Fiscal federalism in crisis: some facts and lessons from the US for Europe

Zsolt Darvas
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1. Introduction

European fiscal integration is at crossroads. The fiscal crisis that has swept through Europe in the past couple of months has tested European Monetary Union and made it apparent that the current institutional setup – and its implementation – is insufficient. A major overhaul is needed.

Meanwhile, on the other side of the Atlantic, serious concerns have been expressed about US state and local government defaults (Gelinas, 2010). The spectre of ‘the mother of all financial crises’ has even been raised should the state of California default (Watkins, 2009). In late February 2010, Jamie Dimon, chairman of JP Morgan Chase, warned American investors that they should be more worried about the risk of a Californian default than about Greece’s current debt woes1. But the US’s state-level fiscal crisis has received much less attention than the difficulties in the euro area.

In fact both the US and the euro area face significant state-level fiscal crises, which are reflected in credit default swap (CDS) developments, which is a measure of the cost of insurance against government default (Figure 1). But neither the euro area as a whole, nor the US as a whole is going through a fiscal crisis. Paradoxically, while anxiety about the euro area has reached a very high level, both public debt and deficits are noticeably smaller in the euro area than in the US (Table 1).

It is against this background that this policy contribution aims to answer three questions:

- Why has the euro area been impacted so harshly?
- How would a more federal European fiscal union closer to the US model have helped to prevent and resolve the current fiscal crisis?
- How can the euro area’s fiscal architecture best be reformed?

Section 2 briefly compares some general features of the EU and US fiscal systems. This is followed by a more detailed comparison of fiscal-crisis prevention and management tools in Section 3. The lessons are drawn out in Section 4, and some concluding remarks are offered in Section 5.

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2. Centralisation, redistribution, autonomy and competition

It is useful to start with a brief comparison of the EU and US fiscal systems. Table 2 shows the distribution of tax revenues in the US: the federal government collects two-thirds, the states one-fifth, and local government the rest. As state budgets receive some direct funding from the federal government, the state and local government share of total spending is somewhat higher than 40 percent. States have a high level of autonomy, there is a great deal of variation in tax rates and structures, and tax competition between states is high (Gichiru et al, 2009; Bloechliger and Rabesona, 2009).

In the EU sovereign countries provide the bulk of the EU budget in the form of contributions largely related to their gross national income and value added tax revenues. EU countries have full autonomy in setting their budgets\(^2\) and tax competition is pervasive, much like US states.

Figures 2 and 3 compare the centralisation of revenues and the distribution of expenditures by the US federal government and the EU budget\(^3\). There is indeed a huge difference between the EU and the US. In the US, federal taxes collected from states range from 12 to 20 percent of state GDP, and federal monies received by states range from 9 to 31 percent of state GDP (not considering the District of Columbia). In the EU, most member states contribute to the common budget by amounts equivalent to about 0.8-0.9 percent of their GDP, and receive EU funds in the range of 0.5-3.5 percent of their GDP. As a consequence, fiscal redistribution is much higher in the US than in the EU. Also, while in both areas redistribution is related to the level of development as measured by GDP per capita, the relationship is much steeper in the US (as shown by Figure 4).

\(^2\) Within the weak limits of the EU-wide Stability and Growth Pact and other EU regulations, such as state aid rules.

\(^3\) For the US, it is not straightforward to calculate a proper balance of payments between the federal government and the states. To our knowledge, Leonard and Walder (2000) is the most recent study to perform such a calculation, which relates to the 1999 fiscal year and we therefore use their data.
3. Crisis prevention and management

The huge differences in centralisation and redistribution, however, do not tell us much about the potential role of the EU and US fiscal systems in preventing and managing state-level fiscal crises, which, as noted in the introduction, is a problem both for the EU and the US.

We compare the euro area with the US in eight ways. Firstly, there are three main areas that, in principle, can help to prevent or alleviate state-level crises in a federal system:

1. Fiscal rules: fiscal rules in a federal system, such as the US, tend to be much more stringent than in the EU/euro area. Thus there is less potential for irresponsible behaviour. Most US states have balanced budget rules in their constitutions: a study concluded that 36 states have rigorous balanced-budget requirements, four have weak requirements, and the other 10 fall in between those categories (National Conference of State Legislatures, 1999; Snell, 2004). Yet, as Figure 1 shows, CDS on bonds from some US states increased to higher values than any euro-area country after the collapse of Lehman Brothers in September 2008, and current US state CDSs are similar to those of Ireland, Italy, Portugal and Spain, though none have reached current Greek values (Figure 1). California, whose fiscal rules belong to the ‘most stringent’ category noted above, is perhaps in the deepest trouble. Its cash constraints even led to the issuance of vouchers to the value of $2.6 billion between July and September 2009, which may in fact be considered to be an event very similar to a default.

