

# Lessons from the US for the institutional design of EMU

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## Introduction

During the preparations for the introduction of the euro, it was already acknowledged that most of the EU Member States did not satisfy the criteria for an Optimum Currency Area (OCA) to the same extent as the 50 American states. The degree of economic convergence, wage and price flexibility and labour mobility between the future euro area members was less than in the case of the American states. According to the OCA theory, in the absence of adequate convergence and flexibility, a monetary union needs solidarity between the member countries via transfers, generally paid out of a common budget. The OCA theory did not initially consider the financial side of the economy, since capital controls were still very common at that time. However, well integrated financial markets offer an alternative means of coping with idiosyncratic shocks. The establishment of a common fund for the resolution of failing banks could also be a form of risk-sharing.

Although the EMU member countries' fulfilment of the OCA criteria was uneven and partial, it was nevertheless decided to embark on monetary union – a project which was as much political as economic. It was assumed that the benefits of this worthwhile project would ultimately increase and its disadvantages would decline, precisely as a result of the introduction of the single currency.

It was hoped that the euro, in combination with the Single Market which was, in principle, to be completed at the beginning of 1993, would intensify Community trade while promoting convergence between the Member States and encouraging financial market integration. It

was also assumed that there would be adjustment mechanisms to correct any imbalances. For instance, it was argued that the effects of an overheated economy accompanied by high inflation and current account deficits would eventually be corrected by the negative impact on growth of a loss of competitiveness. Another assumption was that any differences in country risk would be reflected in the pricing of public debt on the financial markets. That would ensure adequate fiscal discipline and limit the contagion effects. The no-bail-out clause in the EU Treaty would be enough to guarantee such differentiation by the financial markets.

The expectation of continuing convergence and the assumption that the financial markets would apply differential pricing were among the factors leading to the establishment of a unique institutional structure for EMU in which monetary policy was unified while fiscal and structural policies remained largely national. The historic proposal by Pierre Werner foresaw more centralised economic coordination, but in the 1990s the political will for this significant transfer of powers to European level proved to be lacking. As a substitute for a form of European economic government, the coordination of fiscal policy was specified in European rules in order to ensure the sustainability of public finances. For the rest of macroeconomic policy and for structural economic policy, there was only provision for a "light" form of coordination without binding rules; it was based on the Treaty article stipulating that the Member States shall consider their economic policy as a matter of common interest. Bank supervision, the resolution of failed banks, and deposit protection remained national responsibilities, with

minimal, voluntary coordination between the competent national authorities.

As expected, once the euro was introduced, thereby eliminating the exchange rate risk between the euro area countries, trade within the euro area increased further and financial integration received an additional boost. However, some of the assumptions made before the introduction of the euro subsequently proved unfounded.

Differential pricing by the financial markets did not happen; following the introduction of the euro, interest rates converged almost completely on the lowest rates, despite divergent economic fundamentals and country-specific risks. The levelling of interest rates also occurred outside the euro area, and for assets other than the public debt. In some euro area countries, this downward convergence was a major factor behind excessive debt levels built up by governments and/or the private sector.

Furthermore, contrary to expectations, the adjustment mechanism via competitiveness proved inadequate, or at least too slow, so that the macroeconomic imbalances continued to grow. The rules on economic coordination were unable to prevent that happening, albeit because they were applied too flexibly, if at all.

On the financial side, the deepening of the Single Market was accompanied by large, expanding and evidently highly volatile cross-border bank capital flows. Moreover, as a result of the liberalisation of financial regulation, some banks grew so large that a national government would hardly have the budgetary resources to afford a rescue operation, whereas Europe had left that responsibility primarily with the Member States.

In such an unstable situation, given the mounting concern over Greek public finances, yield differentials on sovereign debt began to widen significantly between some euro area countries from late 2009 onwards. This culminated in the euro area's sovereign debt crisis, which then escalated as a result of the feedback loop between banks and governments.

Various *ad-hoc* instruments were created, but the financial market turmoil only subsided gradually when, in the summer of 2012, the Eurosystem announced the outright monetary transactions (OMTs). However, this measure does not intend to be a permanent solution to the sovereign debt crisis, though it could offer the policy-makers time to adjust the institutional design of EMU and correct the imbalances in the various Member States.

Meanwhile, much progress has been made in both areas, and there are new proposals on the table. With a view to any lessons which might benefit EMU, this article analyses key aspects of a successful monetary union, more specifically the United States. The American economy is comparable to the euro area in size and development, but there is a need for caution as there are also some major differences, more specifically the fact that the United States is a nation state while the euro area is only a union of sovereign countries.

This article is structured as follows. Section 1 examines the characteristics of the United States and the euro area against the criteria set out by the OCA theory. Section 2 compares the existing banking union in the United States with the one agreed in the euro area. Section 3 investigates how fiscal solidarity works in the US, and whether this mechanism is feasible in Europe. The article ends with some conclusions.

## 1. The United States and the euro area in the light of the Optimum Currency Area theory

### 1.1 The Optimum Currency Area theory

Research on monetary unions often refers to the Optimum Currency Area (OCA) theory. This theory specifies the conditions that a monetary union should fulfil so that the advantages of introducing a single currency – such as lower transaction costs – offset the disadvantages of giving up an independent monetary policy, and thus losing the interest rate and exchange rate as policy instruments for cushioning shocks.

The OCA theory was developed in the early 1960s by Mundell, McKinnon and Kenen. Since then, the OCA literature has evolved, and attracted renewed attention in the run-up to EMU (Corsetti, 2008). Some observers doubted whether such a heterogeneous group of countries could form a successful currency union. However, that scepticism was not shared by other observers, who assumed that EMU would bring about gradual economic convergence (endogenous OCA) between the participating countries, ensuring that the project would succeed. Nevertheless, the recent past has clearly exposed the defects in the institutional design of EMU. Although much can be learnt from the OCA theory, EMU remains a complex project which is evolving over time, and often requires unique solutions.

### 1.1.1 The basic criteria

An optimum currency union can be defined on the basis of a number of “traditional” criteria (Mongelli, 2008). These criteria indicate whether the benefits of monetary integration outweigh the associated costs. If the criteria are fulfilled, the impact of asymmetric shocks will be small because the economic adjustment will run smoothly despite the loss of sovereignty over monetary policy.

1. Ideally, the participating economies form a homogeneous group, which means that they must exhibit a high degree of economic **convergence**. In that case, common shocks will have comparable effects, and economies with a similar economic structure will be less prone to asymmetric shocks. Increased integration, and hence openness, generally encourages the convergence process.
2. **Flexible prices and wages** are necessary to reduce the remaining differences between the members of a monetary union and to cushion asymmetric shocks. In view of the reduced scope for policy as a result of the loss of the nominal exchange rate instrument, sufficient flexibility is important to enable countries experiencing a negative shock to adjust their wages and relative prices in order to restore their competitiveness.
3. **Factor mobility, including labour mobility**, may alleviate the pressure on wages and prices in overheated regions. This argument, originally put forward by Mundell, is related to the international trade theory whereby production factor mobility facilitates a reallocation of resources within a region. For example, if labour is sufficiently mobile, that may prevent a negative demand shock from driving up unemployment in some regions, and avoid upward pressure on inflation in other regions where demand is rising. Capital flows permit better grouping of the available resources (pooling of reserves) and better risk spreading between the member countries; foreign holders of a country's assets will have to bear part of any fluctuation in the price of those assets. These flows also make it possible to absorb temporary adverse shocks in a particular country, e.g. by surplus countries lending to the country concerned; they thus facilitate the smoothing of household and corporate expenditure.

Nonetheless, financial integration is no substitute for a permanent adjustment (e.g. in prices and wages) if that is necessary; in that case, it can only ease the process by helping to weaken the shock's adverse impact on expenditure. Some writers have also qualified that

view and warned of the potential destabilising effects of capital flows (e.g. sudden stop).

