authority, there is a notable increase in business cycle synchronisation. When the influence of debt dynamics on bond yields is taken into account via changes in risk premia, the results are influenced because interest rate volatility reduces the ability of households to smooth consumption over time. *"So for single – especially small and volatile – member countries ..., it could be the case that a fiscal union regime is much more beneficial than what we report here, especially if these small countries indeed face the risk of losing capital market access."*

Another approach would target unemployment benefits. They obviously play a key role in stabilizing consumption during a recession but this also implies a deterioration of government finances, which, via the impact on government bond yields, may be all the more challenging for countries with high levels of public sector debt. According to Alcidi and Thirion (2017) *"The fraction of asymmetric shocks to state output absorbed through unemployment benefits, relative to the total amount of unemployment benefit spending, is between three and six times larger than the fraction absorbed by the overall budget."*³⁰

The concept of a eurozone unemployment insurance scheme was explored in detail in a discussion paper of the Bundesbank. The authors rule out permanent or perpetual transfers, so countries can receive a transfer payment when they are hit by a shock but transfers need to average out in due course: a country cannot be expected to be a net contributor or beneficiary all the time. Interestingly they find that when national governments issue more debt as a substitute for transfer payments, the stabilization gain from unemployment insurance almost disappears: *"budget deficits have to be reversed in the future, but international transfers only have to average out over time. This makes*

*them much more effective at stabilizing the economy. Fiscal risk sharing works much like a fairly priced insurance policy: even though, on average, the premia and expected payments net out to zero, one is still better off buying the insurance than taking out a bank loan in the event of 'damage', because the loan creates a large liability when times are bad."*³¹ However, the authors acknowledge the practical limitation of their analysis which is that abstraction has been made from moral hazard.

A recent IMF discussion note³² provides simulation results of a central fiscal capacity (CFC) in the form of a stabilization fund whereby transfers would be triggered by an increase in the unemployment rate and payments would be proportional with the increase in unemployment versus its moving average. The assets of the stabilization fund would be built in good times. With the transfers come two important benefits: they reduce the amount of procyclical fiscal consolidation³³ and they mitigate the increase in the risk premium required by investors when financing the budget deficit.³⁴ *"The authors find that "when monetary policy is unconstrained, having the CFC reduces the impact of the shock by nearly one-third. When monetary policy is constrained, the CFC reduces the impact of the shock by nearly three-fifths."* These results are intuitively clear: when monetary policy is constrained (rates are close to or at the zero lower bound), avoiding or at least limiting procyclical fiscal tightening has a big impact in comparison to a scenario without transfers: *"fiscal multipliers are effectively higher when monetary policy cannot at least partially offset the effects of fiscal consolidation."*

Whereas a supranational unemployment insurance scheme could be considered to be automatic and based on certain thresholds being passed, a discretionary policy could also be envisaged, at least in theory. Practical implementation issues would obviously be huge with, not only the usual moral hazard question but also how the decision on the allocation would be taken. The allocation question, while very challenging, would offer attractive opportunities to enhance risk sharing, as is shown in the work of Bernardini et al. (2017) on relative fiscal multipliers in the US. The authors calculate multipliers at the state levels and find considerable differences between states when the American Recovery and Reinvestment Act (ARRA) stimulus package was enacted: *"These findings suggest that the business cycle and degree of private indebtedness of U.S. states are key drivers of relative multipliers and should be taken into account when designing fiscal policies... The above results suggest that redistribution of government expenditures from a state with a growing economy or low household debt levels to*

²⁹ Draghi (2018a)

³⁰ Cinzia Alcidi and Gilles Thirion (2017), *Fiscal risk-sharing in response to shocks: New lessons for the euro area from the US*, CEPS, FIRSTRUN

³¹ Stéphane Moyen, Nikolai Stähler and Fabian Winkle (2016), *Optimal unemployment insurance and international risk sharing*, Deutsche Bundesbank, Discussion Paper, No 33/2016

³² Nathaniel Arnold, Bergljot Barkbu, Elif Ture, Hou Wang, and Jiaxiong Yao (2018), *A Central Fiscal Stabilization Capacity for the Euro Area*, IMF Staff Discussion Note

³³ In the absence of transfers, an increase in unemployment benefits payments would require a reduction in other expenditures to keep the increase of the budget deficit under control.