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Box 1: Fiscal federalism

“The traditional theory of fiscal federalism lays out a general normative framework for the assignment of functions to different levels of government and the appropriate fiscal instruments for carrying out these functions (e.g., Richard Musgrave 1959; Oates 1972).” (Oates, 1999, p. 1121). In practice, there are various forms of fiscal federations (see eg von Hagen and Eichengreen, 1996; Gichiru et al, 2009; or Bloechliger et al, 2010), even though the US has always been the main point of reference. Europe’s supranational formation, the EU, can also be regarded as a form of fiscal federalism, since certain functions, such as the common agricultural policy or cohesion policy, are largely centralised. The literature on fiscal federalism is voluminous; see eg a recent handbook edited by Ahmad and Brosio (2006) and its extensive reference list. Our policy contribution deals with a single issue: the prevention and management of state fiscal crises in the EU and the US.

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4 CDS is available only for 15 of the 50 US states and hence we cannot assess the other 35 states.

5 Barro (2010) argues that California has been in a state of budget crisis for at least the last seven years, stemming from institutional failures.
2. **Less scope for state/local debt**: because a high share of revenues and expenditures are centralised in a federal system, and state-level fiscal rules are in general strict, state spending, even if irresponsible, does not have the potential to lead to massive debt/GDP ratios. Indeed, the combined debt of US states and local governments amounted to about 16 percent of US GDP in 2006. This ratio is expected to rise somewhat to 22 percent by 2010 (Figure 5)\(^6\). These lower debt ratios can be serviced from lower revenues, as a substantial fraction of revenues must be transferred to the fiscal centre.

3. **Federal stabilisation policy may help to avoid pro-cyclicality**: There are good reasons to delegate counter-cyclical fiscal policy to the centre (IMF, 2009): it allows better or easier policy coordination, exploits economies of scale by relying on a large tax base and better borrowing conditions, and also provides risk-sharing opportunities. During the current crisis, the US federal government indeed allowed automatic stabilisers to run and adopted a major discretionary stimulus including direct help to state budgets. In the EU, such counter-cyclical policies were left to each member state with some attempt made at coordination. But have fiscal outcomes been different in the EU and the US?

In the US, counter-cyclical fiscal policy directed from the centre was counter-balanced by fiscal consolidation at state level. McNichol and Johnson (2010) calculate a measure of state budget shortfall (the difference between projected revenues for each year and a ‘current services’ baseline) that reflects state fiscal conditions before deficit-closing actions are taken. States use a combination of measures to close the deficits, including deployment of federal stimulus funds, budget cuts, tax increases and reserves\(^7\). Table 2 shows that, while state budgets have indeed received direct federal support through the American Recovery and Reinvestment Act (ARRA), and states could rely to some extent the reserves accumulated in their rainy-day funds, but spending cuts and tax increases could not be avoided.

Similarly, Bloechliger et al (2010, p 19) note that among OECD countries “the USA is probably the most notable case of pro-cyclical reactions from sub-central governments”. They also report a contemporaneous correlation between net lending and output gaps, which is 0.36 for the US federal government (implying counter-cyclicality), but -0.38 for US states (implying pro-cyclicality). Using lags, the correlation coefficient for states is around -0.66 implying even stronger pro-cyclicality.

In a more formal study, Aizenman and Pasricha (2010) assessed the aggregate impact of federal and state spending during 2008/2009. They concluded that the big federal stimulus broadly

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\(^6\) During the same years, federal government debt has increased from 63 percent to 94 percent of US GDP. The small increase in state and local debt is largely due to fiscal consolidation required by fiscal rules.