4. These criteria need to be supplemented by **diversification of production and consumption** and hence, exports, thus reducing the impact of shocks affecting a narrow product range.
5. **Adjustment mechanisms at federal level**, i.e. the level uniting the member countries, can help to reduce the remaining differences, e.g. via transfers from a federal budget.

### 1.1.2 The “meta” criteria

The “traditional” criteria may be hard to measure, making it difficult to determine whether an OCA exists on the basis of the characteristics identified. Thus, a second, more recent wave of research in the empirical literature has shed light on new “meta” indicators. These concern similarities in the impact of shocks. They attempt to capture all the traditional criteria via their interactions, the underlying intuition being that if the effect of demand or supply shocks and the speed of adjustment are comparable between the partners, that lowers the cost of renouncing sovereignty over monetary policy.

### 1.1.3 Some limitations and criticisms of the OCA theory

Apart from the difficulty of measurement, it may be hard to assess the “traditional” OCA characteristics against one another, and they may sometimes tend in opposing directions, leading to inconclusive results (“inconclusiveness problem”). For example, a very open economy in terms of trade flows with a group of partner countries would indicate that the adoption of fixed exchange rates with those countries would be beneficial. Nonetheless, if that country also has very low mobility in its production factors, particularly labour, then according to the OCA theory a system of floating exchange rates should be maintained instead.

Moreover, the “traditional” criteria are constructed retrospectively on the basis of past data. They therefore cannot reflect any changes relating to preferences or policy choices, such as the establishment of a monetary union. Various writers have therefore raised the question of the existence of “endogenous” effects, the fact of adopting a common currency and thus initiating a favourable process that eventually leads to greater convergence between the countries (endogeneity hypothesis). In addition, the establishment of an OCA leads to strong and lasting (commercial and political) commitments on the part of its

members, opening the way to investment and closer trade links in the longer term.

That hypothesis was refuted by Krugman's specialisation theory, which states that countries which become increasingly integrated generally tend to specialise in goods and services for which they have a comparative advantage. Increased specialisation implies less diversified production, so that the countries become more vulnerable to asymmetric shocks. This theory takes the opposing view that there is a heavy price to pay for the loss of sovereignty over the monetary policy instrument.

## 1.2 An OCA appraisal of the United States and the euro area

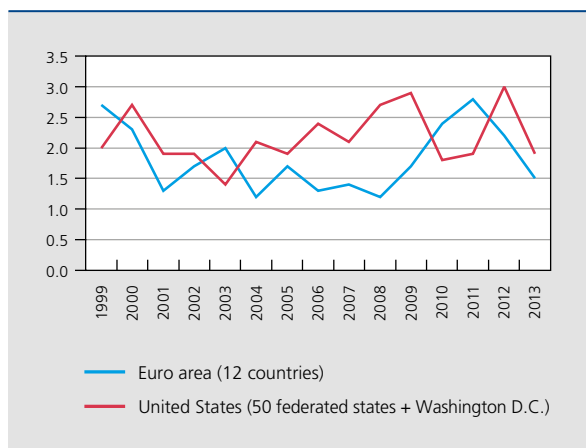
### 1.2.1 Economic convergence

This dimension can be measured by a range of indicators which check the homogeneity of a currency union. For that purpose, the regional figures of a union's member countries are examined. It is generally assumed that the American economy is much more homogeneous than that of the euro area. However, a quick review of a number of relevant variables shows that the regional differences in the euro area are generally comparable to those in the United States.

In recent decades, growth differentials in the euro area, measured by the standard deviation of GDP growth in the Member States, have been smaller than those in the

**CHART 1** GDP GROWTH DIFFERENTIALS BETWEEN THE EURO AREA AND THE UNITED STATES

(standard deviation between countries (or federated states) in percentage points of growth)

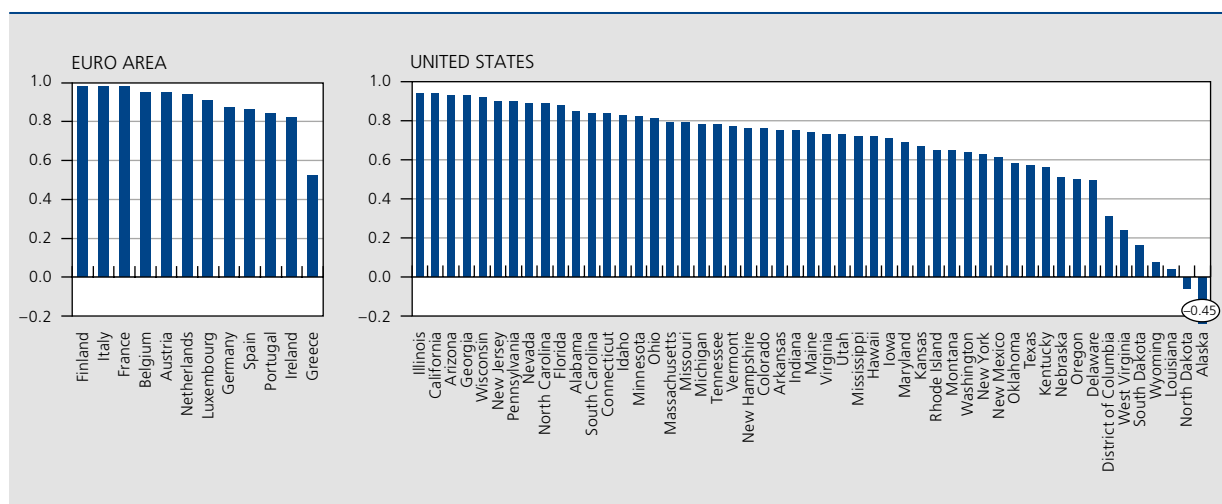


Sources: EC, BEA.

United States. During the crisis, growth differentials in both regions reached a peak (in the euro area that was due to a deep recession affecting the periphery of the region). Then in 2013, GDP growth differentials in both regions reverted to levels similar to those prevailing before the crisis. The economic convergence within a currency union is also often measured by calculating the correlation between the GDP growth of each member country and that of the union as a whole for a particular period, in an attempt to measure the synchronicity of economic

**CHART 2** SYNCHRONICITY OF GROWTH IN THE EURO AREA AND IN THE UNITED STATES

(correlation between the growth of countries (federated states) and growth of the euro area (United States) in the period 1999-2013)



Sources: EC, BEA.

cycles. According to this criterion, economic convergence in the American states is generally comparable to that in the euro area countries.

While the economic cycles in the United States and in the euro area (since the start of EMU) follow a fairly similar pattern, regional differences have persisted over the years in both regions. The underlying reasons for the regional differences in economic performance display similarities in the two regions. In particular, the effects of the crisis on the various euro area countries exhibited a pattern similar to that in the individual American states. The countries and states most seriously affected are those where a start was made on correcting imbalances, or those where certain structural problems had not been addressed before the crisis. In the United States, Nevada, Arizona, Florida and California had seen a steady rise in property prices. When the crisis erupted, property prices there collapsed. Similarly, there was a property bubble in a number of euro area countries before the crisis (Spain, Ireland). The differences in regional performance can also be attributed to structural factors. In the United States, the Great Lakes region is heavily dependent on manufacturing industry. Consequently, growth has been rather weak in recent decades. Similarly, strong structural rigidities in some euro area countries (such as Portugal) led to lower-than-average growth figures.

Before the start of EMU, unit labour costs were also converging in the euro area. Since 1999, the regional

dispersion of those labour costs has generally been only slightly lower than in the United States. At the same time, there is still a wide variation between minimum and maximum levels in both regions; detailed data reveal that both unions contain regions where the change in unit labour costs is persistently higher or lower than the average.