³⁴ The increase in the required risk premium, i.e. the widening of sovereign spreads versus countries with low levels of public sector debt, is reduced because investors expect that the transfers will lead to a shallower and shorter recession.



states that are in a recession or have relatively high household debt ratios and hence larger relative multipliers, should also stimulate aggregate economic activity³⁵³⁶.”

Conclusion

Increasing risk sharing is an integral part of the necessary strengthening of the eurozone. This is a long-term effort, and the current growth environment may create a false feeling of comfort, all the more so in consideration of the fact that growth dispersion between the members has declined significantly. However, policy leeway has also declined, making it harder to fight the next recession when it comes. Monetary policy is constrained because of low nominal rates and/or the large size of the balance sheet of the ECB, whereas in most countries the absence of fiscal space constrains national fiscal policy. In times of economic stress, this constraint may become binding even more quickly if financial markets become dysfunctional because of sudden halts (or even reversals) in intra-EMU capital flows.

Risk sharing is also important because economic shocks can have considerable distributional consequences, a point which is emphasised by the OECD³⁷. The impact may differ depending on the income level, the wealth level, age, profession, etc. Moreover, the ability of households to hedge against economic shocks (e.g. by means of appropriate international asset allocation) will depend on their financial sophistication. Looking at private risk sharing on a more granular level and taking the appropriate measures to boost it look like big policy challenges.

Thus it seems that public cross-border risk sharing will have an important role to play, but the complexity of putting this in place is proportional to its importance. It raises questions of pre-commitment, conditionality, moral hazard and governance. Committing support ex-ante should reduce the risk of destabilising speculation in markets, but it raises the moral hazard question. In the absence of pre-commitment, stepping in when the house is on fire may exacerbate things because doubts about the timely arrival of the fire brigade will have contributed to the freezing up of markets, thereby worsening the crisis situation. The role of the ECB and the ESM will be crucial in such a situation³⁸ much like they were during the sovereign crisis³⁹.

³⁵ 'Aggregate' refers to the US as a whole.

³⁶ Marco Bernardini, Selien De Schryder, Gert Peersman (2017), *Heterogeneous Government Spending Multipliers in the Era Surrounding the Great Recession*, CESifo Working Paper No. 6479

³⁷ Rudiger Ahrend, Jens Arnold and Charlotte Moeser (2011), *The sharing of macroeconomic risk: who loses (and gains) from macroeconomic shocks*, OECD, Economics department working paper n° 877

³⁸ For a description of the role of the ESM and ideas on how to avoid moral hazard, see Approaches to strengthening the regulatory framework of European monetary union, Deutsche Bundesbank, Monthly Report, March 2015

³⁹ According to Milano (2017), "Good mechanisms of risk sharing, such as the creation of the ESFS and the ESM, have been put in place and they have revealed their strength. During the crisis the contribution to consumption smoothing from national government savings has been negative (-0.17) whereas the contribution from official EU lending has been remarkable (0.55).

While this knowledge can provide some comfort, the reality remains that insufficient risk sharing increases economic tail risk with a detrimental impact on long-term growth. In addition it will have negative externalities that leave everybody worse off⁴⁰. Given the challenge of increasing risk sharing, it is crucial to complement this effort with policies aimed at other objectives.

Cyclical stabilization in the eurozone : beyond risk sharing

Risk sharing	Risk prevention
Boosting resilience	Risk management

Exhibit 3

Source: BNP Paribas

One is risk prevention: knowing how to address an illness is good, but avoiding getting ill is also important. It concerns the usual combination of monetary and fiscal countercyclical policy (managing economic downturns, avoiding overheating phases), structural policy aimed at boosting potential GDP growth and macroprudential policy aimed at addressing financial stability risks. Many if not most of the policy measures will also help in boosting resilience to shocks. Higher potential GDP growth and greater supply-side flexibility mean an economy will be in a better position to withstand negative shocks. Macroprudential policy should increase the resilience of the financial system. Sound government finances should avoid a spike in sovereign yields during a downturn because debt sustainability is beyond doubt. On the contrary, safe-haven buying, including by foreign investors, should contribute to a decline in yields. In this respect, good governance of fiscal policy in the eurozone has an important role to play in reducing risk ex-ante: fiscal policy credibility will avoid or at least limit the increase in the required risk premium in case of a recession⁴¹.