\(^7\) Following the recession of the early 1980s, the number of US states with rainy-day funds rose from 12 in 1982 to 38 in 1989, and to 45 in 1995. The aim of these funds is to smooth public spending during recessions and, possibly, increase public savings over the business cycle. See Box 1 in Ter-Minassian (2007).
compensated for the contraction of state level spending. In net terms, stimulus was close to zero in the US in 2008/2009. And by studying seven fiscal federations (including the US) and about two decades of data mostly from the 1980s and 1990s, Rodden and Wibbels (2010) conclude that pro-cyclical fiscal policy among provincial governments can easily overwhelm the stabilising policies of central governments.

These results are for the average of the US states: in more distressed states, the combined effect of federal and state spending may have led to pro-cyclical fiscal policy. Figure 6 shows that states’ own spending was cut on average by about four percent in the fiscal year 2009 and about an additional seven percent in the fiscal year 2010, but there were some states with much higher cuts, eg 12 states cut own spending by more than 10 percent (and four others between 9 and 10 percent) in the fiscal year 2010.

In the EU, during the first phase of the crisis, ie during 2008/2009, almost all euro-area members adopted discretionary fiscal measures. The exceptions were Cyprus, Greece, Italy and Slovakia (European Commission, 2009). In 2010, Greece adopted several fiscal austerity programmes, and Portugal and Spain also speeded-up fiscal consolidation, while Italy announced plans for 2011. But most euro-area countries have not yet modified their fiscal plans.

While fiscal numbers for 2010 and beyond are not yet available, it is fair to say that there are states both in the euro area and the US that had to deal with pro-cyclical fiscal policy sometime during the crisis, and there are states that could benefit from counter-cyclical fiscal policy. Therefore, from the point of view of actual outcomes, the superiority of federal stabilisation policy cannot be established when we compare the euro area to the US.

The next three areas in which the EU and the US can be compared indicate significant similarities in the context of the resolution of fiscal crises:

4. No orderly default mechanism: neither the EU nor the US has a default mechanism for, in the EU case member states, and in the US case states (although the US has a default mechanism for lower levels of government, though under stricter rules than for private corporations; see Gelinas, 2010).

5. No bail-out from the centre: at least prior to the crisis, there were no bail-out or short-term financing mechanisms in the US for states, or in the EU for euro-area governments. President Gerald

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8 Yet primary balances also worsened between 2008 and 2009 in all of these countries: in Greece from -3.1 percent to -8.5 percent, in Italy from +2.5 percent to -0.6 percent, in Cyprus from +3.7 percent to -3.6 percent, and in Slovakia from -1.1 percent to -5.3 percent (all values are expressed in percent of GDP; source: European Commission, 2010). In Greece, the 2009 recession was reasonably mild, GDP fell by 2 percent only, suggesting that the ballooning primary deficit represented counter-cyclical fiscal policy (perhaps partly as a consequence of a loose budget ahead of the late 2009 parliamentary elections).
Ford at first refused New York city a bail-out in 1975, and President Barack Obama said no to California in 2009. In the former case, ultimately both the US federal government and New York state provided loans to the city, but they imposed a financial control board that required deep cuts to services, a new, more transparent budget process and several years of budgetary oversight (Malanga, 2009). But it was in Europe, not the US, where a formal emergency lending facility was put together, and it was the European Central Bank that started to buy the government bonds of distressed member states.

6. No option to devalue the currency and to inflate the debt: neither euro-area countries nor US states have the devaluation option, though it could boost growth and thereby help fiscal sustainability, or to generate inflation in order to reduce the real value of debt.

But there are also two fundamental differences between the EU and the US that have a bearing on fiscal sustainability:

7. Banking system strength: the US is regarded as having implemented effective measures to improve its banking system, while Europe has not (Véron, 2010). In a federal fiscal system, where banking regulation and supervision are also centralised and therefore cross-border banking issues are not relevant, fixing the financial system is certainly easier.

8. Labour and product market flexibility: the US is closer to an optimum currency area than the EU in these respects. In fact, in the context of this policy contribution, Mankiw (2010) reminded us that “the United States in the 19th century had a common currency, but it did not have a large, centralized fiscal authority. The federal government was much smaller than it is today. In some ways, the US then looks like Europe today. Yet the common currency among the states worked out fine.” His key point is that the common currency worked well even when there were severe recessions, because labour markets were much more flexible than in Europe today.