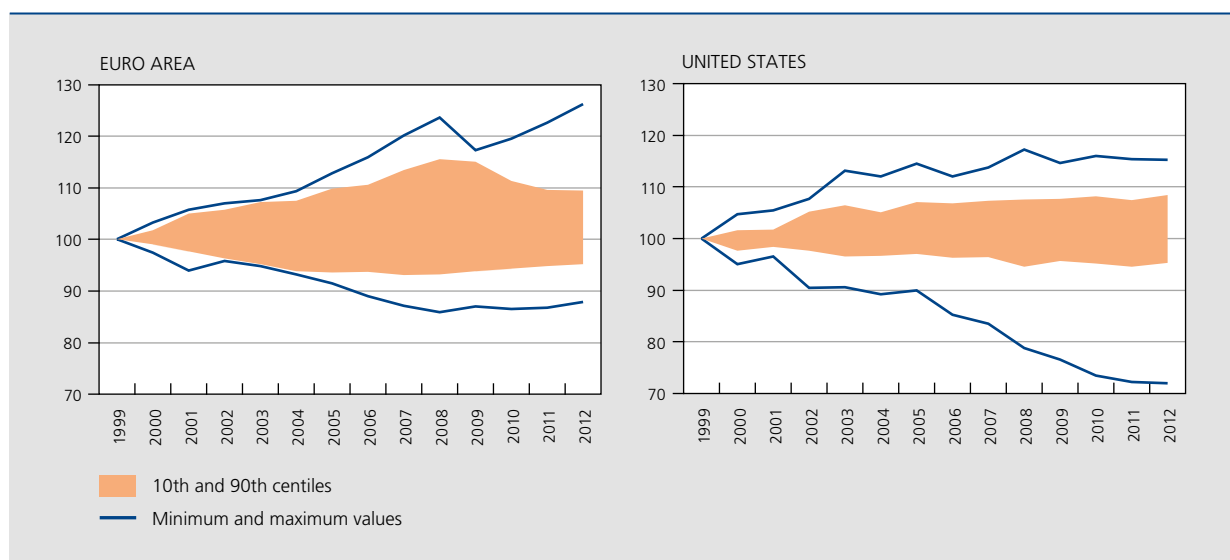
In regard to economic convergence, the conclusion is therefore that, in an efficient currency union such as the United States, differences persist which are generally comparable to those in the euro area. Economic heterogeneity is therefore clearly not an argument for the negative view of the viability of the euro area.

### 1.2.2 Flexibility

A monetary union where the members are different or face asymmetric shocks, but where production factor mobility and wage/price-setting are sufficiently flexible, can cope with the loss of the exchange rate and monetary policy as adjustment mechanisms.

Regarding the factor labour, the euro area is well behind the United States in fulfilling the flexibility conditions. After comparing the data for 2006, Gakova and Dijkstra (2008) concluded that migration between the American states is roughly double the level of migration between the EU countries, or even higher if EMU is considered. However, there has been some increase in labour mobility within EMU over the years. According to Van Beers *et al.*

**CHART 3** DYNAMICS OF UNIT LABOUR COSTS IN THE EURO AREA AND IN THE UNITED STATES  
(indices 1999 = 100)



Sources: EC, BEA.

(2014), who analyse a period up to 2012, the capacity to absorb adverse employment shocks thanks to labour mobility is greater in the United States than in Europe, though the difference has diminished in recent years.

A number of factors account for the greater internal mobility of labour in the United States, including institutional factors (a partially federal system of social security, less regulated labour markets, simple transaction procedures on the housing market), cultural factors (moving house is part of the American identity, use of the same language) and demographic factors (younger population).

In regard to wage flexibility, there are great disparities between the euro area countries. However, contrary to the widespread opinion that there is greater flexibility in the United States, a recent and much quoted study indicates that the US is not so different from the euro area (Dickens *et al.*, 2007). Conversely, an ECB study of consumer and producer prices shows that prices are indeed much more rigid in the euro area than in the United States (ECB, 2005).

Capital flows support economic integration and, like mobile labour, may create sufficient flexibility to absorb shocks. Since the establishment of EMU, there has been a big rise in the holding of cross-border assets. Ownership of debt instruments in particular, but also the holding of cross-border equities between member countries, has expanded considerably (Van Beers *et al.*, 2014). That picture is not specific to EMU, because financial integration has also gathered pace at international level. Nonetheless, this development has been more marked in EMU. Foreign bank assets, in particular, form a major component of cross-border assets. The internationalisation of EMU's banking institutions took place via interbank financing and to a small degree via direct lending to consumers in other countries (Sapir and Wolff, 2013). This last market is still relatively segmented at national level (ECB, 2014). In the United States, where the banking market was originally very segmented, successive waves of deregulation and the removal of geographical restrictions have led to intensification of financial flows between the states<sup>(1)</sup>. According to Morgan *et al.* (2004), the proportion of assets held by banking groups present in more than one state has rapidly grown six-fold (from 10% in 1975 to 60% in 1994)<sup>(2)</sup>. In contrast to the United States, the proliferation of bank regroupings in Europe led to the emergence of large groups competing with one another mainly on the wholesale market, whereas the retail market has remained predominantly national.

Another section of the economic literature tries to measure financial integration from the broader angle of

capital mobility. In a region where integration is already advanced, capital can flow freely between members and thus channel surpluses to countries in need of finance, as has happened in the euro area<sup>(3)</sup>. Owing to data restrictions, it is almost impossible to conduct such an exercise for the American states, and various writers use indirect criteria which hamper comparison with the euro area.

Nevertheless, various recent empirical contributions<sup>(4)</sup> have examined the role of financial integration in stabilising macroeconomic shocks, and compared the results obtained for the United States and EMU. Although the financial markets in EMU expanded from 2000 up to the crisis, they play a much less significant shock-absorbing role overall than in the United States. As a result of the crisis, private capital flows were actually reversed, especially in the peripheral EMU countries, while other shock absorption channels such as public capital flows or savings took over that role. In the United States, the financial markets have long played a major part in adjustments to macroeconomic shocks.

### 1.2.3 Adjustment mechanisms at federal level

If an economy experiences an asymmetric shock and the factor markets are unable to absorb that shock entirely, or sufficiently rapidly, the monetary union is still viable so long as there is sufficient solidarity or "shock absorption capacity" at federal level. In most cases, that presupposes greater integration in the direction of a fiscal union. Section 4 examines in detail the current degree of fiscal integration in the euro area compared to the US.

## 2. The banking union

### 2.1 The banking landscape in the United States and in the euro area

The financial crisis and the euro crisis highlighted a number of important weaknesses in the euro area, and particularly the interaction between banks and their national governments. That was one of the causes of the problem

(1) Until the 1970's, the existence of restrictive laws on banking activities in the United States led to great geographical fragmentation, broadly corresponding to 50 separate markets. After that, there was a move towards deregulation with the gradual introduction of various amendments and laws authorising the banks to pursue their business in multiple states simultaneously. This transition to an "inter-state" banking system was completed in 1994 with the adoption of the Reigle-Neale Act (Ghironi and Stebunovs (2010).

(2) According to the authors, this percentage may have risen even higher since 1994 as a result of continuing mergers between large banking groups (e.g. between the Bank of America and NationsBank in 1998); however, the authors note that for the years after 1994 it becomes particularly difficult to obtain an accurate measurement of bank assets per state.

(3) EC (2014) and de Sola Perea and Van Nieuwenhuyze (2014).

(4) Asdrubali *et al.* (1996), Balli and Sorensen (2007), Afonso and Furceri (2008), Furceri and Zdzienicka (2013), and Kalemli-Ozcan *et al.* (2014).

of financial fragmentation and impeded the financing of some economies (de Sola Perea and Van Nieuwenhuyze, 2014). That problem apparently does not exist in the United States, thanks to various factors.