Finally there is risk management, which means that when a crisis hits, fast and credible policy reaction can be put in place to avoid the development of a self-reinforcing negative spiral.

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For PIGS the national government savings channel has provided dis-smoothing (-63%), but official EU lending has been a suitable substitute (86% of smoothing through European institutions)... We conclude that central mechanisms help the good functioning of risk sharing in the EMU providing coordination among member states without necessarily driving the members' fiscal policy decisions - that should be national prerogatives - and without going towards a fiscal union that would cancel out sovereignty at national level."

⁴⁰ The issue of externalities was recently illustrated on the occasion of the market nervousness created by the formation of a new government in Italy in May this year. The widening of the Italian spread versus Bunds caused a widening of the Spanish and Portuguese spreads versus Bunds as well.

⁴¹ The importance of good governance is emphasized by Milano and Reichlin (2017). *Risk sharing across the US and EMU: the role of public institutions*, LUISS School of European political economy, Policy Brief – January 9, 2017



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Appendix

Empirical research on risk sharing in the eurozone

- **ALCIDI Cinzia (2017), *Fiscal Policy Stabilization and the Financial Cycle in the Euro Area*, European Commission, Discussion Paper 52.**

"When the financial cycle is in a growing phase, risk sharing accounts for about 10% of the absorption of asymmetric shocks, higher than the average coefficient. When the financial cycle is in the recessionary phase, the coefficient is not statistically different from zero, suggesting that international factor income does not contribute to the absorption of shocks... During expansionary phases, fiscal policy absorbs on average 17% of the asymmetric shock, higher than the average for the full period, while in the recessionary phases the coefficient is not statistically different from zero."

- **ALCIDI Cinzia, D'IMPERIO Paolo and THIRION Gilles (2017), *Risk-sharing and Consumption-smoothing Patterns in the US and the Euro Area: A comprehensive comparison*, CEPS Working Document, No 2017/04.**

Between 1998 and 2013, 17% of shocks went unsmoothed in the US. 47% of the smoothing was done by capital markets, 27% by consumption and only 8% by fiscal transfers. In the eurozone 75% of shocks went unsmoothed, 14% were smoothed by consumption and 10% by capital markets. Between 2010 and 2013 94% of shocks went unsmoothed in the eurozone. "The unsmoothed part of the shock is systematically higher in the periphery than in the core. However, it is only in the latest years of the sample that this went well above the 60% found in the literature, mostly due to the lack of any smoothing coming either from savings or factor income. The higher resilience to shocks in the core countries after 2007 is fully explained by savings in the corporate sector (especially in the 2008-09 period) and then personal and public savings (after 2010)."

- **ALCIDI Cinzia, D'IMPERIO Paolo and THIRION Gilles (2017) *International financial markets and shock absorption in the euro area*, FIRSTRUN Deliverable 1.5.**

"For the period 1998-2007, 17% of risk was not smoothed in the US (58% in the eurozone). In 2008-2009 these numbers were respectively 14% and 45%. In 2010-2013 in the US 23% of shocks went unsmoothed versus 94% in the eurozone. The bulk of risk sharing in the US is capital markets based ($0.45/(0.45+0.06+0.27)$), followed by consumption smoothing (0.27). Fiscal transfers play a minor role (0.06)." In the eurozone, the capital markets channel plays a very limited role.