4. Lessons for Europe

Therefore, although both the euro area and the US have many similarities in terms of the state-level fiscal crisis, only the euro area’s viability has been questioned, though the overall fiscal situation is better in the euro area than in the US. Yet we would like to highlight that the depreciation of the euro against the dollar, which frequently occupies press headlines, should be assessed from a more appropriate angle. While the euro area’s problems undoubtedly triggered the depreciation, the euro has been very strong during the past couple of years and depreciation so far has meant only that it has moved closer to its equilibrium value defined by purchasing power parity (Figure 7). There are many other issues of more concern than the euro’s correction, which may in the coming months overshoot similarly to many other historical episodes of exchange rate overshooting.
4.1 Why has the euro area been judged so harshly?

A simple, but in our view insufficient, answer is that the Greek fiscal problems are much more serious than fiscal problems in any US state. Greece has a real solvency problem: high debt, high deficit, weak tax-collection capability, social unrest and a loss of confidence. No US state is in a similar situation. Even if the current IMF/euro-area financing programme goes ahead as planned, the Greek debt/GDP ratio would stabilise at around 150 percent of GDP in a country with very weak fiscal institutions. Should any other negative shock arrive, or should the programme not go ahead as planned, Greece will not be able to avoid default.

A second reason for the more serious fiscal crisis in the euro area is that a Greek default may have more serious contagious effects within the euro area than the default of a state would in the US. Debt levels in euro-area member states are much higher (both relative to GDP and in absolute terms) than in US states, and a significant share of euro-area sovereign debt is held by European banks, while in the US a large part of state debt is held by residents. Little is known in Europe about the resistance of individual banking groups to eventual sovereign defaults (Gros and Mayer, 2010), though for the banking system as a whole there seems to be a sufficient buffer (OECD, 2010).

A third factor is the ambiguous policy response. When the Greek crisis began to intensify in February 2010, the Greek government was hesitant about adopting further consolidation measures, and European partners dithered over providing a loan to Greece and agreeing to IMF involvement (which is, by the way, not prohibited by any European regulation). As the crisis intensified, policymakers started to blame ‘speculation’9, or suggest ad hoc measures, such as banning certain financial products and setting up a European credit rating agency. When policymakers are busy with these kinds of redundant activities and provide conflicting signals about their intentions, markets are likely to draw the conclusion that policymakers do not have the means to resolve the crisis.

Last but not least, the euro-area institutional set-up may have also played a role, such as the lack of a strong federal government, which ultimately would have ample resources to bail-out big banking groups or even perhaps states if and when deemed appropriate. Gros and Mayer (2010) also rightly point out that the US Treasury and the Federal Reserve stand shoulder-to-shoulder, each one providing a guarantee for the other, which is not the case in the euro-area. Also, while the euro is much more than a simple economic endeavour, the commitment of the US to the US dollar is certainly stronger than the commitment of euro-area nations to the euro, even if the eventual exit of a member state or a full break-up of the euro-area would lead to an economic chaos.

9 While theoretical models make the case for pure self-fulfilling crises, the current euro-area fiscal crisis is not one. It was not accidental that Greece was attacked and not, for example, Finland, and it was also not accidental that Portugal was threatened most by contagion and not, for example, Slovakia.
(Eichengreen, 2007).

4.2 How would a more federalist European fiscal union have helped to prevent and resolve the current fiscal crisis?10

1. it would have reduced the scope for state-level crises through stricter pre-crisis state-level fiscal rules,
2. it would have helped to strengthen the euro-area banking industry and to introduce euro-area-wide banking-resolution schemes, and
3. it would have enabled a federal counter-cyclical fiscal policy that may have dampened the effect of consolidation in those few member states that started to consolidate in 2010.

Furthermore, a more federal European set-up could have helped:
4. to implement EU/euro-area-wide banking supervision and regulation,
5. to speak with only one decisive voice instead of many conflicting ones.

Resolving European cross-border banking-sector crises seems to be a tough job unless there is a higher level of fiscal integration, and indeed, looking at the list above, this is the best argument for a more federal approach. But, in principle at least, crisis resolution can be done without greater integration.

It is inevitable that measures will be taken to implement fiscal rules more effectively than it has been done under the SGP. But this does not necessarily require a fiscal federation. Most US states have constitutional fiscal rules – the approach adopted by Germany recently. Other euro-area members may also choose this approach, thereby increasing their credibility and fiscal sustainability.