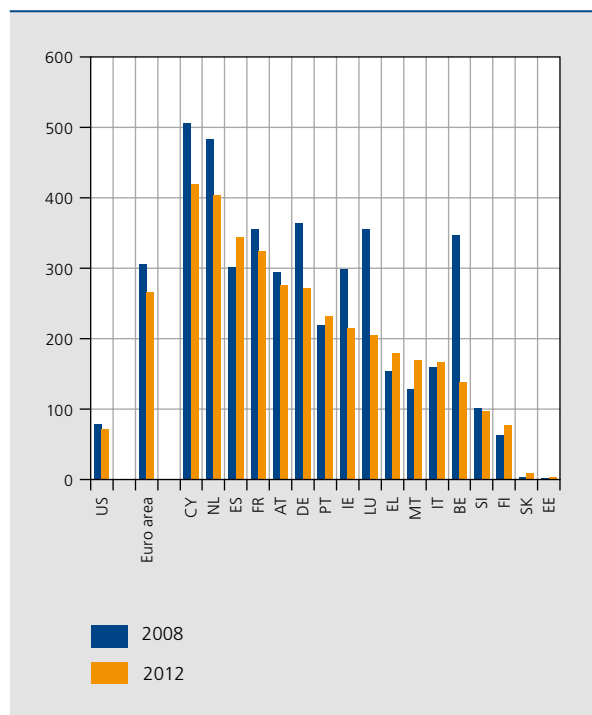
First, the euro area member countries are themselves responsible for supporting their banks and, if necessary, arranging their resolution. In the United States, however, that is a federal responsibility, and the central government also has ample resources for rescuing banks in difficulty. The bank rescue operations in a number of euro area member countries therefore had much more serious repercussions than those felt by the US federal government, especially as banks in the euro area are, on average, larger than in the United States. There are around 6 000 banks operating in each of the two currency areas, but at the end of 2012 the assets of the euro area banks totalled 266% of GDP, against just 72% of GDP in the United States. In both the US and the euro area as a whole, the volume of bank assets declined as a percentage of GDP following the financial crisis, though some euro area countries still saw that percentage edge upwards, mainly as a result of the severe impact of the recession on their GDP. Although the smaller balance sheet total of the American banks is due partly to differences in accounting

rules, it nevertheless indicates primarily that the US economy is funded in a manner fundamentally different from that of the euro area. In the latter, the banks account for more than 60% of corporate and household financing, while in the United States this figure is less than 25%.

There are two reasons for the much lower level of bank intermediation in the United States:

1. First, the capital markets are larger than in the euro area: the equity markets and the corporate bond market are more developed, one reason being the greater importance of private pension funds.
2. Second, the smaller role of banks in the US is also due to the larger scale of "shadow banking": taken as a whole, the more developed hedge funds and equity funds, money market funds and investment funds in the United States are almost comparable in size to the banking sector itself. In addition, the originate-to-distribute model plays a key role, notably via the banks' widespread issuance of asset-backed securities<sup>(1)</sup>. In addition, the government-subsidised institutions, Fannie Mae and Freddie Mac, (re)finance more than 50% of mortgage loans.

**CHART 4** SIZE OF AMERICAN AND EUROPEAN BANKS <sup>(1)</sup>  
(assets, in % of GDP)



Source: ECB, Banking Structures Report, 2013.

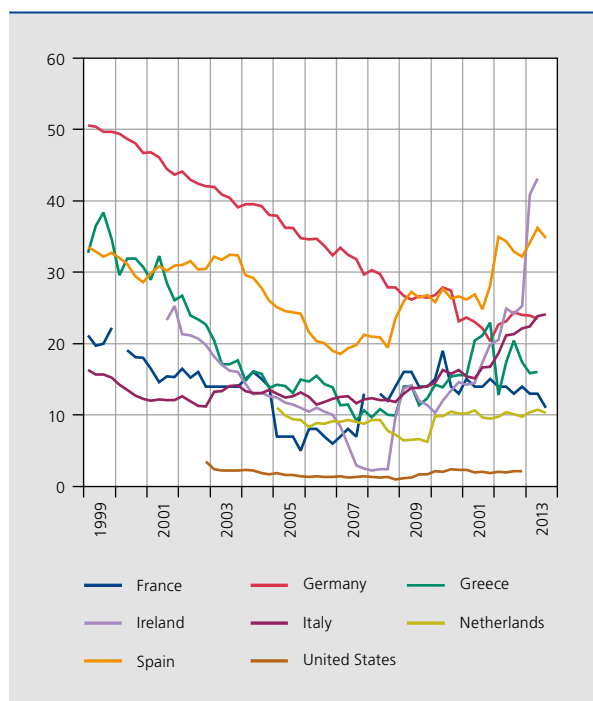
(1) Non-consolidated data, i.e. excluding foreign subsidiaries.

A second fundamental problem in the euro area is the large exposure of European banks to the sovereign debt of their own country; that exposure ranges between 10 to 15% of the national public debt in France and the Netherlands, 24% in Germany and Italy, and no less than 36% in Spain, whereas it is only just over 2% in the United States where the debt is financed mainly by other countries, non-bank financial institutions, households and the central bank. In the strong Member States (Germany and the Netherlands), that exposure has remained stable or even declined since the euro crisis, but that is certainly not the case in the weaker countries, including the programme countries – Ireland, Greece and Spain – and Italy. Moreover, in the euro area, this concerns exposure to the debt of the institution's own country, whereas in the United States the banks are mainly exposed to the debt of the federal government which the financial markets consider highly creditworthy, in contrast to the governments of some of the weaker euro countries. As explained in more detail in the next section, the size of the debt of the American states is limited to 10 to 20% of GDP, owing to the frequent application of balanced budget rules at state level, and the banks are not really encouraged to include that debt in their portfolios since it is not regarded

(1) Asset-backed securities (ABS) are financial instruments backed by a portfolio of assets that provides collateral and generates cash flows. An important advantage of ABS is that, by combining less liquid assets, they improve their tradability and thus facilitate financing via the market.



**CHART 5** BANKS' EXPOSURE TO THE DEBT OF THEIR OWN GOVERNMENT  
(in % of a country's public debt held by domestic banks)



Source : Bruegel.

as risk-free for the purpose of determining their capital requirements. Finally, De Grauwe (2011) has shown that the financing of the public debt in a country that has lost control over its own currency is far more vulnerable to a sudden reversal of capital flows than in a country that still has its own currency, with potential implications for the market's valuation of that public debt and for the balance sheets of the banks.

In the event of a negative shock, the national resolution and financing of banks in difficulty, especially given the size of the banks in the euro area and the fact that those banks have a large exposure to their own government's debt, trigger a negative feedback loop between governments and banks: if a government is regarded as less solvent, then the banks of that country are equally regarded as less solvent because their government has less scope for rescuing them and there is a greater risk of losses for the bank. Conversely: if a bank's balance sheets become less sound, there is an increased risk that the government will have to intervene, with adverse consequences for the debt-GDP ratio and the creditworthiness of the government in question. This all has implications for the operation of the financial markets in the euro area. Even before

the financial crisis, the degree of financial integration between the Member States was not optimal, and certainly not what one might expect of an efficient Single Market. Banks in the euro area are still predominantly 'national banks' and the same applies to the financial markets (Sapir and Wolff, 2013). This lack of financial integration in the euro area is due to factors concerning regulatory disparity, such as different tax rules, rules on corporate governance or bankruptcy laws, but primarily also a decentralised system of bank supervision and resolution. However, the financial and euro crisis greatly increased the fragmentation: cross-border capital flows – including interbank flows – dried up, the percentage of government and corporate bonds in non-residents' portfolios declined, and the banks' funding costs began to diverge more widely. All this undermined the efficiency of monetary transmission and had detrimental consequences for the financing of the economy of the weak Member States (de Sola Perea and Van Nieuwenhuyze, 2014).