- **ALCIDI Cinzia and THIRION Gilles (2017), *Fiscal risk-sharing in response to shocks: New lessons for the euro area from the US*, FIRSTRUN (Fiscal Rules and Strategies under Externalities and Uncertainties) deliverable 3.3 (funded by the Horizon 2020 Framework Programme of the European Union)**

Based on a panel of 11 eurozone countries over the period 1995-2014, the authors find that domestic fiscal policy smooths nearly twice as much of an asymmetric shock (19.8%) than the federal budget in the US (11%). In 2008-2009, government budgets smoothed 77% of asymmetric shocks (in the US 10%) but during the sovereign crisis fiscal smoothing almost dropped to zero.

- **BECKER Sascha O. and HOFFMANN Mathias (2001), *International Risk-Sharing in the Short Run and in the Long Run*, working paper.**

The authors analyse 23 industrial countries. Their results show that about 60 percent of income variability remains uninsured.

- **CIMADOMO Jacopo, FURTUNA Oana, GIULIODORI Massimo (2018), *Private and public risk sharing in the euro area*, ECB working paper n°2148.**

They find that "in the early years of the EMU only about 40% of country-specific output shocks were smoothed." Following the eurozone sovereign crisis, 65% of these shocks were smoothed, a result which is due to increased financial integration and the activation of loans from the EFSF and the ESM. Crossborder holdings of equity and debt seem to be the most effective for private risk-sharing, in particular between the core and the periphery. Cross-border bank loans tend to be pro-cyclical, thereby amplifying shocks.



- **ECB (2018), *Risk sharing in the euro area*, Economic Bulletin, Issue 3 / 2018.**

“while in the euro area around 80% of a shock to GDP growth in a given country remained unsmoothed over the period 1999-2016, thus resulting in sizeable differences in consumption growth across countries, in the United States at most 40% of a shock to state-specific GDP was unsmoothed over the same period... in the euro area, risk sharing takes place mainly via the capital channel, i.e. through cross-border holdings of financial assets.

- **European Commission (2007), *Cross-border risk sharing: has it increased in the euro area?*, Quarterly Report on the Euro Area/.**

The article covers the period 1970-2006. Before 1999 45.6% of shocks went unsmoothed in the eurozone, after 1999 this increased to 57.2%, implying less smoothing. Smoothing through capital markets however increased significantly, from 2.1% to 21.2%. “However, the result for the euro area changes substantially when Ireland and Luxembourg are excluded from the sample. The risk-sharing through this channel for the remaining 10 countries is only 7.6%.” International transfers smoothed 6.3% of the shocks after 1999 (negligible before) but they are no longer significant when Spain, Ireland, Greece and Portugal are excluded from the sample. Finally, fiscal (government borrowing) and credit smoothing (via borrowing or asset sales by households) only smoothed 15.3% of shocks after 1999 (51.9% before). “Government taxes and transfers are indeed providing some cushion against income fluctuations but their impact is relatively small. The estimate for the private credit market channel is negative, a result which is in line with the observation that developments in the saving ratio have been pro- rather than counter-cyclical in the latest downturn, aggravating the slump in disposable income.”

- **European Commission (2016), *Cross-border risk sharing after asymmetric shocks: evidence from the euro area and the United States*, Quarterly Report on the Euro Area, Volume 15 No 2.**

In the US, between 1964 and 2013, 17.6% of shocks went unsmoothed, cross-state factor income (related to property income, retained earnings, dividends, income from labour, etc) smoothed 44.8% of shocks, credit markets 26.7% and cross-state fiscal transfers 8.3%. In the eurozone, between 2000 and 2015, depending on the perimeter, between 60% and 75% of shocks were not smoothed. Credit markets smoothed between 18% and 25% of shocks, cross-border factor income between 2.0% and 5.6%. The role of cross-border fiscal transfers was tiny: “The largest role for the public channel comes up when the sample of euro area countries includes only those that benefited from official support during the crisis years.”

- **FERRARI Alessandro, ROGANTINI PICCO Anna (2016), *International Risk Sharing in the EMU*, European Stability Mechanism, Working Paper 17.**

The authors construct a counterfactual dataset to assess a scenario if the euro would not have been adopted. They find that “the euro has not affected the level of risk sharing across euro area countries, but has partially reduced the ability of member states in the periphery, not the core, to smooth consumption.”

