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Public Finances in EMU – 2009

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EDITORIAL

Public finances are a key driver in the EU for economic recovery as the depth of the recession and credit constraints require fiscal policy action. This has been recognised in the European Economic Recovery Programme, which includes an EU-wide, and globally, coordinated effort for discretionary fiscal support to the EU economy. An even larger support of the EU's economy is coming from automatic stabilisers. Across Member States however, the fiscal policy needs, possibilities and responses have differed strongly, reflecting notably initial different macroeconomic starting positions and market pressures.

The fiscal support for the economies together with rising interest rates in some countries and heavy public interventions in the financial system has led to a sharp deterioration in public finances. And there are significant upside risks for further increases in debt levels when considering that the resolution of the banking sector in the EU is only advancing slowly. But past experiences teach useful lessons on how fiscal costs of banking crises can be contained and which factors can facilitate to eventually bringing the fiscal houses back in order. This includes on the banking crisis resolution side a transparent, resolute and swift strategy, without regress to regulatory forbearance, as well as a fair and uniform treatment of market participants backed by strong public institutions and legal frameworks. For the fiscal consolidation part, strong fiscal governance frameworks, notably national fiscal rules, are a factor of success.

Today's challenging times have also been a stress test for the Stability and Growth Pact. With the newly built-in flexibility of the reformed Pact in 2005, the EU fiscal framework has allowed on the one hand, to provide the appropriate support to the EU economies in exceptional times while, on the other hand, set a clear path for future fiscal adjustments. While the fiscal consolidation in the past several years has created some buffer in most countries, the need to improve the preventive arm of the Pact needs to be carefully considered when emerging from the crisis. This includes particularly the lack of some Member States to use the "good" pre-crisis times to improve the state of their public finances which would have let them enter the crisis from even more comfortable starting positions. Moreover, past budgetary surveillance has not been sufficiently comprehensive in accounting for the role of fiscal policy in allowing the build-up of internal and external imbalances.

This year's *Public finances in EMU* report reviews how Member States have tackled the challenges from the financial and economic crisis and assesses the prospects for public finances and policy needs ahead. The report follows a well-known and successful formula of past years, essentially consisting of four major elements. The first element is a detailed description and analysis of recent budgetary developments, with a focus this year on the EERP, and an assessment of the outlook. The second element of the report is an examination of the EU's fiscal surveillance framework. This year the main issues are (i) the statistical treatment of public interventions in the financial system, (ii) ways to improve the measure of the cyclically-adjusted budgetary balance, (iii) the measurement of the quality of public finances and (iv) developments in Member States' fiscal frameworks. The third element consists of analytical studies. The 2009 report assesses in detail the fiscal costs of past financial crises and their determinants, and draws important policy conclusions for handling today's crisis. Moreover, the report studies the link between house price developments and public finances during booms and busts and the role for fiscal policy in busts when fiscal space is constrained. The fourth and final element of the report provides an overview of fiscal developments in the 27 Member States.

Since the first report was released in 2000, the issues of *Public Finances in EMU* have sought to raise awareness and understanding of key fiscal developments and policy challenges. They also reviewed and launched ideas on how to strengthen the framework for economic governance and to improve its enforcement. Given the unprecedented challenging times for public finances, this year's tenth edition of the report, as those in previous years, should be an important contribution to the debate on fiscal policy in the EU and remain a key reference for practitioners and policy-makers.

Marco Buti
Director-General
Economic and Financial Affairs

Reports on Public Finances in EMU 2000-2009

The ten reports on Public Finances in EMU that have been issued since the first edition in 2000 can be found at: *http://ec.europa.eu/economy_finance/publications/specpub_list9257.htm*

The set of reports provides an overview of budgetary developments and evolving budgetary surveillance since the start of EMU. Moreover, all issues include two or three studies on topical issues, providing impetus to the development and implementation of the EU fiscal framework:

2000 The Stability and Growth Pact one year on.

Focus on taxation in the EU.

2001 Fiscal policy and cyclical stabilisation in EMU.

The quality and sustainability of public finances.

2002 Public expenditure in EU countries.

Is there a role for discretionary fiscal policy in EMU?

Key budgetary issues for the candidate countries of central and eastern Europe.

2003 Public investment and its interaction with the EU's budgetary rules.

Can fiscal consolidations in EMU be expansionary?

Meeting the EU's budgetary requirements: national expenditure rules and fiscal relations across levels of government.

2004 The benefits of fiscal discipline.

The quality of public finances: What role within the EU framework for economic policy coordination?

2005 Structural reforms and budgetary objectives.

Fiscal challenges during convergence in the recently acceded Member States.

2006 National numerical fiscal rules and institutions for sound public finances.

Fiscal policy in good times.

2007 How to stick to medium-term budgetary plans.

Lessons from successful fiscal consolidations.

2008 The quality of public finances and growth: a conceptual framework.

The efficiency of tax systems.

2009 The fiscal costs of financial crises: past evidence and implications for today's crisis.

Public finances in booms and busts.

SUMMARY AND MAIN CONCLUSIONS

Financial and economic crisis hits budgetary developments and prospects

Unparalleled challenges in face of the current crisis…

Public finances in the EU have come under unprecedented stress as they play a central role in overcoming the financial and economic crisis. The EU economy has been particularly hard hit by the shockwave of the crisis, which emanated and quickly spread from the United States, due to the EU's strong export dependence, its integration and role in global capital markets, and large external and internal macroeconomic imbalances that had built up in a number of Member States. For 2009, the EU's real GDP is projected to fall by 4% before stabilising at -0.1% growth in the course of 2010. Due to the depth of the recession and credit constraints, public finances in the EU are shouldering a particular burden by responding to the crisis with three objectives: (i) addressing demand shortfalls in the short run through fiscal stimulus measures and letting automatic stabilisers play, (ii) restoring the health of the financial sector and supporting the intermediation function of financial markets and (iii) contributing to long-term growth prospects, inter alia by ensuring sustainable budgetary developments.

… make public finances a key driver for economic recovery …

With its European Economic Recovery Programme (EERP) the EU has defined an effective framework for addressing the economic downturn combining active fiscal stimulus with structural reforms. The programme, endorsed by the European Council in December 2008, calls for discretionary fiscal support of at least 1.5% of GDP. This EU-wide, and also globally, coordinated response is a crucial contribution to tackling the global economic crisis in which all countries with sufficient fiscal space need to play a role in filling short-term demand gaps. Model simulations by the Commission services clearly indicate that a coordinated policy response has a considerably larger impact on output and is thus eventually less costly, since leakages are contained, than those undertaken by a single country. Overall, Member States have adopted or announced fiscal stimulus measures totalling 1.1% of GDP in 2009 and 0.7% of GDP in 2010. Of the total, 1% of GDP is on the revenue and 0.8% of GDP on the expenditure side. These stimulus measures are estimated by Commission services to contribute to about ¾% of real GDP growth in 2009 and about ⅓% in 2010.

... through coordinated EU fiscal stimulus packages …

The fiscal support packages adopted under the EERP have broadly followed desirable general principles but some risks on their effectiveness remain. The set of principles includes the well-known "three Ts" (timely, temporary and targeted) in addition to the need for a coordinated approach taking into account cross-country differences in fiscal space. As regards the timeliness, there were initially concerns that under the projected growth path the impact of the EERP could take effect relatively late in the cycle. But with the materialisation of the downward risks to the projections this concern has evaporated. As regards the targets of measures, to a large extent they have been geared toward those with the highest multiplier effects and therefore the greatest potential to mitigate the impact of the crisis on economic activity. However, the support of individual industries in some Member States, while successful in filling short-term demand gaps, needs to be weighed against its potential longer-term distortionary effects. As regards temporariness, this is assured for the majority of measures (e.g., frontloading of public investment and tax relief for which discontinuation has been announced). However, there

remains a risk that especially some of the revenue measures become entrenched.

… and the functioning of automatic stabilisers.

In addition to discretionary measures, an even larger support of the EU's economy is coming from automatic stabilisers. The larger size of governments in the EU than in the United States, particularly the more extensive social security systems explains the greater importance of this channel of support to economic activity in the EU compared to the United States. As a consequence, the average budget deficit in the EU already worsened in 2008 to 2.3% of GDP from 0.8% in 2007 (1.9% in 2008 and 0.6% in 2007 in the euro area) and is expected to widen further by 5.0% of GDP by 2010 (4.6% of GDP deterioration for the euro area).

But responses differ across countries …

Taking into account that some Member States have been particularly hard hit by the crisis and some had difficult initial macroeconomic starting positions, fiscal policy needs and possibilities differ across the EU. Even though the overall level of interest rates has fallen substantially to before crisis levels, the significantly higher risk premiums that financial markets are requesting on sovereign bonds for some Member States can be very costly and counteract fiscal stimulus policies, in particular if risk premia spread to the wider economy. Thus, Member States need to carefully manage their fiscal space in light of sustainability concerns. The Commission services latest assessment of long-term sustainability, using the conventional indicators and classification (albeit not accounting for the impact of the crisis on potential growth) has already evidenced a strong increase in sustainability risks, independently of the potential materialisation of contingent liabilities linked to the banking sector.

… accounting for differences in fiscal space.

Public debt ratios are quickly shooting up …

Across EU Member States, the financial and economic crisis is sharply ratcheting up public debt-to-ratios, not only as a consequence of fiscal support to ailing economies but also due to direct public interventions in banking systems. The public debt-to-GDP ratio in the EU which just surpassed the 60% mark in 2008 (from 58.7% in 2007) is expected to jump by 21 percentage points to 79.4% of GDP until 2010. For the euro area the increase is projected to be somewhat smaller at about 18 percentage points between 2007 and 2010. So far, about 3⅓ percentage points of the increase in the public debt-to-GDP ratio until 2010 in the EU (5 percentage points in the euro area) is attributed to stock-flow adjustments, which in turn reflect predominantly the acquisition of financial assets and are recorded "below-the-line" (i.e., affecting public debt but not the deficit). However, accurately accounting in fiscal statistics for these and other operations in support of the financial sector is not unproblematic as representative market prices may not be available during a financial crisis and a measure of fair value may only be inferred indirectly. Eurostat is in the process of drawing up guidance on the statistical treatment of public operations to support the financial sector. So far, Member States have supported their banking sectors with measures amounting to about 13% of GDP and have approved funds worth another 31% of GDP. The largest share (7.8% of GDP in terms of measures taken; 24.7% of GDP in terms of measures approved) are guarantees on bank liabilities, which do not affect public debt and deficits unless they are called upon. The rest pertains to relief of impaired assets, liquidity support and capital injections. To what extent these operations risk eventually adding to

… including from public interventions in the financial systems.

the fiscal bill is still uncertain, but some lessons can be drawn from past financial crises.

Experiences with past crises yields some lessons on potential fiscal costs for resolving the current crisis

In past crises public intervention was expensive ...

Past financial crises have generally been very costly. When analysing a subset of 49 crisis episodes from the 122 systemic financial crises that occurred since 1970 around the world, one finds that net direct fiscal outlays to rehabilitate the banking system averaged 13% of GDP but were much higher, over 50% of GDP, in some emerging market economies. These figures already account for the values recovered (until six years after the crisis broke out) from assets acquired by the public sector. Recovery rates were rather low at only 20% on average with few notable exceptions, such as Sweden.

... leading to high and difficult to reverse debt levels.