In the euro area, the top priority is to break the vicious circle between weak banks and weak governments. The first step towards achieving that might be to improve the spread of the public debt across bank and non-bank portfolios, as in the United States. In this connection, there are some (including Weidmann, 2014) who consider that there should be limits on the concentration of the public debt among the banks. One alternative might be for these assets not to be regarded as risk-free for the purpose of determining the banks' capital requirements, as is the case in America for the debt instruments of the individual states. Be that as it may, any change must be very gradual to avoid spooking the markets.

In addition, as in the United States, there is a need for more centralised supervision of financial institutions and a more federal system of assisting or resolving banks in difficulty. The recommendations of the Van Rompuy report dating from the end of 2012 ("Towards a genuine Economic and Monetary Union") also contained these elements, accompanied by the establishment of a single deposit guarantee scheme. The first steps towards this "banking union" have been taken. They will be discussed later in this article on the basis of a comparison with the current institutional structure in the United States.

## 2.2 Prudential supervision

Prudential supervision in the United States is a complex system that has evolved over the years and has changed a great deal, especially since the financial crisis. Just as is the case in the euro area with the single supervisory mechanism (SSM), federal supervisors (the role of the ECB



in the SSM) and local supervisors (state supervisors) work together in the United States, owing to the large number of financial institutions.

The Federal Deposit and Insurance Corporation (FDIC), which also plays a crucial role in bank resolution (see below), supervises 63 % of all banks in America, which together represent just 17 % of total bank assets. The Office of the Comptroller of the Currency (OCC), an independent agency of the US Treasury and the Federal Reserve which, since the Dodd-Frank Act of 2010, is responsible for all systemic institutions, supervises 36 % of banks and savings institutions, representing more than 80 % of bank assets. Banks which come under the FDIC, but are regarded as “secure” and are relatively small, can be supervised entirely by state supervisors, though ultimate responsibility rests with the FDIC ; this concerns a fairly small number of local banks with few assets. However, one criticism of the American system is that, in some cases, banks are free to choose between a state supervisor and a federal supervisor, which may lead to “regulatory arbitrage” and the choice of the most lenient authority. In addition, multiple federal bodies have competence in the United States.

In the SSM, the ECB exercises direct supervision over almost 120 large, systemic banks that together account for around 85 % of bank assets in the euro area. In the United States, operational prudential supervision operates at federal level to a greater degree than in the euro area. However, the ECB is responsible for all banks, as it may decide at any time to supervise banks which are subject to the authority of the national supervisor in respect of most supervision tasks.

The launch of the SSM is being accompanied by a comprehensive assessment of the banks which are to come under the direct supervision of the ECB; that assessment includes an Asset Quality Review (AQR) and a stress test. Pending the publication of the assessment results in October 2014, the euro area banks are evidently proceeding with their recapitalisation, and confidence in the banks is improving, as was the aim of this exercise. The experience of the United States reveals that regular, credible stress tests are vital for reinforcing that confidence. Some people consider that annual stress tests ought to be arranged for a group of systemic banks in the euro area as well (Nouy, 2014).

## 2.3 Bank resolution

In the United States, the institutional framework for bank resolution is simple: the FDIC performs the central role. In the European Union, the resolution process is more complicated. It consists of 2 levels : the Banking Resolution and Recovery Directive (BRRD), which was approved in April 2014 and enters into force at the beginning of 2015, regulates banking resolution for the entire European Union of 28 Member States, while the single resolution mechanism (SRM) applies these rules consistently, on a centralised basis, for all banks which fall under the SSM. Within the SRM, the allocation of tasks is similar to that in the SSM. For banks subject to direct ECB supervision<sup>(1)</sup>, decisions are taken by a Single Resolution Board (SRB) while the national resolution authorities retain responsibility for the other banks. This arrangement is based on a Regulation (on which the European Parliament has yet to vote in the autumn of 2014) while the associated Single Resolution Fund (SRF) is legally based on an intergovernmental agreement. That agreement was signed on 21 May 2014 by 26 Member States – with the exception of the United Kingdom and Sweden – but has yet to be ratified; agreement also has yet to be reached on the precise share-out of the banks’ contributions. The American and European systems clearly differ in a number of respects:

**In regard to decision-making:** in the United States, the FDIC is responsible for initiating resolution, together with the FED and the OCC ; implementation is the responsibility of the FDIC where the decisions are taken by a Board of Directors comprising five federal members. In the United States, both preventive measures and resolution are triggered almost automatically on the basis of a system developed by the FDIC, Prompt Corrective Action (PCA), which defines “capital zones” in which intervention is required. If the risk-weighted assets’ (RWA) capital ratio falls below 6 %, the supervisory authority may replace the management, for instance, and impose other corrective measures; if the ratio drops below 2 %, the FDIC automatically takes over the institution.

In the euro area, decision-making is more complex, the Member States continue to play a role, and there is no automatism. The SRB consists of five “European” members plus the representatives of the national resolution authorities. Most decisions are prepared in an executive session attended by the “European” members plus the representatives of the Member State of the bank in question. The plenary meeting remains responsible for decisions which have a major impact on the Resolution Fund, and may reject decisions made by the executive session, such as those authorising the Resolution Fund to grant a

(1) As well as all cross-border banks requiring resolution and banks applying to the Single Resolution Fund or the European Stability Mechanism.

loan. Each Member State has a right to veto any decisions which would affect its budgetary sovereignty.

It is the ECB that gives notice that a bank is failing or is likely to fail, but the SRB itself may also initiate the resolution process. The SRB then decides the resolution arrangements: which instruments, how much support from the Resolution Fund, etc.

This complicated system is the result of a compromise between the Council and the European Parliament, and differs from the original proposal which gave a bigger role to the Commission in a more centralised mechanism. In practice, it remains to be seen how well the current compromise works in periods of financial stress.

**In regard to bail-in:** both banking unions have a system whereby, before the government intervenes, a bank is first rescued by a contribution from the shareholders and other creditors; this ‘internal rescue’ (bail-in) avoids or limits the cost to the taxpayer. Overall, the principles applied are broadly the same, particularly the “no creditor worse off” principle which implies that the creditors should not suffer heavier losses than in a normal bankruptcy procedure. However, the BRRD and the SRM specify that, in principle, a bank’s private creditors must contribute towards the bank’s rescue for at least 8% of the liabilities before the national resolution fund or the SRF can intervene or before any other form of public support can be granted; to that end, bank balance sheets must comprise a minimum of such liabilities. In the United States, there is no such minimum threshold of available liabilities.

**In regard to resolution funds:** the FDIC’s resolution fund, the Deposit Insurance Fund (DIF), is used for both bank resolution and deposit protection. It is prefinanced by the banks on the basis of a contribution closely linked to their systemic character. The aim is to create a fund amounting to 1.15% of the deposits covered by the deposit guarantee scheme (“covered deposits”); that figure will rise to 1.35% in 2020 and to 2% in subsequent years. That 2% would form a fund totalling around \$ 81 billion or roughly 0.6% of the balance sheet total of the banks. The BRRD requires the Member States to establish a fund with a target of 1.0% of the covered deposits, while the Deposit Guarantee Scheme Directive imposes a target of 0.8% of the covered deposits for national deposit guarantee funds. Under the European system, the contributions are similarly linked to the size of the balance sheet, adjusted for parameters relating to systemic risk. The two funds can be combined. They must achieve their ‘steady-state’ level within ten years, i.e. by 2025. 1.8% of all covered deposits would amount to roughly 0.3% of the banks’ balance sheet

total. The national resolution funds, regarded as part of the SRF, will gradually be merged from the beginning of 2016 so that by 2024 they will amount to 1% of the covered deposits.