- **FURCERI Davide and ZDZIENICKA Aleksandra (2013), *The Euro Area Crisis: Need for a Supranational Fiscal Risk Sharing Mechanism?* IMF Working paper.**

In the euro area, in normal times about 62% of shocks are not smoothed. In severe downturns 78% of shocks go unsmoothed and in very severe downturns 88%. “The increased inability to smooth larger output shocks is driven by the lack of consumption smoothing provided by private saving via the credit channel. This is consistent with the fact that, in the event of a large shock, citizens and the government of a country would need larger amounts of credit which may not be able to obtain. This is particularly true for severe downturns that are persistent and unanticipated.” On average, in the eurozone 66% are not smoothed whereas in the US this is only 25% and in Germany 20%. In both of these countries the capital markets channel is significantly larger. Smoothing via a federal budget also plays a role whereas in the European Union and the eurozone this is negligible.

- **IMF (2013), *Towards a fiscal union for the euro area*, Staff Discussion Note.**

In the US, Canada and Germany about 80% of local shocks are smoothed whereas in the euro area only half of that amount is smoothed: a GDP contraction of 1% depresses households’ consumption by as much as 0.6%. Capital markets play less of role in the euro area in part because cross-border ownership of assets is more limited. Cross-country fiscal risk sharing is almost non-existent.



- **KALEMLI OZCAN Sebnem, LUTTINI Emiliano and SORENSEN Bent (2014), *Debt Crises and Risk-Sharing: The Role of Markets versus Sovereigns*, Scandinavian Journal of Economics 116(1), pp. 253–276.**

The authors calculate to which extent GDP shocks were absorbed between 1990-2007, 2008-2009 and in 2010.

53 percent went unsmoothed before the Great Recession. This fell to 40 percent during the period 2008–2009, and jumped to 86 percent in 2010. They find considerable differences between GIIPS (Greece, Ireland, Italy, Portugal, and Spain) countries and non-GIIPS countries. In 2008-2009, 51% of shocks went unsmoothed in GIIPS countries versus 16% for non-GIIPS countries. In GIIPS countries, risk sharing collapsed in 2010: government saving was procyclical as governments tightened budgets and hence contributed negatively to income smoothing whereas private dis-saving allowed for consumption smoothing. On balance “each percent decline in GDP in 2010 was accompanied by a more than 1 percent decline in consumption.” However the fraction unsmoothed for non-GIIPS was 45%. Though government based risk sharing declined, private sector saving supported risk sharing.

- **MILANO Valentina (March 2017), *Risk Sharing in the Euro Zone: the Role of European Institutions*, , Working Paper No. 01/17, Center for Labor and Economic Growth, LUISS Guido Carli, Rome**

Risk sharing is higher in the US than in the eurozone with respectively 70% and 23% of shocks smoothed in the period 1999-2006. In the period 2007-2014, risk sharing decreased in the US to 60% but increased in the eurozone to 31%. “In the EMU, risk sharing is almost entirely accomplished through the savings channel (which includes cross border borrowing and lending by the private and the public sector), whereas, in the US, it is accomplished through a diversified range of mechanisms: net factor income flows (27%), direct transfers (19%) and savings (12%).” The public sector plays a key role in Europe. In core countries, counter-cyclical public borrowing and lending explains 73% of consumption smoothing. In the periphery, during the crisis period, national governments generate 63% of dis-smoothing in order to keep government finances under control. However, 86% of smoothing was provided by transfers and loans from European institutions (EFSF, ESM).

- **MILANO Valentina and REICHLIN Pietro (2017), *Risk sharing across the US and EMU: the role of public institutions* Luiss School of Political Economy, Policy Brief**

in the EMU, risk sharing is almost entirely accomplished through the savings channel (internal and external borrowing and lending by the private and the public sector), smoothing about 30% of idiosyncratic shocks, whereas, in the US, it is accomplished through a diversified range of mechanisms: factor income flows (smoothing about 27% of shocks), direct transfers from the Federation (19%) and savings (12%). In turn, risk sharing from the savings channel in the EMU is almost entirely generated by public funds (government budget).

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