Increases in public debt ratios, the most comprehensive measure to capture fiscal implications from financial crises, went far beyond the direct costs attributable to tackling the financial sector problems and amounted to, on average, 20% of GDP during the crisis, which lasted on average 4½ years. That these increases were linked to the crisis is corroborated by the Commission services' econometric evidence. Most of the ratcheting up of debt ratios occurred in the first two crisis years and was rooted in the expenditure side, including crisis-related budgetary outlays ensuing from the operation of automatic stabilisers and substantially higher interest payments for some emerging market economies. These reflect the sizeable economic slowdowns as output gaps are estimated to have widened by on average by 1% per annum during past financial crises. To some extent, increased discretionary fiscal stimulus to counter the economic downturns also added to the overall budgetary deterioration of on average 2% of GDP during the full length of the crisis. However, country case studies indicate that active fiscal stimulus was not as widespread as one might expect, since countries' fiscal space was frequently constrained due to rapidly weakening market confidence in the public sector. In the few cases of relatively large expansionary fiscal activism, such as Sweden and Japan, there are many indications that the success of policies put in place in the wake of a financial crisis was rather limited. Overall, the process of rising debt ratios has proved difficult to reverse. Even a decade after the start of the crisis, most governments ran public debt-to-GDP ratios above pre-crisis levels.

Large fiscal stimulus was less common.

Some measures have limited the taxpayers' bill of crisis intervention.

Experience shows that some factors have contributed to containing the level of direct fiscal costs, i.e. outlays from rescuing and rehabilitating the financial sector. Lower direct fiscal costs and higher recovery rates were achieved notably, taking into account of the severity of the crisis, when the bank resolution strategy was implemented swiftly, was transparent and received broad political support, backed by strong public institutions and legal frameworks, consistent in terms of fair and uniform treatment of market participants, and included a clear exit strategy. Within this broad framework, econometric results show that some individual measures have been associated with higher recovery rates. This includes recapitalisation and liquidity support, presumably reflecting that they were extended to viable institutions that recovered after the crisis. Moreover, the econometric analysis shows that the use of asset management companies was linked to

significantly higher recovery rates only when the government effectiveness, i.e. the quality of public administration as well as the legal and judicial system, was strong. The size and complexity of the asset portfolio also seems to have impacted the effectiveness of asset management companies. Thus, experience suggests that they can be a useful tool in managing non-performing assets, when certain conditions are in place, but are not a panacea.

Today's globalised crisis risks to be at least as expensive as past crises …

What do these experiences imply for the direct fiscal costs of today's crisis? The global nature of the current crisis adds to the factors of fiscal risks and reduces the policy options. This includes first the much larger sizes of banking systems in the EU today than in past crises and consequently the larger size of impaired assets and recapitalisation needs. Second, recovery values of today's impaired assets may be much lower than of those in the past due to several factors. The complicated nature and high leverage of many financial assets makes them more difficult to manage, unwind and recover than in the case of past crises, when assets included predominantly real estate and other loans. Moreover, a protracted slowdown of the economy, given the global nature of the crisis, compared to many V-shaped output developments in earlier crises supported by sharp real depreciations of the currencies and export-led growth, is likely to depress recovery values including through lesser availability of foreign and, more generally, private investors. And finally, delays in the implementation of a comprehensive strategy for the resolution of the banking system across the EU and the use of regulatory forbearance may add to the fiscal bill. Against this background today's crisis includes only few aspects that allow a more optimistic view on containing fiscal implications. This regards foremost the generally stronger legal and judicial systems and the greater transparency and more uniform applications of national bank resolution policies than in the past, even though in the EU significant differences in institutional strengths remain. These factors could positively impact recovery rates and help contain fiscal costs.

Thus, on balance there are considerable risks that rehabilitating the EU's banking system would require substantial public outlays. Of the total public resources approved for the support of the EU banking system (about 44% of GDP so far) most are guarantees that may not be called upon. In a benign scenario much of those outlays may either be recovered or not even materialise. However, in a more adverse scenario net direct fiscal costs could add up to about 16½% of GDP. This broadly matches the average bank rescue costs from past systemic crises. This cost estimate is derived by assuming that capital injections would be doubled from the currently approved amount of 2.6% of GDP, which appears rather small in comparison to recent estimates of impaired assets in Europe. Moreover, the scenario calculation uses the already approved amounts for other public bank interventions (including guarantees) and applies to this the lower end of a range of recovery rates in line with past crises.

… particularly, if bank resolution efforts are not stepped up.

Some lessons can also be drawn for the effectiveness of fiscal support of the economy whose likelihood for the success is intertwined with that of bank resolution policies. Experience suggests that without a resolute clean-up of bank balance sheets, the impact of fiscal policy can be muted as long as uncertainty and constraints to providing loans and stimulate private demand prevail. Thus, in the EU any lagging behind of bank resolution policies risks to add to the fiscal bill. Going forward, efforts to restoring the health of the

financial sector need to be stepped up, even when it implies high upfront fiscal outlays, so as to ensure the full effectiveness of fiscal measures in support of an economic recovery.

Budgetary surveillance to anchor exit strategies and long-term adjustment

In stormy times, the SGP provides a compass.

The expected sharp budgetary deteriorations and increases in public expenditure-to-GDP ratios, in addition to pressures on many Member States' public finances from rising age-related spending, will eventually require tough choices with a view to maintaining long-term sustainability. While the EU's fiscal framework provides the appropriate anchor for future adjustments, some areas of improvement have emerged.

EDPs have been opened for many Member States …

The Stability and Growth Pact contains the sufficient flexibility to cope with the unprecedented challenges of the crisis while at the same time providing a framework for future consolidation strategies. In particular, while the opening of the excessive deficit procedure (EDP) when breaching the 3% of GDP deficit threshold is in all but exceptional cases a requirement, the deadline for the correction of the excessive deficits takes into account the relevant factors in the economy. In particular, in the existing and newly opened excessive deficit procedures, the pace of adjustment recommended to Member States takes explicitly into account their different room for fiscal manoeuvre. Since the Public Finance Report 2008 release, a new recommendation has been issued for the United Kingdom, which was already in excessive deficit procedure. For Hungary, the deadlines for the deficit correction were maintained while they were extended until 2013 for the United Kingdom to account for the sharp deterioration of public finances due to the crisis. Moreover, following deficits in excess of 3% of GDP in 2008, new excessive deficit procedures were opened for France, Greece, Ireland and Spain in the first half of 2009. Deadlines for the correction of the excessive deficits range from 2010 to 2013. Given the rapid and strong worsening of public finances in 2009 also for a number of other Member States, including notably Latvia, Malta, Poland and Romania, the opening of further EDPs is expected in the course of this year.

… allowing flexibility and providing orientation for exit strategies.

While the immediate focus for countries with sufficient fiscal space is still on supporting the economy, credible exit strategies are a precondition for the effectiveness of this support. The absence of a roadmap for the future course of policies may exacerbate uncertainty and risk-aversion, and thereby make the crisis more persistent. A majority of Member States envisaged, under their Stability and Convergence Programmes, already some structural improvements of their budget positions in 2010 and a further withdrawal of fiscal stimulus from 2011 on. However, the SCP consolidation plans appear to have been built on rather optimistic economic assumptions risking anew driving a gap between plans and outcomes as already witnessed under more favourable circumstances.

Strong national fiscal governance reinforces the EU framework.

In addition to the European fiscal framework, national fiscal frameworks can provide credible and transparent commitments for fiscal adjustment paths. The past has taught useful lessons in that respect. Strong fiscal frameworks have been success factors for consolidation, including after the financial crises in Finland and Sweden in particular. National fiscal rules and medium-

term budgetary frameworks can provide credibility, transparency and medium-term orientation to fiscal policy making in times when difficult choices need to be made. Moreover, fiscal institutions can play useful roles in monitoring and advising on fiscal plans as well as providing underlying macroeconomic assumptions for the annual budget preparation. Thus, exit strategies for EU Member States could benefit strongly from commitments to improving and/or adhering to existing fiscal rules and medium-term frameworks. Examples of countries where fiscal framework offer substantial room for improvement are Hungary, Latvia and Romania, which have received balance of payments assistance from the EU, and who are seeking to strengthen their fiscal governance frameworks, with the support of the European Commission and the IMF, as part of their adjustment processes. Going forward, Member States have confirmed the importance of fiscal governance frameworks and committed to step up their efforts to report on them as a contribution to improve budgetary surveillance and for exit strategies.

Some progress has been achieved.

Generally, a review of fiscal governance frameworks across EU Member States by the Commission services confirms their rising importance but also identifies remaining shortfalls. In recent years, in particular some new Member States have introduced fiscal rules and other Member States plan further revisions and strengthening of their rules in particular in light of the crisis experience. Overall, current weaknesses of fiscal rules relate mostly to their enforcement and monitoring mechanisms as well as media visibility, which could serve as an informal enforcement device. Moreover, revenue rules, which pre-define how excess revenues should be used, are not yet wide-spread. Their use might have helped particularly in pre-crisis "good" times to keep the spending of revenue windfalls in check and improve fiscal positions.

Better quality of public finances can be another pillar for exit strategies.

Strong fiscal governance is one avenue to better quality of public finances (QPF) which has gained new urgency as Member States' public finances have come under unprecedented stress. This also includes more effectively collecting and using scarce public resources with a view not only to creating additional fiscal space but also to backing the long-term economic growth potential of the economy and ensuring sustainability. For example, a number of Member States' initiatives under the EERP, including higher and "greener" investment, go in this direction while also regional policies provide a tool for more effectively targeting resources for investment. Thus, since raising the quality of public finances will be an important contribution to consolidation and exit strategies the Commission services have made progress in identifying and developing indicators that would contribute to more systematically analyse and compare the status and development of QPF in Member States. This includes also the provision by Eurostat on first and second-level government expenditure data (COFOG), at least partially, for all Member States.

Going forward budgetary surveillance should be strengthened.

Despite the usefulness of the anchor that the EU budgetary surveillance framework has provided, the current crisis has also exposed some weaknesses. These include the following areas for which improvements need to be made. First, some Member States have not sufficiently used the "good" pre-crisis times to improve the state of their public finances which would have let them enter the crisis from much more comfortable starting positions.

In particular, revenue windfalls during asset price boom periods are often misread as durable improvements in the underlying budget position. Creating a sufficient safety margin to accommodate debt increases during bust phases, can avoid amplification of booms, and assure greater resilience during downswings. Countries with limited fiscal space – i.e., a high public debt, a high share of non-discretionary expenses and potential large tax revenue shortfalls together with competitiveness challenges threatening medium-term growth perspectives – need to engage in particularly cautious fiscal policies in booms to avoid adverse financial market reactions and constraints on the fiscal stabilisation tool during busts, leading to deep recessions.

Second, past budgetary surveillance has not been sufficiently holistic in accounting for the role of fiscal policy in allowing the build-up of internal and external imbalances. Broader surveillance based on a wider set of indicators could provide a useful signalling device for the capacity of countries to meet their financial obligations. A broad definition of fiscal space, covering a wider set of variables would facilitate early indication of risks of budgetary stress and, by the same token, of the ability to conduct counter-cyclical fiscal policies when favourable conditions revert sharply. Such monitoring also needs to be consistent with a deeper analysis of underlying fiscal positions during booms, when revenues may be swollen by temporary factors not captured in cyclical adjustment calculations. In addition to the usual indicators of government debt and deficit, particular attention could be given to external and domestic imbalances, including contingent liabilities related to private sector credit, foreign currency liabilities and current account developments. A regular competitiveness surveillance exercise within the euro area which was already initiated by the Eurogroup on the basis of a first Commission report and follows up on findings in the Commission's EMU@10 Report would also be useful in this respect.