**In regard to the support mechanism (fiscal backstop):** in order to assess the difference between the European and American resolution mechanisms, the credit line available to the FDIC from the US Treasury, which amounts to \$ 100 billion (but can be increased to \$ 500 billion if necessary), is crucial. The intention is that in a crisis (an event which, by definition, is unpredictable in its timing and scale) the FDIC borrows from the DIF and subsequently arranges repayment of the debts by the banking sector. The credibility of the FDIC is therefore backed by the Treasury. Apart from this facility, in view of the extent of the financial support needed for the banks in the financial crisis, the United States set up the Troubled Asset Relief Programme (TARP) on the basis of the Emergency Economic Stabilization Act adopted at the end of 2008. That programme had multiple objectives, but was in fact an *ad-hoc* fiscal backstop. The initial budget for the TARP was \$ 700 billion, but it was cut to \$ 475 billion. The conclusion is that the stability of the American banks is guaranteed by a support mechanism which is in fact unlimited, its size being adjusted according to the circumstances.

That is not yet the case in the euro area. At present, the SRM does not provide a fiscal backstop but the Ecofin Council of 18 December 2013 did state that it aimed to reach agreement on this before the end of the transitional phase of the SRF (i.e. before 2024), so that the SRF’s borrowing capacity could be increased; however, opinions are still sharply divided at the moment. The main impediment to an effective fiscal backstop for the SRF is of course that the euro area does not have its own budget and its own borrowing capacity. Only the European Stability Mechanism (ESM) could perform that role if necessary. During the transitional phase – until such time as the SRF is fully operational – bridging loans can still be arranged via national resources, loans between the national entities and, if necessary, via the ESM, but in that case via a loan to a particular Member State. If all other options have been exhausted, the ESM can, in the last resort, recapitalise a bank directly (i.e. without adding to the public debt of the country in question) up to a maximum of € 60 billion.

**In regard to the effectiveness of bank resolution:** fast and effective liquidation of zombie banks and bankrupt credit institutions is vital for the revival of lending to the economy, and reduces the budgetary cost for the government.

In that respect, reference is often made to the better performance of the United States; the FDIC has organised the resolution of 484 banks since the financial crisis, whereas that figure is estimated at around a hundred in the European Union, including fifty or so in the euro area<sup>(1)</sup>. The average size of a liquidated bank in the US is \$ 1.4 billion; it is therefore mainly small banks that have been wound up via the DIF, whereas public resources were used via the TARP for the rescue or resolution of the larger banks. Since 2009, there have been no more banks receiving federal government support in the United States, whereas this number in the EU is still considerable, although it is declining. This all seems to indicate that the American banking sector has recovered faster from the financial crisis of 2007-2008. The main reasons are probably that, in the past, the United States has conducted more credible stress tests (IMF, 2013), and bank supervision and resolution are organised according to a more centralised system, which should ensure a more neutral approach, free of national budgetary constraints, for instance.

## 2.4 Deposit guarantee

A deposit guarantee scheme helps to avoid a bank run. The American system is comparable with that in the European Union, although at \$ 250 000 per deposit and per bank the amount guaranteed is higher than the minimum € 100 000 applicable in the EU. However, a number of EU Member States do guarantee a larger amount, which in some cases is actually unlimited. Moreover, in relation to GDP per capita, the guarantee in the United States is only around 40 % higher than the EU figure of €100 000. In the United States the guarantee is covered via the DIF, the federal agency described above. In the European Union, as already mentioned, the new deposit guarantee scheme (DGS) provides for a pre-financed fund at Member State level. Earlier proposals in the Van Rompuy report for launching a common deposit guarantee fund at European Union or euro area level are no longer on the political agenda.

With the SSM and the SRM, the euro area has taken an important step towards a full banking union, as it exists in the United States. This fosters financial stability, notably by breaking the negative feedback loop between banks and national governments. The European banking union is not an exact copy of its American counterpart, but rather a unique structure which maintains a major role for the national supervisory and resolution authorities. Agreement has yet to be reached on certain aspects, such

as a common deposit guarantee fund and a fiscal back-stop for the resolution fund.

The creation of a banking union is a cornerstone of a single financial market, but it is not the only component. In other spheres, the existing rules also need to be further harmonised in order to improve the integration of financial markets in the European Union, so that capital can be optimally allocated and risks can be spread across national borders (risk-sharing). Deeper financial integration could also encourage the development of capital markets, and in the euro area it could lead to a more balanced funding mix and risk spreading, with a larger proportion of non-bank financing. This form of risk-sharing could be supplemented by transfers between the Member States via a 'euro area budget', thus creating an insurance mechanism to alleviate asymmetric, country-specific shocks (fiscal risk-sharing). The next section discusses the fiscal union in the United States and the feasibility of further fiscal integration in the euro area.

## 3. Fiscal union

The United States is sometimes cited as an example by those who advocate providing the euro area with a proper budget for absorbing asymmetric shocks and strengthening the stability of the Union as a whole. The Optimum Currency Area theory (see above) also argues for a significant stabiliser via budget transfers in a monetary union featuring rigid labour markets and low labour mobility.

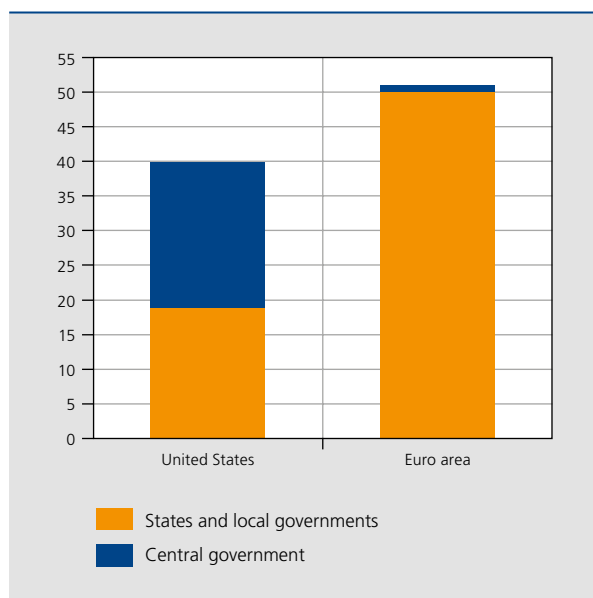
The United States does in fact have a substantial federal budget, which amounted to 21 % of GDP in 2012. In the US, central government revenues and expenditure exceed those of the states and local authorities. In contrast, in the EU, the budget amounts to just 1 % of GDP and 85 % of it comprises contributions from the Member States, whereas the Member States themselves spend almost 50 % of GDP.

In the United States, a large part of federal expenditure is devoted to the operation of the federal public services, public investment and defence, but the bulk of it is intended to cushion the impact of idiosyncratic shocks on individual states. The federal government actually funds most of the social spending, namely basic pensions and part of the health care, so that spending in an individual state does not have to be adjusted to cope with the impact of economic shocks on its own revenues or expenditure. That gives the federal government an efficient instrument for absorbing negative income shocks at sub-federal level. Although unemployment benefits are paid mainly by the states, in the event of severe shocks

(1) Sources: FDIC annual reports and [Open.economics.net](http://Open.economics.net).

**CHART 6** PUBLIC EXPENDITURE IN THE UNITED STATES AND IN THE EURO AREA<sup>(1)</sup>

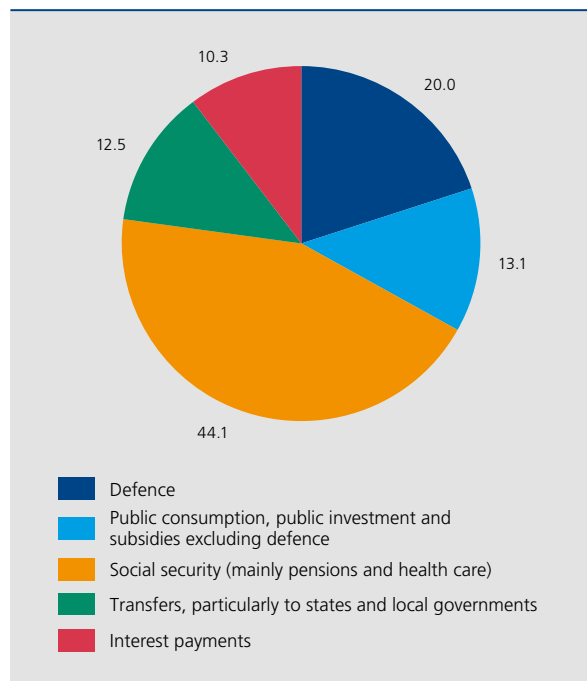
(in % of GDP, 2012)



Sources: OECD Fiscal Decentralisation Database, own calculations based on payments by the EU to the Member States.