As for the design of a common euro-area-wide counter-cyclical fiscal instrument, we have already argued that the superiority of the US fiscal stabilisation policy compared to Europe’s cannot be established. Furthermore, adequate progress on the other items may render such a euro-area instrument unnecessary, since all euro-area countries would be able to run their own counter-cyclical fiscal policies. Even for the US the moral hazard involved in federal counter-cyclical fiscal

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10 An aspect that we intentionally do not consider here is the level of fiscal redistribution, which, as we have shown, is much higher in the US than in the EU. The average level of fiscal redistribution certainly has a bearing on the scope for federal stabilisation (ie counter-cyclical fiscal) policy, but we discuss the issue of stabilisation. It is noteworthy, however, that Greece, the main culprit of the current euro-area crisis, was the highest net beneficiary (as a percent of GDP) of intra-EU redistribution (Figure 2), and it has received much more that what the relationship between net balance with the EU and GDP per capita would suggest (Figure 3A). Another reason for not discussing the level of redistribution is that, as eg Oates (1999) argues, fiscal equalisation is a contentious and a very complex economic and political issue.
policy is a major consideration [Aizenman and Pasricha, 2010]. This would not be different for Europe.

As for the one voice, it seems unavoidable that policymakers in individual member states will continue express individual views. But this should not necessarily be a problem if other items on the list are fixed and therefore the potential for an area-wide crisis is minimal.

4.3 How can the euro area's fiscal architecture best be reformed?

Numerous suggestions have been made on how to solve the euro-area fiscal crisis and to prevent future crises. These range from the mere strengthening of the current rules to a move towards a full fiscal union, from letting Greece default to setting-up a European Monetary Fund, or from more intensive fiscal policy coordination between euro-area member states to the issuance of a common Eurobond. Current discussions suggest that the reform of the euro-area fiscal framework will mostly comprise [1] stricter enforcement of current rules partly through fines, [2] more fiscal coordination, and [3] a permanent emergency financing mechanism for euro-area member states funded primarily from national contributions. These will probably be supplemented by [4] surveillance of private sector imbalances and better harmonisation of economic policies. These proposals would introduce institutions that do not exist for the US states.

While improvements along these lines would certainly improve the euro-area policy framework compared to before the crisis, we doubt that the first three items really represent the best path towards reform of the euro-area fiscal architecture. There are two reasons for our doubts: credibility and political risk.

Credibility of the new instruments: much will of course depend on the details of the new framework. So far, the credibility of any European instrument has been damaged by a series of U-turns. The credibility of planned new instruments is undermined if there is the potential for further U-turns. We highlight four major U-turns. First, until February 2010 the euro-area had a framework in which no support was to be provided to fiscally profligate countries: this principle was dropped very quickly to help out a country that has flouted the rules extensively. Second, during the crisis, the European Central Bank has substantially reduced the quality requirements for collaterals eligible for refinancing operations, but planned to return to pre-crisis standards by January 2011. Until early 2010, the ECB very explicitly denied that it would switch its planned return of collateral policy back to pre-crisis standards. Since the credit rating of Greek government bonds has been downgraded, a return to pre-crisis collateral policy has raised the risk of exclusion of Greek government bonds. But the ECB first postponed the return and later even abolished any credit rating requirement for Greek

11 Article 122 of Treaty, which allows the provision of financial assistance to a Member State when "exceptional occurrences beyond its control" occur, was certainly not applicable for the bail-out of Greece.
government bonds (and just for Greek bonds). Third, many European policymakers strongly opposed IMF involvement in the rescue of a euro-area country, but there was a U-turn in this respect as well. Fourth, the ECB long denied the need for, and its willingness to, purchase government bonds of distressed member states, but it has since done exactly this. These U-turns in many cases were reactions to events, but if it is believed there will be similar changes to the new instruments in the future, their credibility will be undermined from the outset.

Political risk: the emergency financing mechanism for euro-area member states carries a significant political risk. If donor countries have to pay too much to help out others, especially if some of those others followed clearly unacceptable policies in the past and they eventually default, then the loan (or a large fraction of it) will not be repaid, and the citizens and politicians of donor countries will be deterred from risking further losses. The eventual consequences of such a move may be disastrous, especially if it happens after the current three-year temporary mechanism is transferred into a permanent facility.