And third, in the past most deviations from Member States' fiscal plans, as laid out in their SCPs, were rooted in expenditure overruns. Thus, budgetary surveillance should devote more attention to developments of the expenditure side, while Member States could tackle this issue with stronger fiscal frameworks.

Part I

Current developments and prospects

SUMMARY

The EU economy is in the midst of its deepest and most widespread recession in the post-war era. Playing a central role in overcoming the financial and economic crisis, public finances in the EU have come under unprecedented stress. As the effectiveness of monetary policy has been stunted in the financial crisis, public finances in the EU are shouldering a particular heavy burden by responding to the crisis with three objectives: (i) addressing demand shortfalls by letting automatic stabilisers play and through fiscal stimulus measures, (ii) restoring the health of the financial sector and supporting the intermediation function of financial markets and (iii) contributing to the long-term growth prospects.

With its European Economic Recovery Programme (EERP) the EU has defined an effective framework for combating the economic downturn. The programme, endorsed by the European Council in December 2008, calls for discretionary fiscal support of at least 1.5% of GDP. Model simulations indicate that a coordinated policy response, such as the EERP, has a considerably larger impact on output and is thus eventually less costly, since leakages are contained, than those undertaken by a single country. Overall, Member States have adopted or announced fiscal stimulus measures totalling 1.1% of GDP in 2009 and 0.7% of GDP in 2010. Of the total, 1% of GDP is on the revenue and 0.8% of GDP on the expenditure side. The fiscal support packages adopted under the EERP have broadly followed the well-known "three T principles" for effective fiscal stimulus (timely, temporary and targeted), in addition to the need for a coordinated approach taking into account cross-country differences in fiscal space. The stimulus measures are estimated to contribute to about ¾% of real GDP growth in 2009 and about ⅓% in 2010.

In addition to discretionary measures, an even larger support to the EU's economy is coming from the operation of automatic stabilisers, which is amplified by the reversal of previous revenue buoyancy. As a consequence, the average budget deficit in the EU already worsened in 2008 to 2.3% of GDP (from 0.8% in 2007) (the euro area budget deficit was 1.9% of GDP in 2008 compared to 0.6% in 2007) and is expected to widen further by 5.0% of GDP until 2010 (4.6% of GDP deterioration for the euro area).

Rising deficits, low growth and subdued inflation, as well as implemented support to the financial sector, feed through in debt developments. From its low (58.7%) in 2007, the public debt-to-GDP ratio in the EU surpassed the 60% mark in 2008 and is expected to jump by 21 percentage points to 79.4% of GDP until 2010. For the euro area the increase is projected to be somewhat smaller at about 18 percentage points between 2007 and 2010. The high deficit levels, which are to a significant extent structural considering the nature of the economic and financial shocks, suggest further rising debt ratios in the years beyond 2010.

Coupled with the perspective increases in age-related expenditure, a slow-down in potential growth and possible calls on government guarantees extended in the context of financial rescue packages, failure to achieve a timely return to sound budgetary positions might have a destabilising effect on public finances in several countries. Looking forward, a desirable fiscal stance needs to weigh appropriately stabilisation and sustainability considerations. While the immediate focus for countries with fiscal space is still on supporting the economy, credible exit strategies are a precondition for the effectiveness of this support. The absence of a roadmap for the future course of policies, can exacerbate uncertainty and risk-aversion, and thereby make the crisis more persistent. A majority of Member States envisaged, under their Stability and Convergence Programmes, already some structural improvements of their budget positions in 2010 and a further withdrawal of fiscal stimulus from 2011. However, the SCP consolidation plans appear to have been built on rather optimistic economic assumptions risking anew driving a gap between plans and outcomes as already witnessed in calmer economic times in the past.

Since the Public Finance Report was last issued in 2008, a new recommendation was issued for the United Kingdom, which, like Hungary, was already in excessive deficit procedure. The deadlines for the deficit correction were extended until 2013 for the United Kingdom to account for the sharp deterioration of public finances due to the crisis. Moreover, following deficits in excess of 3% of GDP in 2008, new excessive deficit procedures were opened for France, Greece, Ireland and Spain in the first half of 2009. Deadlines for the correction of the excessive

deficits range from 2010 to 2013. Given that virtually all Member States (ex. Bulgaria, Cyprus, Denmark, Luxemburg, Finland and Sweden) are projected to have deficits in excess of 3% of GDP by 2009, the opening of further EDPs is to be expected. In the existing and newly opened excessive deficit procedures, the pace of adjustment recommended to Member States considers their different room for fiscal manoeuvre.

The EU's fiscal framework provides the anchor for future adjustments. The Excessive Deficit Procedure (EDP) of the Stability and Growth Pact (SGP) is flexible enough to allow corrective action to be implemented in time frames consistent with the recovery of the economy, with rapid fiscal consolidation being called for only in cases of immediate sustainability risk e.g. as reflected in high sovereign risk premia. The 2005 reform has introduced the possibility of revising the recommendations for the correction of the excessive deficit including an extension of the deadline in case of adverse economic developments with major unfavourable consequences for public finances. This possibility is meant to cater for budgetary outcomes falling short of targets on account of the deterioration of the underlying economic scenario. The reasons for the deviation and the overall economic and budgetary situation should be carefully considered when deciding on the revised recommendations.

1. FINANCIAL AND ECONOMIC CRISIS HITS BUDGETARY DEVELOPMENTS AND PROSPECTS

1.1. TIMES OF CRISIS

The economic situation and outlook remains uncertain as the world faces its worst crisis since the Second World War. The initial shocks stemming from the financial market developments have been followed and amplified by the negative feedback-loops between the real economy and the financial markets. In addition, the legacy of accumulated imbalances in the world economy may lead to a painful adjustment process, thus further extending the period of weakness in economic activity. The Commission services' spring 2009 forecast projects real GDP growth for both the EU and the euro area at -4.0 % in 2009.

The downswing is broad-based across countries, although sizeable differences exist. Some EU Member States will be subject to a more pronounced and/or protracted downturn, depending on their exposure to the financial crisis and the global manufacturing cycle, domestic and external imbalances, including a substantial housing-market correction or other country-specific factors. Part IV of this volume discusses these country differences and their implications for fiscal space and fiscal policy. In the large Member States, GDP is expected to fall by between -1.4% and -5.4% this year, with the downswing being particularly marked in Germany and the United Kingdom, and more protracted in Spain. In some smaller EU economies the output loss could be in excess of 10% of GDP.

GDP would shrink for seven consecutive quarters, from late 2008 to mid-2010, and would only very gradually recover thereafter. While the EU economy is expected to return to positive growth rates on a quarterly basis from the third quarter of 2010, GDP growth is expected to be slightly negative for the year 2010 as a whole (at -0.1%). The outlook remains exceptionally uncertain, but upside and downside risks are broadly balanced.

The economic downturn is increasingly visible in the labour market. From the low of 6.7% in early 2008, the EU unemployment rate has increased rapidly. In March 2009 it already stood at 8.3%. Reacting with some lags to GDP growth, unemployment is likely to rise notably during this and next year, reaching an annual average of more than 10% in the EU by 2010. Reversing this trend will be a major policy challenge for the EU economy, as the worsened outlook also impacts public finances.

1.2. FISCAL STIMULUS AND LARGE AUTOMATIC STABILISERS SUPPORT ECONOMIC ACTIVITY IN THE EU

As the financial and economic crisis began to intensify after the summer of 2008, the European Commission published a Communication in November 2008, outlining a European Economic Recovery Plan (EERP; Boxes I.1.1 and I.1.2) to combat the economic downturn. This plan was later affirmed by the European Council. Given the extent of the crisis, the plan called for an immediate and co-ordinated effort to boost demand, suggesting a fiscal policy response equivalent to 1.5% of EU GDP. This figure includes actions at the EU as well as the Member State level. The fiscal stimulus comes on top of the important role that automatic stabilisers play in the EU and public support to the financial sector. Over 2009-2010, the additional support to economic activity as measured by the change in the budget balance is estimated to amount to 5.0% of GDP. This section provides an overview and analysis of the budgetary support to the EU economy. ([1])

([1]) In addition to support of the economy there have been massive public interventions in financial systems. Overall, governments have approved support totalling 35% of GDP, most of which are guarantees. How these are treated in fiscal statistics is reported in Part II.1. More details on the rescue measures and their fiscal implications are provided in Part III.

Table I.1.1: **Fiscal stimulus measures in 2009 and 2010 by Member State (in % GDP)**

	2009										2010*
	Total	Of which in autumn forecast	Of which in budget 2009	Expenditure	Revenue	Measures aimed at households	Increased spending on labour market measures	Measures aimed at businesses	Increased public investment	Of which public infrastructure	Total
AT	1.8	0.2	1.6	0.4	1.4	1.1	0.2	0.3	0.2	0.1	1.8
BE	0.4	0.0	0.0	0.2	0.2	0.1	0.1	0.0	0.2	0.1	0.4
BG**	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CY	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CZ	1.0	0.0	0.9	0.5	0.5	0.0	0.5	0.1	0.4	0.4	0.5
DE	1.4	0.3	1.4	0.6	0.8	0.9	0.1	0.0	0.4	0.0	1.9
DK**	0.4	0.0	0.0	0.3	0.1	0.0	0.0	0.1	0.3	0.2	0.8
EE	0.2	0.0	0.1	0.2	0.0	0.0	0.2	0.0	0.0	0.0	0.3
EL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ES	2.3	1.2	1.2	1.0	1.3	0.3	0.0	1.1	0.9	0.0	0.6
FI	1.7	0.9	0.9	0.6	1.1	0.9	0.2	0.2	0.3	0.0	1.7
FR	1.0	0.0	0.0	0.7	0.3	0.2	0.1	0.4	0.3	0.1	0.1
HU**	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
IE	0.5	0.5	0.5	0.3	0.2	0.5	0.0	0.0	0.0	0.0	0.5
IT**	0.0	0.0	0.0	0.2	-0.2	0.2	0.0	-0.2	0.0	0.0	0.0
LT**	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LV**	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LU	1.2	1.2	1.2	0.1	1.2	1.2	0.0	0.0	0.0	0.0	1.4
MT	1.6	0.0	1.6	1.3	0.3	0.3	0.0	0.1	1.3	0.7	1.6
NL	0.9	0.3	0.3	0.4	0.5	0.3	0.1	0.1	0.4	0.2	1.0
PL	1.0	0.8	1.0	0.3	0.7	0.6	0.0	0.1	0.3	0.3	1.5
PT	0.9	0.1	0.1	0.9	0.0	0.1	0.2	0.3	0.4	0.3	0.1
RO	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SE	1.4	1.0	1.0	0.6	0.8	0.6	0.5	0.0	0.3	0.2	1.6
SI	0.6	0.0	0.0	0.5	0.1	0.0	0.1	0.3	0.2	0.0	0.5
SK	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0
UK***	1.4	0.1	1.4	0.4	1.0	1.2	0.0	0.0	0.2	0.0	0.0
EU-27	1.1	0.3	0.7	0.5	0.6	0.5	0.1	0.2	0.3	0.1	0.7
EA-16	1.1	0.3	0.6	0.5	0.5	0.4	0.1	0.2	0.3	0.1	0.8

* Figures for 2010 represent changes with respect to 2008, i.e. include permanent measures taking effect in 2009 plus the net effect of measures taking effect in 2010.
**Measures in Bulgaria are conditional on the improvement in macro-economic imbalances. Overall, a neutral fiscal stance is assumed. Denmark recently decided to postpone the reintroduction of a mandatory "special pension contribution" by one year. Since the pension scheme is outside the general government sector but the contribution is tax-deductible this postponement will improve the general government balance. Hungary, Italy, Lithuania and Latvia have adopted fiscal packages in response to the downturn, but their net impact is either neutral or deficit-reducing.
*** The measures announced by the UK are affecting the financial years 2008/09 and 2009/10. These measures have been reattributed, to the extent possible, in accordance with their impact on the calendar years 2009 and 2010.The latest UK measures, announced in April 2009, are not included in the calculation.
Source: Commission services.