(1) For the euro area, central expenditure is confined to the crisis mechanisms (bilateral loans to Greece, EFSM, EFSF, ESM).

**CHART 7** FEDERAL GOVERNMENT EXPENDITURE IN THE UNITED STATES



Source: BEA.

those unemployment systems are often supplemented by *ad-hoc* federal government programmes. For instance, in 2008, the Emergency Unemployment Compensation Program was created for states with particularly high unemployment. The transfers from the federal government – the grants-in-aid to state and local governments – comprise over a hundred programmes whereby the federal government partly funds, and thus partly determines, local policy.

The operation of the automatic stabilisers via the social security expenditure therefore offers the American states an insurance mechanism against their own risks (fiscal risk-sharing).

However, fiscal risk-sharing in the United States operates in the first instance via the federal government revenues; these amount to around 55% of total consolidated public revenues. The operation of the automatic stabilisers ensures that the economic agents in states suffering a negative shock contribute less to the central budget, while the contributions from those of states in a better economic position are relatively bigger. More specifically, in the United States, the federal government's revenues are derived mainly from the tax component most sensitive to the business cycle, namely income tax (personal income

tax and corporation tax); state revenues consist mainly of turnover taxes and a personal income tax component, while local government revenues originate primarily from property taxes.

As a result of the 'balanced budget' rules introduced in most of the American states, their debt has been kept below 25% of GDP. The American public debt, which amounted to 104.3% of GDP in 2013, is therefore essentially federal government debt.

In stark contrast to the situation in the United States, the already meagre Community budget resources in the European Union can only absorb a very small part of any asymmetric shocks. That applies, for instance, to the European Globalisation Fund with spending amounting to € 150 million a year; Union expenditure consists predominantly of transfers to agriculture, long-term transfers for regional development, and R&D subsidies to firms. Less than 15% of the EU budget is financed by customs duties and agricultural levies, while almost 85% comes from contributions from the Member States according to their share in the VAT tax base and the GNI of the Union. This last part is therefore linked to GDP growth, but in view of the small size of the EU budget and the possibility that contributions may not be synchronised with the business

cycle, its stabilising function is limited. The fact that cohesion policy expenditure is concentrated in the poorer Member States while the richer Member States pay a bigger share of the contributions does lead to a transfer from the rich to the poorer Member States in broad terms. However, that transfer is determined by differences in the level of GDP per capita, and furthermore, variations in the business cycle have no influence on the respective transfers. The EU budget is therefore barely capable of absorbing shocks; at most, it has a small redistributive effect. Moreover, the EU budget must always be balanced, and the European Union can only borrow for a small number of specific expenditures, such as the Balance of Payments Facility. The recent tough negotiations between the Member States (particularly between the net contributors and the others) and between the Council and the European Parliament on the medium-term budget (Multiannual Financial Framework, or MFF) clearly demonstrated that there is no willingness at this stage to increase the solidarity between the Member States via this budget. Nevertheless, in the mid-term review of the MFF and the planned debate on the introduction of genuine own resources for the Union in 2016, a form of counter-cyclical contributions might be considered.

It is true that the euro area has acquired crisis mechanisms enabling the euro area Member States, by means of bilateral loans (the Greek aid programme), the EU budget (EFSM), government guarantees (EFSF) or capital participation (ESM), to grant financial assistance amounting to around 4% of GDP for euro area members in difficulty. However, an essential aspect of fiscal risk-sharing is its *ex-ante* character, because that spreads the burden of an asymmetric shock across the member countries and helps the financial markets in their risk assessment before adverse scenarios materialise and contagion takes hold.

Since it is now possible to intervene more promptly, the existence of these assistance funds is already progress in itself, compared to the situation at the start of the euro crisis, but it is no substitute for the *ex-ante* mechanisms of fiscal risk-sharing.

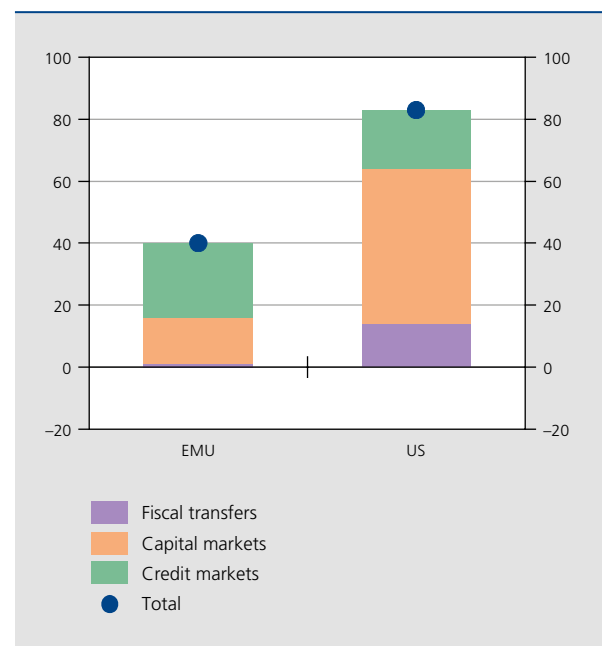
Protection against idiosyncratic shocks via the transfer of government budget resources need not necessarily be very extensive. In the United States, fiscal risk-sharing amounts to only about 15 percentage points of the 80% total risk-sharing (Allard *et al.*, 2014). It is the financial markets that would provide most of the income protection against risks, though that takes no account of the federal bank resolution funds and any additional fiscal backstop that might be used to rescue local banks in a crisis. In the euro area, the IMF estimates the total risk-sharing at a much lower level, namely just 40% (again,

excluding the SRF). Fiscal risk-sharing is virtually non-existent. Protection against income shocks via the capital markets is more limited than in the United States, and in so far as the financial markets offer protection against income shocks, it operates mainly via the credit markets (cross-border banking activities). As the recent euro debt crisis has shown, this is a less stable risk-sharing channel since the international credit markets tend to dry up in periods of turbulence.

An effective banking union – including a credible fiscal backstop – and smoothly operating European capital markets can already do much to reduce and absorb asymmetric shocks. They can therefore lead to both risk reduction and risk-sharing (Geeroms and Karbownik, 2014). It thus becomes less likely that a Member State's budget will have to bear on its own an exceptionally severe financial sector shock such as the one in 2008.

In addition, the Stability and Growth Pact rules, as also included in the Treaty on Stability, Coordination and Governance in the Economic and Monetary Union, offer substantial scope for a counter-cyclical fiscal policy, so long as the rules are applied and the Member States therefore keep close to their medium-term objective of a structural balance or surplus, and their public debt is on a sustainable path. In that way, the Member States

**CHART 8** RISK-SHARING VIA THE FINANCIAL MARKETS OR VIA THE GOVERNMENT  
(in % of an income shock absorbed)



Source: IMF.

can create a buffer in fat years to cope with leaner years. Nonetheless, many believe that it could be useful to have a fiscal risk-sharing mechanism as well, for instance by transferring part of the national fiscal policy to European level so that the operation of the automatic stabilisers is not confined to the national level but can take account of the spillover effects of fiscal policy on other Member States. Limiting the negative impact of an asymmetric shock on other Member States is often the primary reason for fiscal risk-sharing, rather than the solidarity aspect.