However, the simple elimination of this financing facility after its expiry without any bold action to put something new in place would risk a wave of uncertainty. A very clear, credible and simple solution is needed. Such a solution could be the introduction of a common Eurobond as suggested by Delpla and von Weizsäcker [2010]. Member states would be entitled to issue jointly guaranteed Eurobonds, but only up to 60 percent of GDP (‘blue bond’). They would issue any additional bond with their own guarantee (‘red bond’). The blue bond would be senior to the red bond. By construction, this would mean a credible commitment by euro-area partners to not bail-out the red part of sovereign debt. Such a mechanism would provide an extremely strong incentive for countries to convince markets that their red debt is safe, promoting fiscal discipline much more powerfully than any other fiscal coordination proposal currently on the table. Being both sensible and bold, the introduction of blue and red bonds would carry a strong political message that Europe’s integration cannot be reversed.

5. Some concluding remarks

The euro area faces a deep crisis, while the US does not, though the overall fiscal situation and outlook is better in the euro area than in the US, and though the US also faces serious fiscal crises at state level.

12 There are many other well founded arguments against a formal emergency financing mechanism and even for allowing member states to default sometimes, see eg Wyplosz [2009], Enderlein [2010], Méltz [2010], or Cochrane [2010].

13 As an important ‘by-product’, higher volume and increased liquidity of the Blue bond compared to bond market of any current member state, including the markets for German Bunds, would provide a more attractive alternative to US Treasuries for outside investors, and thereby even Germany would benefit from lower yields.

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It is the US federal framework that has proved effective in preventing out-of-control state-level debts and allowing smoother resolution of banking system problems. By contrast, in Europe, the ambiguous policy response and the institutional deficiencies of euro-area governance have exaggerated the crisis.

There is a large number of proposals on the table about the redesign of the euro-area policy framework, and the most likely outcomes will not make Europe’s fiscal framework more similar to that of the US. Our overall conclusion considering various aspect of crisis prevention and management is that this is not necessarily a problem, if Europe can find effective solutions to the challenges of its institutional set-up, even though a more federal set-up would help to resolve cross-border banking crises. However, while the expected scrutiny of private sector imbalances is to be welcomed enthusiastically, we are doubtful about the other likely elements of the new framework, namely the mere strengthening of current rules, more fiscal policy coordination and an emergency financing mechanism. While these would be improvements compared to the current set-up, they may not be seen as sufficiently credible, and may simply require further change should new circumstances emerge. The permanent emergency-financing mechanism could create moral hazard and carries a serious political risk: donor countries may decline to provide further funding after an eventual sovereign default.

Instead of requesting huge sums of money to bail-out actual or perceived profligate countries, it would be much more reasonable to introduce a common Eurobond along the lines of Delpla and von Weizsäcker (2010). That would bring about much more fiscal discipline than any other fiscal coordination and enforcement proposal currently on the table, would create a large, liquid, and therefore attractive Eurobond market, and would carry a strong message about the irreversible nature of European integration. The three-year period during which the current temporary emergency financing mechanism will be in place is sufficient to properly design the Eurobond.

Yet the euro area has a more entrenched problem than the fiscal sustainability of some of its member states: the inability of some Mediterranean economies to address their competitiveness problems within the euro area (European Commission, 2008; Darvas, 2010; Marzinotto, Pisani-Ferry and Sapir, 2010). This problem is more difficult to solve than the fiscal crisis, because fostering private sector adjustment is very hard and depends not just on government decisions. Also, since Europe is culturally diverse, solutions that work in one country may not work in another. Helping member states with serious competitiveness problems to design and accept necessary structural reforms is of utmost importance, as are measures to move the whole euro area, including its labour market, towards an optimum currency area.
### Table 1. The US vs the Euro area: some key indicators, 2009-2011