Since autumn 2008, governments of a vast majority of Member States have taken action in line with the EERP (Table I.1.1). Overall, Member States have adopted or announced fiscal stimulus measures in response to the economic downturn amounting to a total of 1.1% of EU GDP for 2009 and 0.7% of EU GDP for 2010. The scale of the measures varies strongly from one Member State to another. In 2009 the largest fiscal stimulus in the euro area is being run in Spain, and is of the order of 2.3% of GDP; other sizeable stimuli are undertaken by Austria (1.8% of GDP), Finland (1.7%), Malta (1.6% of GDP), Germany (1.4% of GDP) and Luxembourg (1.2% of GDP) . Outside the euro area the largest fiscal stimuli come notably from the UK (1.4% of GDP) and Sweden (1.4% of GDP). Since these are countries facing a sharp economic slowdown, their budgetary positions are deteriorating fast.

A similar picture of the distribution of fiscal stimuli across EU Member States is expected for 2010 (Table I.1.1). Only few Member States, including notably Spain, will already next year start to reverse their earlier stimulus measures.

However, given the limited room for fiscal manoeuvre in some Member States, they effectively contribute hardly or not at all to the EERP. Within the euro area Cyprus, Greece, Italy

and Slovakia belong to this group. Outside the euro area they include Bulgaria, Estonia, Hungary, Lithuania, Latvia and Romania. ([2]) In fact, given strong market pressures, in light of great stress on public finances as well as, in part, large external and internal imbalances, several new Member States have requested balance-of-payments support (see for details Box I.1.3).

The EERP comprises broadly equally in size revenue and expenditure measures (Box I.1.2). They pursue different aims: support to household's purchasing power, increased spending on labour market policies, reduction of taxes, social security contributions and other measures directly aimed at business, increased public investment.

The fiscal support packages adopted under the EERP have broadly followed desirable general principles but some risks on their effectiveness remain. The set of principles includes the well-known "three Ts" timely, temporary and targeted in addition to the need for a coordinated approach taking into account cross-country differences in fiscal space. As to the *timeliness* of the stimulus, reductions in social security contributions and support measures in favour of lower income brackets and families appear promising and the same applies to the frontloading of payments such as VAT to enterprises. Conversely various tax cuts are likely to take much longer to have any impact, and so do additional infrastructure projects. The stimulus packages are generally *well-targeted* towards the sources of the economic challenge, giving support to credit-constrained households and enterprises, supporting employment and directly increasing demand. A large part of the measures in support of households is targeted at low-income earners, who are expected to be especially hard hit by the slowdown. The increased public infrastructure investment is mainly targeted at the ailing construction sector. By contrast, reductions in various taxes often do not discriminate between the particularly vulnerable groups and others. As to the *temporariness* of the stimulus, the measures in support of labour markets, the stepping-up of public infrastructure investment and a large part of the measures aimed at enterprises are of a temporary nature, with their negative impact on government finances being reversible. On the other hand, a large part of the revenue related measures, particularly tax cuts and reductions in social security contributions, may prove difficult to reverse and hence have a more permanent character (possible exceptions are VAT cuts which are explicitly designed as temporary measures).

The effectiveness of the measures implemented in the context of the EERP is being confirmed by simulations with the Commission's QUEST III model (Box I.1.2). Here the overall impact of a fiscal stimulus of 1% of GDP in 2009 and 0.5% of GDP in 2010 is estimated to provide a real GDP growth stimulus of about ¾ percentage points in 2009 and ⅓ percentage points in 2010.

In total, i.e. also accounting for the effect of automatic stabilisers, fiscal policy is providing support to the economy in the region of 5.0% of GDP over the period 2009 and 2010, equivalent to more than € 600 billion. ([3]) The largest share of this overall support comes from the operation of automatic stabilisers which are particularly strong in the EU. The estimated impact of the automatic stabilisers is around 3.2% of GDP over 2009-2010. In contrast to the budgetary impact of new expansionary measures, automatic stabilisers do not provide a short-term boost to the economy, but rather produce a stabilising effect on the economy over the cycle without requiring discretionary interventions by fiscal authorities. The two elements most frequently stressed to exert this effect are progressive tax systems and unemployment benefits. ([4]) However, the bulk of automatic stabilisation originates not from those two factors but rather from the size of government. In particular, it is the inertia in adjusting the level of non-cyclical expenditure – the majority of public spending – that produces the largest stabilising effect. In other words, the

([2]) In fact, some of these countries, both within and outside the euro area, have designed fiscal stimulus packages. However, as these are being offset by other planned measures, the net effect on budget balances is either neutral or deficit-reducing.

([3]) This 5.0% of GDP estimate does not include guarantee schemes, which do not require upfront funding, but which nevertheless could result in significant budgetary outlays in case of default on the guaranteed liabilities.

([4]) Tax revenues increase more than proportionally when GDP rises and similarly expenditure for unemployment benefits drop in economic good times, which improves the fiscal position and produces a countercyclical effect.

Box I.1.1: **The European Economic Recovery Plan**

In response to the current economic crisis, the European Economic Recovery Plan (EERP) was officially launched with the Commission Communication of 26 November 2008, which was later affirmed by the European Council of 11 and 12 December 2008. ([1]) Against the background of the scale of the crisis, and given that most economic policy levers, and especially those which can affect consumer demand in the short term, are in the hands of the Member States, such a co-ordinated approach is needed. The fact that Member States have very different starting positions, in terms of fiscal room for manoeuvre in particular, makes effective coordination all the more important.

Apart from delivering a short-term economic stimulus, the strategic aims of the EERP also are: to help Europe to prepare to take advantage when growth returns; speed up the shift towards a low carbon economy; lessen the human cost of the economic downturn and its impact on the most vulnerable. Indeed the Recovery Plan is supposed to be implemented against the backdrop of the fundamental principles of solidarity and social justice. It has two key pillars, and in addition also covers monetary and credit aspects, and external action (the latter in order to work towards global solutions to global economic challenges).

The first pillar is a major injection of purchasing power into the economy, to boost demand and stimulate confidence. On a proposal from the Commission Member States and the EU have agreed on an immediate fiscal impulse amounting to at least € 200 billion (1.5% of GDP), in order to boost demand. This consists of a budgetary expansion by Member States of € 170 bn (around 1.2% of the EU's GDP), and EU funding in support of immediate actions of the order of € 30 bn (around 0.3% of EU GDP), and occurs in full respect of the Stability and Growth Pact.

Apart from being accompanied by structural reform measures in the context of the Lisbon strategy (see next paragraph below), the fiscal stimulus should be based on several principles. First, it should be timely, temporary, targeted, and co-ordinated. Second, it can combine a mix of revenue and expenditure instruments, such as public expenditure; guarantees and loan subsidies to compensate for the unusually high current risk premia; well-designed financial incentives; lower taxes and social contributions. Last but not least, it is conducted within the Stability and Growth Pact. Extraordinary circumstances combining a financial crisis and a recession justify a co-ordinated budgetary expansion in the EU. This may lead some Member States to breach the 3% of GDP deficit reference value. However, for Member States considered to be in an excessive deficit, corrective action will have to be taken in timeframes consistent with the recovery of the economy. The Stability and Growth Pact is therefore applied judiciously ensuring credible medium-term fiscal policy strategies. Member States putting in place counter-cyclical measures have normally submitted an updated Stability or Convergence Programme by the end of December 2008. This update spelled out the measures that will be put in place to reverse the fiscal deterioration and ensure long-term sustainability. The Commission then has assessed the budgetary impulse measures and Stability and Convergence Programmes based on updated forecasts and has provided guidance on the appropriate stance. In this context the following criteria have been relied upon: ensuring the reversibility of measures increasing deficits in the short term; improving budgetary policy-making in the medium term through a strengthening of the national budgetary rules and frameworks; ensuring long-term sustainability of public finances, in particular through reforms curbing the rise in age-related expenditure.

The second pillar is grounded in the Lisbon strategy and rests on the need to direct short-term action towards implementing structural reforms aimed at raising potential growth, promoting resilience, and reinforcing Europe's competitiveness in the long term. Indeed at the operational level there should be a close connection between the fiscal stimulus and action in the four priority areas of the Lisbon Strategy (people; business; infrastructure and energy; research and innovation). In order to achieve this, the EERP sets out a comprehensive programme to direct action to 'smart' investment, which means investing in the right skills

([1]) COM (2008) 800 final, 'A European Economic Recovery Plan'. The thrust of this Recovery Plan was confirmed in the Commission Communication 'Driving European Recovery' of 4 March 2009. See COM (2009) 0114 final.

(Continued on the next page)

Box (continued)

for tomorrow's needs, in energy efficiency and clean technologies, and in infrastructure and inter-connection to promote efficiency and innovation. Some of these actions are designed to frontload EU funding directly to contribute to the fiscal stimulus and assist Member States with the implementation of their policies, while others are intended to improve the framework conditions for future investments, reduce administrative burdens and speed up innovation. Specifically, ten actions are included in the Recovery Plan: to (1) launch a major European employment support initiative; (2) create demand for labour; (3) enhance access to financing for business; (4) reduce administrative burdens and promote entrepreneurship; (5) step up investments to modernise Europe's infrastructure; (6) improve energy efficiency in buildings; (7) promote the rapid take-up of green products; (8) increase investment in R&D, innovation and education; (9) develop clean technologies for cars and construction; (10) provide access to high-speed internet for

Box I.1.2: Fiscal policy measures

The European Economic Recovery Plan (EERP; Box I.1.1) also provided broad guidelines on the types of measures which, if adopted in a coordinated way, are likely to result in cross-country synergies and positive spill-over effects. ([1]) Within the framework of a common approach country-specific measures to support demand should aim at producing immediate results, be of limited duration, and target the most important and most affected sectors of the economy. A distinction can be made, on the one hand, between expenditure and revenue related measures and, on the other, between the different aims of the measures.

The EERP encouraged choosing the instruments from a range of options depending on country-specific circumstances, thus including both revenue and expenditure instruments. Given that discretionary public spending is in general considered to have a stronger positive impact on demand in the short run than tax cuts, as consumers might prefer to save rather than consume, a higher share of expenditure-related measures often has been wished for. However, provided that tax cuts are (expected to be) limited in time, thereby avoiding neutralising anticipatory effects of larger tax liabilities in the future, and delivered directly and upfront, the effect on consumption could still be substantial. In addition, a number of operations that do not affect the general government balance have also been taken by Member States. The measures which can be considered pursue the following aims:

- Support to households' purchasing power. Reduction in taxes and social security contributions and direct aid aimed at households, such as income support for households, lowering taxes for households (including energy subsidies), supporting housing or property markets and decreasing VAT. In this category, the great majority of Member States have adopted measures.