This type of mechanism can in principle promote a more stable union. The Van Rompuy report also proposed a 'fiscal capacity'. Various specific suggestions were made on the subject<sup>(1)</sup>: some people developed the idea of a fund available to Member States suffering a negative shock and pre-financed either by all the Member States (the "Rainy Day Fund" proposed by the Tommaso Padoa-Schioppa Group, 2012) or solely by those infringing the fiscal rules (the European Monetary Fund of Mayer and Gros, 2010). Another idea concerns a mechanism whereby Member States with an unemployment rate below the structural level would pay part of the unemployment benefits of countries suffering a negative shock where unemployment exceeds the structural level. In principle, such a system would not lead to permanent transfers but would be fiscally neutral over the business cycle as a whole (Trésor, 2014).

Two key conditions must be met if a fiscal risk-sharing mechanism is to be workable and politically feasible.

First, there must be no question of bad policy being rewarded by transfers, in other words it is essential to avoid or at least minimise moral hazard. Insurance can only be provided against bad luck. That applies to all policy spheres. In the case of fiscal policy, there are two ways of imposing budgetary discipline.

The first option is a credible 'no-bail-out' and fiscal discipline imposed by the financial markets. However, the experience of the United States has shown that certain conditions must be met to ensure that 'no-bail-out' rules work well as a basis for fiscal discipline at sub-federal level. The financial markets will only regard these rules as credible if the potential contagion effects on other states and the need for *ex-post* financial assistance from the federal government and the other states are kept to a minimum. That presupposes that even if a state runs out of funding and can no longer meet its payment obligations, there is no threat to financial stability and, furthermore, the local population is assured at all times of a minimum level of public services and social benefits so that the financial/economic and social costs of the crisis

can be kept under control. According to the IMF staff, the existing fiscal risk-sharing between the federal government and the states specifically creates the basis for the credibility of the 'no-bail-out' rule in the US, in contrast to the situation in the euro area. Moreover, in the past the 'no-bail-out' principle was actually applied<sup>(2)</sup>. Most of the American states have also included balanced budget rules in their legislation, in order to convince financial markets of their creditworthiness. However, such a mechanism requires a relatively large central budget and far-reaching political integration, which is of course easier in a nation state such as the United States than it is in the euro area.

The second option is for the central government to impose rules which it can also adequately enforce. In the European Union, one might even consider a Minister of Finance for the euro area (Trichet, 2011) or a *Budgetkommissar* (Schäuble, 2012). However, that requires a considerable transfer of sovereignty from the Member States and raises questions of democratic legitimacy. It also entails greater political integration. Another possibility is strict monitoring of centrally agreed rules by an independent institution. In recent years the Union's economic governance has already undergone radical revision, notably via the "Six Pack" and the "Two Pack". At that point the European Commission was already accorded a greater role in the supervision of the budget rules and in the new procedure for the prevention of macroeconomic imbalances. However, the Council retained a crucial vote in the decision-making process. Granting more powers to an independent institution could promote the effectiveness of the two procedures and limit the risk of bad policy.

The second key condition for a risk-sharing mechanism is that the Union must not become a union of permanent transfers ("Transferunion"). This means that the permanent redistribution of income is possible only within clearly defined limits. Income redistribution via the European cohesion policy is one example: the amount involved is small, and is fixed by the European Union as a whole in the MFF and in the annual budget, and the transfers are linked to conditions concerning expenditure and cofinancing; furthermore, the European Commission is moreover responsible for monitoring and assessment.

The great problem with all this is how to determine bad policy and bad luck. Simple answers often have their limitations. For instance, the French proposal for an

(1) For a clear overview, see Wolff (2012), A Budget for Europe's Monetary Union, Bruegel Policy Contribution, December.

(2) In the early 19th century the states began to borrow on a large scale, thereby accumulating heavy debts. On the assumption that their debt was implicitly guaranteed by the federation, many states requested a federal bail-out. However, Congress refused and in 1840 a number of states were unable to honour their commitments and had to implement painful adjustment measures (Cf. Bordo *et al.*, 2011).



unemployment benefit scheme tries to make that distinction by taking only cyclical unemployment – assumed to be the result of bad luck – as the basis for the Community payment of unemployment benefits; the part of the unemployment benefits relating to structural unemployment is then due to bad policy (e.g. an excessively rigid labour market) and has to be financed nationally. However, there are various potential methods of determining the cyclical and structural components, and agreement must first be reached on those methods.

## Conclusion

This article compares the euro area and the United States in order to draw lessons for improving the Economic and Monetary Union. Although still not perfect, the US comes closer to fulfilling the Optimum Currency Area criteria, and it did not experience the sovereign debt crisis that hit the euro area, partly because the US has federal institutions which are totally or partially lacking in the EU.

The stability of the euro area would improve if the Member States came closer to meeting the criteria of an Optimum Currency Area. That requires more flexible goods and labour markets and greater regional labour mobility. In addition, the Single Market needs to be deepened, and it is necessary to avoid economic imbalances which can generate contagion effects in other Member States. In the absence of a common economic policy like that in the US, there is a need for enforceable coordination of national policies. The necessary instruments have been available for a number of years: the Six Pack and the Two Pack could be further refined if need be, but the key issue now is to ensure that the country-specific recommendations resulting from the European Semester are actually implemented. This concerns a problem of ownership and political responsibility for the stability and prosperity of individual countries and the European Union as a whole.

It is vital to avoid any repeat of a European debt crisis such as that which occurred in 2010. The first requirement here is the completion of the banking union. In that respect, great progress has been achieved with the single supervisory mechanism, the detailed assessment of the banks which fall under it, and the establishment of a single resolution mechanism. However, by means of an amendment to the Treaty, the two tasks of the ECB – monetary policy and prudential supervision – could be kept entirely separate from one another, and the insurance sector could also be placed under common supervision. The resolution

mechanism should be complemented with a fiscal backstop, and the third pillar of the banking union, a single deposit guarantee scheme, could help to prevent adverse financial shocks in the euro area. In line with the principle of free capital movements, the financial markets should also be deepened by the creation of a genuine capital union in addition to a banking union. This means that the economy, just as in the United States, is financed more via non-bank channels, which requires among other things further streamlining of national rules and the creation of new financial instruments which are properly supervised and which, by providing potential investors with adequate information, can also help to finance SMEs. That will make it possible to increase 'risk-sharing' between the Member States via the financial markets, thereby reducing the need for budget transfers, which are moreover politically difficult in the European Union.

For the residual risk-sharing need, the US has an important form of debt mutualisation and a federal budget that helps to cushion economic shocks. However, that has evolved over two centuries of political integration, more particularly since Hamilton created the first federal government debt. The euro area implemented its common monetary policy immediately, and with success, but we cannot expect the 18 European nation states to take sufficient steps towards a political union within a relatively short time span, though that is probably necessary for the issuance of common debt and for an agreement on a substantial budget for the euro area or another shock-absorbing mechanism.

The issuance of common debt is a panacea for multiple euro problems and would expand the range of monetary policy instruments, but – like transfers – it is hijacked by the moral hazard problem, and the difficulty of distinguishing between bad policy and bad luck. Until a convincing solution has been found, we can expect such mechanisms to remain politically taboo. Rigorous implementation of the recommendations in the context of the European Semester could foster economic convergence between countries and could also broaden the political support for encouraging richer Member States to show more solidarity. Currency unions have a central budget because they are also political unions; the euro area is an exception to that historical rule. The euro area can survive without a federal budget; the margins inherent in the European fiscal rules, provided they are respected both in good and bad times, make it possible to absorb economic shocks via the national budgets, something that an efficient banking and capital union will do much to assist.

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