<table>
<thead>
<tr>
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<th>US</th>
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<th></th>
<th>Euro area</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>General government budget balance (% GDP)</td>
<td>-11.0</td>
<td>-10.0</td>
<td>-9.9</td>
<td>-6.3</td>
<td>-6.6</td>
<td>-6.1</td>
</tr>
<tr>
<td>General government gross debt (% GDP)*</td>
<td>103.6</td>
<td>116.0</td>
<td>122.0</td>
<td>78.7</td>
<td>84.7</td>
<td>88.5</td>
</tr>
<tr>
<td>GDP growth (% change)</td>
<td>-2.4</td>
<td>2.8</td>
<td>2.5</td>
<td>-4.1</td>
<td>0.9</td>
<td>1.5</td>
</tr>
<tr>
<td>Inflation (% change)</td>
<td>-0.4</td>
<td>1.7</td>
<td>0.3</td>
<td>0.3</td>
<td>1.5</td>
<td>1.7</td>
</tr>
<tr>
<td>Employment growth (% change)</td>
<td>-3.8</td>
<td>-0.4</td>
<td>0.6</td>
<td>-2.1</td>
<td>-1.0</td>
<td>0.1</td>
</tr>
<tr>
<td>Unemployment rate (% labour force)</td>
<td>9.3</td>
<td>9.7</td>
<td>9.8</td>
<td>9.4</td>
<td>10.3</td>
<td>10.4</td>
</tr>
</tbody>
</table>

Note. * The government debt data shown for the US is the sum of federal, state and local government debts – the concept better corresponds to ‘general government debt’ statistics of the EU. Considering US federal government debt only, it is seen at 83.3, 94.3, and 99.0 percent of GDP in 2009, 2010, and 2011, respectively.

Sources: European Commission (2010) for all data except US government debt, which is from [http://www.usgovernmentspending.com/federal_state_local_debt_chart.html](http://www.usgovernmentspending.com/federal_state_local_debt_chart.html).

### Table 2. Distribution of revenue by tax type collected by all federal, state, and municipal governments in the US, 2006 (percent)

<table>
<thead>
<tr>
<th></th>
<th>Federal</th>
<th>State</th>
<th>Local</th>
</tr>
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<tbody>
<tr>
<td>Property tax</td>
<td>0</td>
<td>3</td>
<td>97</td>
</tr>
<tr>
<td>General sales tax</td>
<td>0</td>
<td>80</td>
<td>20</td>
</tr>
<tr>
<td>Selective sales/excise taxes</td>
<td>36</td>
<td>52</td>
<td>12</td>
</tr>
<tr>
<td>Individual income tax</td>
<td>80</td>
<td>19</td>
<td>2</td>
</tr>
<tr>
<td>Corporate income tax</td>
<td>87</td>
<td>12</td>
<td>1</td>
</tr>
<tr>
<td>Motor vehicle license</td>
<td>0</td>
<td>93</td>
<td>7</td>
</tr>
<tr>
<td>Social insurance/retirement</td>
<td>100</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Other taxes</td>
<td>54</td>
<td>30</td>
<td>16</td>
</tr>
<tr>
<td><strong>Total taxes</strong></td>
<td><strong>67</strong></td>
<td><strong>20</strong></td>
<td><strong>13</strong></td>
</tr>
</tbody>
</table>

Source: Gichiru et al 2009, Table 3, page 12.
Table 3: Estimated US State Budget Shortfall in each Fiscal Year, USD billion

<table>
<thead>
<tr>
<th></th>
<th>FY2009</th>
<th>FY2010</th>
<th>FY2011</th>
<th>FY2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>State budget shortfall</td>
<td>110</td>
<td>200</td>
<td>180</td>
<td>120</td>
</tr>
<tr>
<td>(total of all States)</td>
<td></td>
<td></td>
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<td>Covered by:</td>
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<td>American Recovery</td>
<td>39</td>
<td>63</td>
<td>36</td>
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<td>and Reinvestment Act</td>
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<tr>
<td>Spending cuts</td>
<td>74</td>
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<tr>
<td>Tax and fee increases</td>
<td>34</td>
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<td>Other/Use of reserves</td>
<td>29</td>
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Sources: Total and ARRA contribution: Figure 3 on page 5 of McNichol and Johnson (2010); others: CBPP preliminary unpublished estimates based on a sample of states.

Figure 1. Credit Default Swap on 5-year government bonds in some US States and some EU Member States, 2 January 2008 – 7 June 2010

Source: Datastream
Figure 2. US federal budget: Taxes from, spending in, and balance with states, 1999, percent of state GDP

Source: Author’s calculations using data from http://www.hks.harvard.edu/taubmancenter/publications/fisc/ [fiscal data] and OECD regional database [GDP].
Figure 3. EU budget: Contribution from, spending in, and balance* with member states, 2008, percent of Member State GDP