- Increased spending on labour market policies, such as wage subsidies and intensifying active labour market policies. Only few Member States have adopted noteworthy measures in this area.

- Reduction of taxes, social security contributions, and other measures directly aimed at business, such as tax breaks, earlier payment of VAT returns, facilitating company financing, state aid and stepping up export promotion were adopted in almost half of all Member States.

- Increased public investment, such as public investment in infrastructure, supporting investment aimed at greening the economy, and/or improving energy efficiency were adopted in close to half of all Member States.

This menu of options can be assessed on the basis of the three criteria: timely, targeted, and temporary:

As to the *timeliness* of the stimulus, reductions in social security contributions, social measures in favour of lower income households and families with children can provide early support to household purchasing power. Regarding cuts in indirect taxes, however, necessary adaptations in retailers' pricing strategies are likely to entail a time lag before the effect feeds through. The timeliness with which income tax cuts impact on household purchasing power depends crucially on the administrative modalities. On the business side, while the frontloading of payments such as VAT to enterprises should have a rather immediate stimulus effect, other supporting measures may impact only gradually. Given the inevitable implementation lag of additional infrastructure projects, their direct stimulating effect will probably not materialise before the second half of the year. Lower social contributions paid by employers should have an immediate positive impact on job retention throughout the economy.

([1]) The box draws largely on European Commission (2009), 'A first horizontal assessment of National Recovery Programmes in response to the European Economic Recovery Plan', Note for the Economic and Financial Committee.

(Continued on the next page)

Box (continued)

The stimulus packages are generally *well-targeted* towards the sources of the economic challenge, giving support to credit-constrained households and enterprises, supporting employment and directly increasing demand through public investment. The increased public infrastructure investment is mainly targeted at the ailing construction sector. As for the measures in support of households, a large part is targeted at low-income earners who are expected to be especially hard hit by the slowdown. By contrast, reductions in direct and indirect taxes often do not discriminate between the particularly vulnerable groups and others. Capital injections and direct guarantees with the purpose of increasing lending to credit constrained private enterprises are often targeted at small and medium and export-oriented enterprises.

As to the *temporariness* of the stimulus, one has to distinguish between different types of actions. The measures in support of labour markets, the stepping-up of public infrastructure investment and a large part of the measures aimed at enterprises are of a temporary nature, with their negative impact on government finances being reversible. On the other hand, a large part of the revenue related measures, particularly tax cuts and reductions in social security contributions, appear to be of a permanent nature and may prove difficult to reverse. (Exceptions are VAT tax cuts explicitly designed as a temporary measure with a fixed reversal date.) Overall, given that revenue based measures represent the majority of the total, a significant part of the stimulus measures does not seem to be of a temporary nature.

Finally, regarding empirical evidence, the Commission services have performed simulations on the impact of discretionary fiscal policies on economic activity under conditions of a financial crisis by including credit constraints in the QUEST III model. ([1]) The main results of these simulations suggest that: (i) while the introduction of credit constraints raises the multiplier for transfer and tax shocks, government consumption or investment shocks continue to have a relatively higher impact on GDP; (ii) a permanent shock is much less effective in supporting economic activity than a temporary shock as the anticipation effects of larger tax liabilities weigh more negatively on current consumption and investment; (iii) the introduction of credit-constraints also raises the multiplier for permanent transfer and tax shocks, but its size remains much smaller than that for transitory shocks. Overall the large difference between the multipliers for temporary and permanent fiscal shocks underscores the importance that budgetary measures should be credibly contingent on the foreseen duration of the downturn: private agents need to believe the expansionary measures will be timely reversed and not become permanent. Non-reported results also show that cross-country spill-over effects of fiscal shocks are positive and effects of a joint fiscal stimulus are larger than when acting alone. The Table below displays the simulation results for the measures announced by the Member States in their fiscal stimulus packages grouped according to their broad area of impact. The overall result is that the stimulus measures (estimated at 1% of GDP in 2009 and 0.5% in 2010) will have a positive impact on GDP growth of around 0.8% in 2009 and about 0.3% in 2010 for the EU as a whole.

Graph 1: Model simulation of the impact of fiscal stimulus packages in the EU

Fiscal measures as % of GDP	2009	2010
Supporting household purchasing power	0.5	0.2
Labour market	0.1	0.0
Measures aimed at companies (excl. investment incentives)	0.2	0.1
Increasing/bringing forward investment	0.3	0.1
Total	1.0	0.5
GDP growth impact	**0.8**	**0.3**

Source: Commission services based on QUEST III model.

([1]) The results of the simulations reported are based on a DGSE model consisting of two regions: the European Union and the rest of the world (ROW). The results concern the EU economy and assume that both the EU and the ROW undertake simultaneously a 1% of GDP fiscal stimulus in 2009. The regions are differentiated from one another by their economic size and calibrated on bilateral trade flows. The EU is characterised in the model by relatively high transfers and unemployment benefits, high wage taxes, high price rigidities and labour adjustment costs, and a low elasticity of labour supply. Multipliers are generally smaller in the EU due to higher nominal and real rigidities and to benefit and transfer generosity. The model allows for housing investment and includes credit constrained households along the lines suggested by the recent literature on the financial accelerator mechanism. For more detail on the Commission services' QUEST model see Ratto et al. (2008).

Box I.1.3: **EU balance-of-payments assistance**

In the ongoing financial and economic crisis, some EU Member States outside the euro area have come under external financing stress and sought financial assistance. The Community can provide balance-of-payments support to non-euro area Member States through its medium-term financial assistance facility under Article 119 of the Treaty. The assistance ([1]) aims to overcome short-term liquidity constraints while, through policy conditionality, supporting the correction of underlying macroeconomic and financial imbalances. The funds for the loans under the Facility are raised by the Commission (on behalf of the Community) on financial markets, and are on-lent to the recipient country at the same conditions (i.e., the borrowing country benefits from the AAA credit rating of the Community).

While the facility is in principle a free-standing instrument, in practice the Community financial assistance is provided in the context of broader concerted financing packages, involving other stakeholders as appropriate (IMF, World Bank, other IFIs, bilaterals). This enhances the leverage and effectiveness of the financial support. Policy conditionality is enshrined in a Memorandum of Understanding agreed with the authorities. The Commission monitors compliance with conditionality and decides on the release of subsequent instalments, following consultation of the Economic and Financial Committee (EFC).

Policy conditionality in the context of the EU balance-of-payments assistance focuses on the key challenges that need to be tackled to restore a sustainable external position; in the ongoing programmes for Hungary, Latvia and Romania these have been fiscal policy, fiscal governance, financial stability (including rescue packages and strengthening of supervision and regulation) and structural reforms.

In order to be able to respond effectively in the current crisis environment, the ceiling for the EU balance-of-payments Facility was raised from €12 to €25 billion in late 2008 and further to €50 billion on 5 May 2009. A total €14.6 billion has been committed so far under the Facility, following the approval of loans to Hungary (€6.5 billion, Latvia (€3.1 billion) and Romania (€5 billion). The assistance is provided in five instalments for Hungary over one year, six instalments for Latvia and up to five instalments for Romania over two years, conditional on a comprehensive economic policy programme. Two tranches of €2 billion each have so far been released for Hungary and one tranche of €1 billion for Latvia. For Romania, the Memorandum of Understanding specifying the size and timing of each instalment has not been concluded with the authorities yet.

Table 1: Balance-of-payments assistance (as of 7 May 2009)

	Hungary	Latvia 1/	Romania
Total assistance package	€20 bn	€7.5 bn	€20 bn
EU (Art. 119)	€6.5 bn	€3.1 bn	€5 bn
IMF	€12.5 bn	€1.7 bn	€12.95 bn
Other multilaterals	€1 bn	€0.5 bn	€2 bn
Bilaterals	…	€2.2 bn/1	…

Notes: 1/ Contributions by Sweden, Denmark, Finland, Norway, the Czech Republic, Poland and Estonia.
Sources: European Commission and IMF.

([1]) The facility is governed by Council Regulation (EC) No 332/2002.

implementation of discretionary expenditure levels in line with plans leans against the current decline in aggregate output. Because of the significantly larger government sector in the EU (in 2008 the average expenditure-to-GDP ratio in the EU was 46.8%, compared to 39.1 % in the US), automatic stabilisers play a more important role than in the US.

Table I.1.2: **Euro area - The General government budget balance (% of GDP)**

	2005	2006	2007	2008	2009	2010
Total revenue (1)	44.8	45.3	45.5	44.8	44.7	44.4
Total expenditure (2)	47.3	46.6	46.1	46.6	50.1	51.0
Actual balance (3) = (1) - (2)	-2.5	-1.3	-0.6	-1.8	-5.4	-6.5
Interest (4)	2.9	2.9	2.9	3.0	3.0	3.2
Primary balance (5) = (3) + (4)	0.4	1.6	2.3	1.2	-2.4	-3.3
One-offs (6)	0.1	0.0	-0.1	-0.3	-1.3	-2.2
Cyclically adjusted balance (7)	-2.5	-1.9	-1.9	-2.9	-3.9	-4.7
Cyclically adj. prim. balance = (7) + (4)	0.4	0.9	1.1	0.1	-0.9	-1.5
Structural budget balance = (7) -(6)	-2.7	-2.0	-1.8	-2.6	-2.6	-2.6
Change in actual balance:	0.4	1.2	0.7	-1.2	-3.6	-1.1
- Cycle	0.0	0.1	0.1	0.3	0.9	0.8
- Interest	-0.1	-0.1	0.1	0.0	0.1	0.2
- Cyclically adjusted primary balance	0.2	0.7	0.2	-0.8	0.0	0.0
- One-offs	0.0	-0.1	-0.1	-0.2	-1.1	-0.9
- Structural budget balance	0.3	0.7	0.2	-1.0	-1.1	-0.8

Note: Differences between totals and sum of individual items are due to rounding.
Source: Commission services.

1.3. SHORT-TERM DEVELOPMENTS AND PROSPECTS FOR THE BUDGET BALANCE AND PUBLIC DEBT

In 2008, the budgetary positions in the euro area and the EU deteriorated for the first time in five years, recording a major setback in comparison to the previous year. The euro-area average headline deficit reached 1.9% of GDP, up from 0.6% of GDP in 2007 (Table I.1.3). Almost the same deterioration took place in the EU as a whole, where the average budget deficit declined by 1.2 percentage points reaching 2.3% of GDP in 2008 (Table I.1.4). In both the euro area and the EU the deterioration in the headline deficit was matched by an only slightly smaller deterioration of the structural budget balance, i.e. the budget balance net of cyclical factors and one-off and other temporary measures (1.0% of GDP in the euro area and 1.1% in the EU). Taken at face value this result would seem to suggest that only to a lesser extent the deterioration in the headline deficit was due to cyclical factors, and that primarily it was of a structural nature. However, the estimates of the structural budget balance are likely to be affected by the earlier exceptional buoyancy of tax revenues which has started to go into reverse along with the economic cycle. ([5])

In 2008, the deterioration in the (nominal) budget balance was particularly sizeable in Ireland (where a minor surplus was turned into a deficit of more than 7% of GDP) and in Spain (where a large surplus was turned into a deficit in excess of the reference value of the Treaty), and to a lesser extent also in Malta, Slovenia, Italy, and Greece. In the latter the headline deficit, already beyond the 3% threshold, continued to rise. In Cyprus the previously large surplus shrunk considerably.

As to France, here the deficit slightly deteriorated from 2.7% of GDP to 3.4%. Hence in all these Member States of the euro area the deficit in 2008 exceeded the reference value of the Treaty. In Germany effectively a balanced budget was maintained. The only country to report a notable improvement was the Netherlands who managed to increase their surplus to 1.0% of GDP. Apart from Cyprus and the Netherlands only Luxembourg and Finland posted surpluses in 2008, the latter still at a level of 4.2% of GDP.

An even stronger negative impact was felt outside the euro area in 2008, where relative to the previous year the budgetary position weakened in many Member States. Very large deteriorations of more than four percentage points were recorded in the Baltic States. In the Czech Republic the deficit remained approximately constant below the 3% threshold, while in Poland the deficit rose above it, and in Hungary it remained there. However, in Romania and in the United Kingdom the deficit deteriorated to 5.4 and 5.5% of GDP respectively and hence clearly exceeded the 3% of GDP reference value of the Treaty. As to the remaining Member States outside the euro area, Bulgaria,

([5]) Tax revenues were much higher than projected in the SCPs in 2005-2007.

Table I.1.3: **Budget balances of EU Member States (% of GDP)**

	Budget balance					Structural balance				Structural primary balance			
	2006	2007	2008	2009	2010	2007	2008	2009	2010	2007	2008	2009	2010
BE	0.3	-0.2	-1.2	-4.5	-6.1	-1.5	-2.2	-3.2	-4.0	2.3	1.5	0.7	0.0
DE	-1.5	-0.2	-0.1	-3.9	-5.9	-1.2	-1.2	-2.4	-3.9	1.6	1.6	0.6	-0.9
IE	3.0	0.2	-7.1	-12.0	-15.6	-1.8	-7.5	-9.8	-12.2	-0.9	-6.4	-7.6	-9.0
EL	-2.8	-3.6	-5.0	-5.1	-5.7	-4.5	-6.5	-5.7	-4.7	-0.4	-2.1	-1.0	0.1
ES	2.0	2.2	-3.8	-8.6	-9.8	1.6	-3.9	-6.8	-8.2	3.2	-2.4	-5.2	-6.3
FR	-2.3	-2.7	-3.4	-6.6	-7.0	-3.9	-4.3	-5.5	-5.5	-1.2	-1.5	-2.7	-2.5
IT	-3.3	-1.5	-2.7	-4.5	-4.8	-2.9	-3.4	-2.6	-2.8	2.1	1.8	2.0	2.0
LU	1.4	3.6	2.6	-1.5	-2.8	0.9	2.0	0.6	0.1	1.1	2.3	1.2	0.7
NL	0.6	0.3	1.0	-3.4	-6.1	-1.0	-0.5	-2.6	-4.3	1.2	1.7	0.0	-1.6
AT	-1.6	-0.5	-0.4	-4.2	-5.3	-1.8	-1.8	-3.2	-3.8	-1.5	-1.0	-1.2	-0.9
PT	-3.9	-2.6	-2.6	-6.5	-6.7	-3.3	-3.8	-5.5	-5.1	-0.5	-0.9	-2.5	-1.8
SI	-1.3	0.5	-0.9	-5.5	-6.5	-1.7	-2.5	-4.9	-5.2	-0.4	-1.3	-3.3	-3.4
FI	4.0	5.2	4.2	-0.8	-2.9	3.2	2.8	0.8	-0.7	4.6	4.2	2.1	0.7
MT	-2.6	-2.2	-4.7	-3.6	-3.2	-3.3	-4.9	-3.6	-2.8	0.0	-1.6	-0.2	0.7
CY	-1.2	3.4	0.9	-1.9	-2.6	2.7	0.1	-2.1	-2.1	5.8	2.9	0.2	0.1
SK	-3.5	-1.9	-2.2	-4.7	-5.4	-3.8	-4.7	-5.0	-4.7	-2.4	-3.5	-3.7	-3.3
EA-16	**-1.3**	**-0.6**	**-1.9**	**-5.3**	**-6.5**	**-1.8**	**-2.8**	**-3.9**	**-4.7**	**1.1**	**0.2**	**-0.9**	**-1.5**
BG	3.0	0.1	1.5	-0.5	-0.3	2.0	0.2	0.3	1.6	3.1	1.0	1.1	2.4
CZ	-2.6	-0.6	-1.5	-4.3	-4.9	-2.5	-3.4	-4.0	-3.7	-1.4	-2.3	-2.9	-2.5
DK	5.2	4.5	3.6	-1.5	-3.9	3.0	4.2	1.2	-0.4	4.5	5.6	2.9	1.2
EE	2.9	2.7	-3.0	-3.0	-3.9	-0.8	-4.1	-1.0	-1.9	-0.7	-3.9	-0.6	-1.4
LV	-0.5	-0.4	-4.0	-11.1	-13.6	-4.5	-5.8	-9.5	-11.5	-4.1	-4.9	-8.1	-9.2
LT	-0.4	-1.0	-3.2	-5.4	-8.0	-2.8	-5.2	-4.3	-5.5	-2.1	-4.5	-3.1	-3.9
HU	-9.2	-4.9	-3.4	-3.4	-3.9	-5.5	-4.5	-1.7	-2.0	-1.5	-0.2	3.1	2.9
PL	-3.9	-1.9	-3.9	-6.6	-7.3	-3.2	-5.3	-6.0	-5.6	-0.9	-3.1	-3.1	-2.7
RO	-2.2	-2.5	-5.4	-5.1	-5.6	-4.4	-7.9	-5.2	-4.7	-3.7	-7.2	-3.7	-3.1
SE	2.5	3.8	2.5	-2.6	-3.9	1.9	1.7	-0.5	-1.9	3.7	3.4	0.9	-0.5
UK	-2.7	-2.7	-5.5	-11.5	-13.8	-3.7	-5.6	-10.0	-12.2	-1.5	-3.3	-7.8	-9.2
EU-27	**-1.4**	**-0.8**	**-2.3**	**-6.0**	**-7.3**	**-2.0**	**-3.1**	**-4.6**	**-5.5**	**0.7**	**-0.4**	**-1.8**	**-2.5**

Note: The structural budget balance is calculated on the basis of the commonly agreed production function method (see European Commission 2004).
Source: Commission services.

Denmark, and Sweden all reported surpluses in 2008.

Looking ahead to 2009 and 2010, the public finance situation is expected to dramatically deteriorate in the light of slowing economic growth. The Commission services' spring 2009 forecast projects euro area (EU) real GDP to contract by 4.0 (4.0)% in 2009, compared to an expansion of 0.8 (0.9)% in 2008, and to stagnate at -0.1 (-0.1)% in 2010. Against this growth outlook, the aggregate deficit of the sixteen Member States which have adopted the single currency, is expected to reach 5.3% of GDP in 2009, 3.4 percentage points higher than the year before. Based on the no-policy-change assumption a further deterioration to 6.5% of GDP is projected in 2010. Broadly the same profile is expected for the EU as a whole. The deficit is forecast to rise to 6.0% of GDP in 2009, from 2.3% in 2008, and to continue to rise to 7.3% of GDP in 2010.

Outside the euro area, the development of budgetary positions is likely to be more diverse. The headline deficit in Hungary is forecast to stay slightly above the 3% threshold in both 2009 and 2010. In the Czech Republic, and to an even larger extent in Poland, the deficit is expected to remain well above the reference value of the Treaty in both years. In Romania it is projected to stay broadly constant at over 5% of GDP while for the United Kingdom a continuous further budgetary deterioration is forecast beyond 2008. Hereby the deficit in the United Kingdom is expected to reach 13.8% of GDP during 2010. For Latvia, and to a lesser extent for Estonia and Lithuania, a very significant budgetary worsening is also projected, resulting in a breach of the reference value of the Treaty in all three Baltic States over the forecast horizon. Bulgaria is the only Member State outside the euro area which is forecast to stay close to balance in both 2009 and 2010, while even Denmark and Sweden are expected to run deficits above the 3% threshold over the forecast horizon.

In structural terms, i.e. net of cyclical factors and one-off and other temporary measures, the projected deterioration in both the euro area and the EU in 2009 is smaller than that of the headline deficit, but still significant given that many Member States support their economies with discretionary measures under the EERP. In

particular, the structural balance is estimated to deteriorate by 1.1% of GDP in the euro area and by 1.5% of GDP in the EU as a whole. A further deterioration is projected for 2010, amounting to another 0.8% of GDP in the euro area and 0.9% in the EU as a whole. However, when making these estimates one should bear in mind that measuring cyclically-adjusted balances is not straightforward, in particular during a crisis such as the current one.

Against the backdrop of the group of euro-area countries that have already achieved their medium-term budgetary objective (MTO) having thinned out dramatically in 2008, structural fiscal positions are forecast to deteriorate further over the projection horizon. In both 2009 and 2010 only Luxembourg is expected to attain its MTO. Outside the euro area, a similar picture emerges and only Denmark and Bulgaria (both marginally so) are forecast to attain their MTOs in 2009 and 2010 respectively. However, it is clear that aiming again seriously to attain the MTOs will be a crucial element in any exit strategy from the current economic crisis.

Turning to government debt, rising debt-to-GDP ratios reflect the deteriorating public finances, ailing economies, and public interventions in the financial system (Table I.1.5). In the euro area, in 2008 the ratio rose by 3.3 percentage points to 69.3%. A further increase to 72.8% of GDP by 2010 is projected as primary deficits are coupled with a negative contribution from economic growth and the additional effect of rising interest expenditure. In the EU as a whole, the debt-to-GDP ratio is projected to rise steeply from its level of 61.5% in 2008 to 72.6% in 2009, and to rise further to 79.4% in 2010, not least because of a very significant increase in the debt ratios in the UK. Finally, risks for further debt increases stem from public intervention in the financial sector. ([6])

Aggregate figures tend to mask diverging developments at the country level. There are several Member States which before the crisis had low or very low debt levels, which however are now rising sharply. This group of countries includes Ireland, Latvia and the United Kingdom. Moreover, three euro area-countries are expected to surpass again the 100% of GDP public debt threshold by 2010. Notably, Italy already had a public debt-to-GDP ratio above 100% of GDP and given that debt has increased again this condition is expected to last throughout until 2010. In Belgium the government debt ratio rose again in 2008, after having remained on a steady downward path for many years. It stood at 84.0% of GDP in 2007, but is forecast to exceed the 100% of GDP threshold by 2010. In Greece the debt ratio, from a trough of 94.8% in 2007, is also expected to increase over the forecast horizon, up to 108.5% of GDP in 2010. As to the other Member States with debt ratios above the 60% of GDP threshold in 2008, namely Germany, France, Portugal, Hungary, Malta, and Austria, further increases of these ratios are projected in all of them.

([6]) See Part III.6 of this report.