Note. * EU’s administration spending is excluded from the balance.
Source: Author’s calculations using data from [http://ec.europa.eu/budget/documents/2008_en.htm?go=t3_3#table-3_2](http://ec.europa.eu/budget/documents/2008_en.htm?go=t3_3#table-3_2) (fiscal data) and Eurostat (GDP).
Figure 4. Fiscal redistribution within the US and EU vs GDP per capita
A: individual US States and EU member states

B: Major regions

Note. 2008 for EU and 1999 for US. US: Federal expenditures in the given state minus federal taxes from the given state,
percent of state GDP. In Panel A District of Columbia (300.0, 40.8%) is not shown for better readability. EU: Total EU expenditure [less administration] in the given country minus total country contribution to the EU budget, percent of country GDP. In Panel A Luxembourg (276.1, -0.03%) is not shown for better readability.

Group values are weighted averages; weights were derived from nominal GDP. For the US we used the Divisions defined by the Census Bureau (District of Columbia is not included in the South Atlantic average). For the EU the groups are the following: CEE10: Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia, and Slovenia; MED5: Cyprus, Greece, Malta, Spain, and Portugal; UK&IE: Ireland and the United Kingdom; NORD3: Denmark, Finland, and Sweden; ABLN4: Austria, Belgium, Luxembourg, and the Netherlands; Italy (IT), France (FR) and Germany (DE) are shown separately.

Source: See data sources at Figures 2 and 3.

**Figure 5. US gross public debt: federal, state, and local, 1902-2012 (percent of US GDP)**

Source: [http://www.usgovernmentspending.com/federal_state_local_debt_chart.html](http://www.usgovernmentspending.com/federal_state_local_debt_chart.html)

Note. 2010-2012 values (plus 2009 value for States and 2008-2009 values for local governments) are estimates (partly based on budgets) by usgovernmentspending.com.
Figure 6. General fund state spending in the US, fiscal years 1990-2010 [annual percent change]


Note. General Fund: the predominant fund for financing a state's operations; revenues are received from broad-based state taxes. All data refer to fiscal year [which ends in most states in May of each year]. The time series for All States is taken from the Spring 2010 Survey. Data for each state and for each year was taken from the Fall Surveys (except in 2010) and correspond to changes of expenditures in the previous fiscal year to the current fiscal year, where previous fiscal year data is 'actual' and the current fiscal year data is 'preliminary actual'. The 2010 fiscal year data is the estimate published in June 2010.
Figure 7. Exchange rate of the euro against the US dollar and the PPP conversion rate, 4 January 1999 – 7 June 2010

Sources: daily market rate: ECB; implied PPP conversion rate: IMF World Economic Outlook April 2010. The PPP conversion rate is available for each euro-area member state and we plot a time-varying weighted average (considering only those countries that were member of the euro area in the given year; using given year shares in aggregate euro-area GDP).

Note. A fixed-weight average of the PPP conversion rate of the first 12 countries that adopted the euro remains within plus/minus 0.6 percent range around the shown time-varying weighted average during 2001-2010.
References


Bloechliger, Hansjörg, Monica Brezzi, Claire Charbit, Mauro Migotto, José María Pinero Campos, and Camila Vammalle, [2010], 'Fiscal policy across levels of government in times of crisis', OECD Working Paper No12


European Commission (2008), 'EMU@10: Successes and Challenges After 10 Years of Economic and Monetary Union', European Economy No 2, Directorate-General Economic and Financial Affairs of the European Commission


European Commission

Galle, Brian and Jonathan Klick (2010), ‘Recessions and States’ Fraying Social Safety Nets: Is Federalism the Answer? Evidence from the AMT’ [121]


Gichiru, Wangari, Jennifer Hassemer, Corina Maxim, Riamsalio Phetchareun, and Dong Ah Won (2009), ‘Sub-Central Tax Competition in Canada, the United States, Japan, and South Korea’, paper prepared for the Fiscal Federalism Network, Organisation for Economic Co-operation and Development (OECD)


OECD (2010), 'OECD Economic Outlook', May 2010


http://www3.interscience.wiley.com/journal/122577501/abstract

http://www.ncsl.org/?TabId=12651


Veron, Nicolas (2010), 'EU Inaction on Banks Grows Ever Costlier',


Watkins, Bill (2009) 'What Happens When California Defaults?' 16 December 2009,
http://www.newgeography.com/content/001274-what-happens-when-california-defaults

Wyplosz, Charles (2009), 'Bailouts: the next step up?', 21 February 2009,