Table I.1.4: **Composition of changes in the general government gross debt-to-GDP ratio in EU Member States (% of GDP)**

	Gross debt-to-GDP ratio				Change in debt ratio	Change in the debt ratio in 2008-10 due to:		
	2007	2008	2009	2010	2008-10	Primary balance	Interest & growth contribution	Stock-flow adjustment
BE	84.0	89.6	95.7	100.9	11.4	2.7	8.2	0.5
DE	65.1	65.9	73.4	78.7	12.8	3.9	8.1	0.7
IE	25.0	43.2	61.2	79.7	36.4	22.2	12.2	2.0
EL	94.8	97.6	103.4	108.0	10.4	1.4	5.6	3.4
ES	36.2	39.5	50.8	62.3	22.8	14.8	4.0	4.1
FR	63.8	68.0	79.7	86.0	18.0	7.8	6.2	4.1
IT	103.5	105.8	113.0	116.1	10.3	-0.2	10.3	0.2
LU	6.9	14.7	16.0	16.4	1.7	3.1	1.1	-2.5
NL	45.6	58.2	57.0	63.1	4.8	4.2	6.1	-5.5
AT	59.4	62.5	70.4	75.2	12.7	3.3	7.3	2.1
PT	63.5	66.4	75.4	81.5	15.1	7.0	6.6	1.4
SI	23.4	22.8	29.3	34.9	12.1	8.6	2.9	0.6
FI	35.1	33.4	39.7	45.7	12.3	0.9	3.0	8.3
MT	62.1	64.1	67.0	68.9	4.8	-0.2	4.8	0.2
CY	59.4	49.1	47.5	47.9	-1.3	0.0	0.4	-1.7
SK	29.4	27.6	32.2	36.3	8.7	7.3	1.1	0.3
EU-16	**66.0**	**69.3**	**77.7**	**83.8**	**14.5**	**5.5**	**7.3**	**1.6**
BG	18.2	14.1	16.0	17.3	3.2	-0.8	0.7	3.3
CZ	28.9	29.8	33.7	37.9	8.1	6.9	2.1	-0.9
DK	26.8	33.3	32.5	33.7	0.3	2.2	3.3	-5.2
EE	3.5	4.8	6.8	7.8	3.0	6.0	1.5	-4.5
LV	9.0	19.5	34.1	50.1	30.7	21.0	9.7	0.0
LT	17.0	15.6	22.6	31.9	16.3	10.8	5.6	0.0
HU	65.8	73.0	80.8	82.3	9.3	-2.4	8.9	2.8
PL	44.9	47.1	53.6	59.7	12.7	8.1	4.4	0.2
RO	12.7	13.6	18.2	22.7	9.1	7.6	1.4	0.2
SE	40.5	38.0	44.0	47.2	9.2	3.7	3.1	2.4
UK	44.2	52.0	68.4	81.7	29.7	20.2	5.7	3.8
EU-27	**58.7**	**61.5**	**72.6**	**79.4**	**17.8**	**7.4**	**8.4**	**2.0**

Note: Differences between the sum and the total of individual items are due to rounding.
Source: Commission services.

Table I.1.5: **Euro area - Government revenue and expenditure (% of GDP)**

	2007	2008	2009	2010
Total revenue	**45.5**	**44.8**	**44.7**	**44.4**
Taxes on imports and production (indirect)	13.5	12.9	13.0	13.0
Current taxes on income and wealth	12.4	12.2	11.8	11.5
Social contributions	15.1	15.3	15.5	15.4
of which actual social contributions	14.1	14.2	14.4	14.3
Other revenue	4.4	4.4	4.4	4.5
Total expenditure	**46.1**	**46.6**	**50.1**	**51.0**
Collective consumption	7.9	8.0	8.6	8.7
Social benefits in kind	12.1	12.3	13.1	13.4
Social transfers other than in kind	15.8	16.0	17.5	18.0
Interest	2.9	3.0	3.0	3.2
Subsidies	1.2	1.2	1.3	1.3
Gross fixed public capital formation	2.5	2.5	2.9	2.8
Other expenditures	3.5	3.6	3.6	3.5

Note: Differences between the sum and the total of individual items are due to rounding.
Source: Commission services.

1.4. GOVERNMENT REVENUE AND EXPENDITURE

In 2008, the observed deterioration in budgetary positions in the euro area was largely the result of a lower revenue-to-GDP ratio (Table I.1.6). The slight increase in the expenditure-to-GDP ratio was mainly due to higher social benefits and transfers. As to the revenue side, a negative contribution came from taxes on imports and production and also from taxes on income and wealth, the latter not least due to a rapid decline of corporate income taxes (Box I.1.3). Section I.3 confirms this view of the composition of the deterioration in the budget balance. It shows that compared to the plans presented in the 2007 updates of the Stability and Convergence Programmes, significant nominal expenditure overruns came together with large revenue shortfalls. Much lower than expected nominal growth further exposes these developments in the expenditure-to-GDP ratios. A similar pattern can be observed for the EU as a whole (Table I.I.7).

According to the Commission services' spring 2009 forecast, it is the massive deterioration mainly on the expenditure side of the budget which explains the worsening of structural balances over the forecast horizon in most Member States. For the euro area, a projected rise in the expenditure ratio of 4.4 percentage points of GDP is forecast for 2009-2010.

As to the outlook for 2009 and 2010, most change in composition is expected on the expenditure side. Collective consumption and social benefits and transfers are expected to considerably rise over the forecast horizon, which can only partly be explained by the operation of automatic stabilisers. The rest is due to discretionary measures. To a limited extent, the projected fiscal expansion also boosts growth-enhancing spending items: gross fixed public capital formation is projected to increase somewhat in both the euro area and the EU in 2009. However, the reduction in the share of interest expenditure that has contributed to a better allocation of available resources in past years is coming to a halt due to the crisis. On the revenue side composition effects are forecast to be small, mostly pertaining to a reduction in taxes on income and wealth.

Overall Member States budgetary plans for 2009 and 2010 have been compiled against a background of great uncertainty and exhibit many risks, on both the revenue and expenditure sides. ([7]) Eventually a consolidation strategy will need to be pursued to return to sound fiscal positions and ensure long-term sustainability.

([7]) See Part I.3 of this report.

Table I.1.6: **Government revenue and expenditure (% of GDP)**

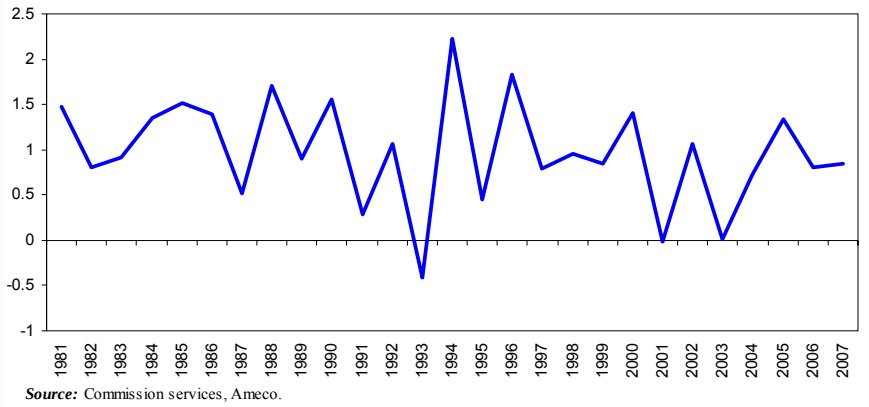
	Revenue				Expenditure			
	2007	2008	2009	2010	2007	2008	2009	2010
BE	48.1	48.4	48.5	48.2	48.3	49.8	52.9	54.3
DE	43.9	43.7	43.5	42.3	44.2	43.9	48.2	49.0
IE	35.7	33.7	33.7	33.9	35.7	41.0	45.8	49.1
EL	40.0	39.9	40.8	40.0	43.7	44.9	45.3	45.2
ES	41.0	36.8	36.4	36.9	38.8	40.5	45.2	47.1
FR	49.7	49.6	49.4	49.9	52.3	52.7	55.6	56.4
IT	46.6	46.4	46.5	46.5	47.9	48.8	51.2	51.1
LU	41.0	43.6	44.0	42.9	37.2	40.7	44.2	45.7
NL	45.6	46.8	46.1	45.6	45.3	45.4	48.3	50.2
AT	47.9	47.6	47.0	47.3	48.5	48.6	51.6	52.1
PT	43.1	44.2	42.6	42.4	45.7	45.9	48.9	48.7
SI	42.9	41.6	41.7	41.6	42.4	43.6	47.7	48.6
FI	52.6	52.3	52.0	51.3	47.3	48.3	52.8	54.3
MT	40.4	40.7	41.1	41.2	42.6	45.3	44.4	44.8
CY	46.4	45.6	44.1	44.1	42.9	44.0	44.4	45.0
SK	32.7	32.1	32.2	32.1	34.4	34.9	38.3	39.4
EA-16	45.5	44.8	44.7	44.4	46.1	46.6	50.1	51.0
BG	41.6	41.4	40.8	40.9	41.5	37.4	39.5	39.3
CZ	41.6	40.7	40.7	41.1	42.6	42.4	45.9	47.6
DK	55.4	54.8	52.8	53.4	50.9	51.8	55.0	57.0
EE	38.2	36.5	38.2	38.4	35.5	40.9	45.0	47.3
LV	37.6	36.0	34.1	34.7	35.9	39.5	46.8	49.8
LT	33.9	33.9	34.8	36.0	34.9	37.2	39.5	42.7
HU	44.9	45.5	46.1	46.4	49.7	49.9	50.8	52.0
PL	40.0	39.6	40.2	40.3	42.1	43.1	46.1	46.8
RO	34.0	32.7	32.2	32.5	36.6	38.5	38.5	38.9
SE	56.4	55.1	53.0	52.7	52.5	53.1	56.6	57.3
UK	42.6	41.8	41.4	41.6	44.0	47.7	50.5	52.4
EU-27	45.1	44.5	44.3	44.1	45.7	46.8	50.1	51.1

Source: Commission services.

Box I.1.4: The behaviour of tax revenues and the financial crisis

Tax revenues tend to follow economic activity but can nevertheless be subject to substantial variation near turning points of the economic cycle. Events such as a systemic financial crisis can exacerbate these trends further. ([1]) Looking backward, the experience of Finland and Sweden shows that countries facing a severe financial crisis and a pronounced economic slowdown can experience large variations in tax elasticities ranging from a large increase (before the crisis) to a steep fall (during the crisis). Graph 1 plots the development of the apparent tax elasticities for Finland ([2]) and shows that at the outbreak of the previous financial crisis which lasted from 1991 to 1994, the total tax elasticity still tended to increase but then experienced a sharp decline after 1991 (-0.41 in 1993). ([3]) The tax elasticity rebounded in subsequent years to stabilise at levels comparable to the pre-crisis period.

Graph 1: Long-run evolution in total tax elasticities in Finland 1980-2007



Source: Commission services, Ameco.

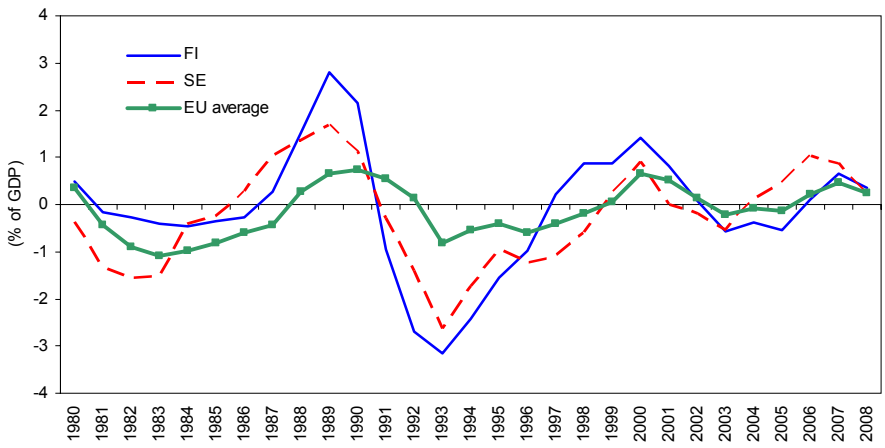
Overall the cyclical component of tax revenues (and as a result also total tax revenues) dropped considerably in Finland and Sweden during the financial crisis after having experienced a steep increase in the years preceding the crisis as shown in Graph 2. The past experiences of Finland and Sweden suggest that tax revenues can remain relatively high when economic activity starts worsening and tax revenues are still high against the backdrop of past revenue windfalls. After the outbreak of the crisis, however, tax revenues may fall rapidly due to the fact that tax revenues may react disproportionately strongly to the deterioration of economic activity. This is true in particular for the most volatile components of tax revenues, such as corporate and property taxes.

([1]) See European Commission (2009), 'A First Horizontal Assessment of National Recovery Programmes in response to the European Economic Recovery Plan'. Note for the Economic and Financial Committee, ECFIN/C2/REP 50229.
([2]) No consistent data (i.e. based on ESA95) are available for Sweden for the period considered in Graph 1.
([3]) For more details on Finland's and Sweden's financial crises and the fiscal implications see Part III, in particular Section III.4.

(Continued on the next page)

Box (continued)

Graph 2: Cyclical component of general government revenue, % of GDP 1980-2008



Source: Commission services, Ameco.

At the current juncture similar developments seem to be occurring in a number of EU Member States, especially in those that are most exposed to the relatively high volatility of the aforementioned tax components. Indeed, high tax revenues in the EU until 2007 tended to be associated with large revenue windfalls which in some countries such as the UK, Spain or Ireland were closely linked to property tax revenues (including taxes on housing market transactions) and buoyant corporate tax revenues.

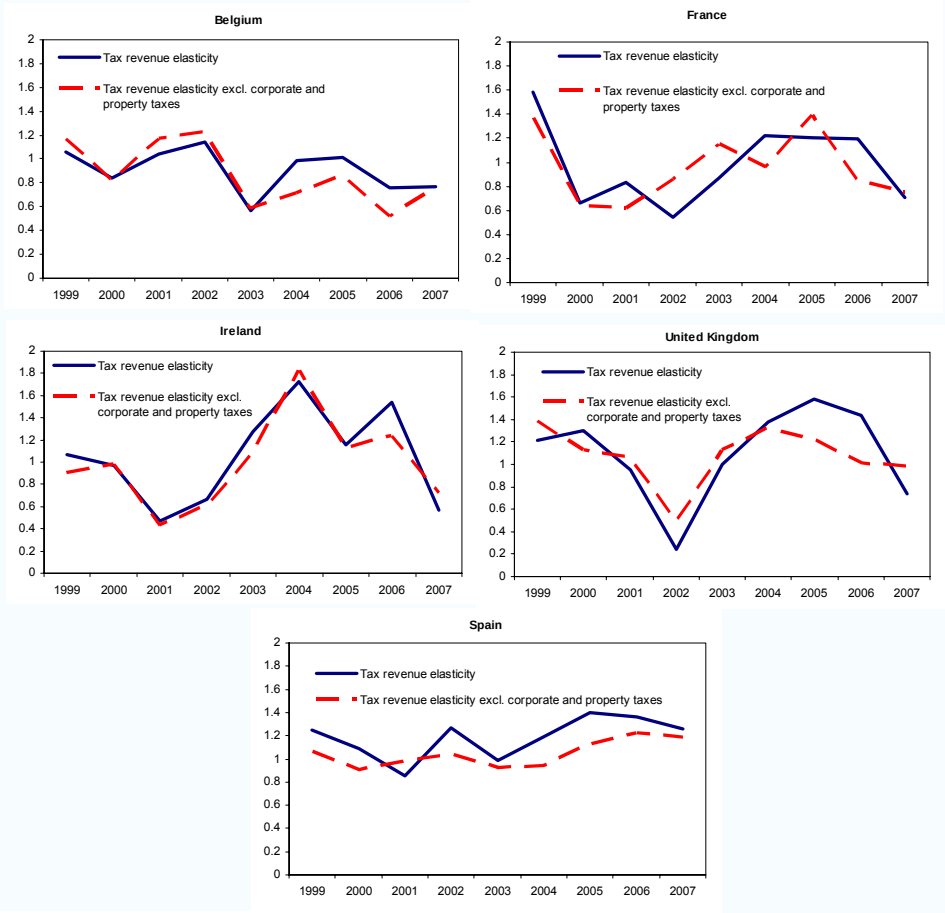
Graph 3 provides evidence for this by reporting the apparent total tax revenues with and without the aforementioned items for a selected group of EU Member States comprising the countries that have benefited most from corporate and property tax revenues during the period 1999-2007. ([1])[3] It shows that overall, since 2003, tax revenues stemming from corporate and property taxes had in general led to an increase in the overall tax revenue ratio, in some cases quite substantially so (for instance, in the UK the variation in the tax revenue ratio was higher by 0.8 percentage points in 2006, by +0.9 in Ireland in the same year, by +0.6 in France in 2006 due to the influence of corporate and property taxes, and by +0.7 in Spain in 2005). The shortfalls associated with these tax components in the current cyclical downturn are now leading to a disproportionately steep fall in the tax revenue ratio. A protracted deterioration in overall economic activity could exacerbate this negative trend further.

([1]) Recently acceded Member States are not taken into account as time series were in general much shorter.

(Continued on the next page)

Box (continued)

Graph 3: Annual change in total tax revenues with and without property and corporate taxes in selected EU countries (percentage points of GDP)



Sources: Commission services and OECD.

2. IMPLEMENTING THE SGP - FLEXIBILITY WITHIN THE EXCESSIVE DEFICIT PROCEDURE

2.1. INTRODUCTION

The extraordinary economic downturn and the associated strong deterioration of budgetary positions has put a strain on the EU fiscal framework based on the Treaty requirement to avoid excessive deficits, as well as on the requirement for Member States to achieve and maintain their medium-term budgetary objective (MTO). ([8])

In 2008, the number of Member States with a nominal deficit above 3% of GDP increased to eleven, from just two in 2007 (see Table I.I.3). According to the Commission services' spring 2009 forecast, in 2009 the government deficits would exceed the 3% of GDP threshold in the Treaty in nearly all Member States (the only exceptions being Bulgaria, Finland, Denmark, Luxembourg, Cyprus, Sweden and Estonia). Based on a no-policy change scenario, in 2010 the deficit would remain below 3% of GDP only in Bulgaria, Cyprus, Luxembourg and Finland.

Within a context where the near-totality of the EU is likely to become subject to the excessive deficit procedure (EDP), the enforcement of the rules-based framework of the Treaty and Stability and Growth Pact (SGP) reflects the common interest of Member States to anchoring strategies for exit from short-term support and for ensuring the sustainability of public finances. The flexibility introduced by the 2005 reform of the SGP allows Member States in excessive deficit to implement corrective action in time frames consistent with the recovery of the economy, with rapid fiscal consolidation being called for only in cases of immediate sustainability risk. Furthermore, the reform established the possibility of revising the recommendations for the correction of the excessive deficit including an extension of the deadline in case of adverse economic developments with major unfavourable consequences for public finances. This possibility is meant to cater for budgetary outcomes falling short of targets on account of the deterioration of the underlying economic scenario.

This section reviews the implementation of the excessive deficit procedure since spring 2008.

2.2. THE EXCESSIVE DEFICIT PROCEDURE

Proceeding in a chronological order, in July 2008, the Council adopted recommendations under Article 104(7) for the United Kingdom to correct its excessive deficit by the financial year 2009/10 at the latest. ([9]) At the same time, the Council, based on a proposal by the Commission, considered that Poland had corrected its excessive deficit and therefore abrogated its decision on the existence of an excessive deficit in Poland in accordance with Article 104(12) of the Treaty. ([10]) Furthermore, the Greek authorities reported in October 2008, validated by Eurostat, that the general government deficit had breached the 3% in 2007, contrary to the April 2008 notification, as a result of a statistical revision.

The second half of 2008 saw a strong deterioration of budget balances across the board. A number of factors explain the rapid increase in general government deficits and debt, with the operation of automatic stabilisers amplified on the revenue side by a reversal of previous windfall, being supplemented by discretionary measures taken in

([8]) Article 104 of the Treaty lays down an excessive deficit procedure (EDP) where the reference values for deficits and debt are 3% and 60% percent of GDP respectively. This procedure is further specified in Council Regulation (EC) No 1467/97 "on speeding up and clarifying the implementation of the excessive deficit procedure". The obligation for Member States to achieve and maintain their MTO is laid out and specified in Council Regulation (EC) No 1466/97 "on the strengthening of the surveillance of budgetary positions and the surveillance and coordination of economic policies". These two regulations are part of the Stability and Growth Pact, representing its "dissuasive" and "preventive" arm, respectively. Relevant legal texts and guidelines can be found at: http://ec.europa.eu/economy_finance/other_pages/other_pages12638_en.htm
Enforcement mechanisms of the EU budgetary surveillance framework are described in Box I.2.1 in Public Finances in EMU 2008.

([9]) In March 2008, the UK authorities notified that the United Kingdom's general government deficit in 2008/09 was planned to reach 3.2% of GDP, thus exceeding the 3% of GDP reference value.

([10]) Poland's general government deficit decreased to 1.9% of GDP in 2007, from 3.9% of GDP in 2006.

the context of the European Economic Recovery Plan (EERP; see Section I.1 for further details). The rise in deficits implies that a temporary departure from medium-term budgetary targets was unavoidable. At the same time, the sudden deterioration of economic and budgetary conditions proved the importance of preparing in good times room for manoeuvre for a downturn. In its Recommendations with a view to bringing an end to the situation of an excessive government deficit issued in April 2009, the Council highlighted the importance of achieving the MTO for an appropriate budgetary management of economic downturns.

Following the rapid deterioration of public finances, France, Ireland, Latvia, Malta and Spain notified a breach of the reference value for the year 2008. In February 2009 the Commission adopted reports under Article 104(3) for all above countries and for Greece. In the case of Malta, the Commission concluded that the conditions of closeness and temporariness were satisfied, which led to the decision that no further steps would be taken at that point. In April 2009, following an opinion of the Commission and on the basis of recommendations from the Commission, the Council decided that an excessive deficit existed in France, Spain, Ireland and Greece and set deadlines for correction in accordance with Article 104(6-7). Furthermore, the Council considered, in accordance with Article 104(8), that the United Kingdom had not taken effective action in response to the recommendations formulated under Article 104(7) in July 2008 and issued new recommendations based on Article 104(7). For Latvia the follow-up steps under Article 104(5-7) were delayed due to ongoing negotiations on medium-term financial assistance.

According to data notified by the authorities in March 2009 and subsequently validated by Eurostat, the 2008 general government deficit in Malta was revised upward to well above the 3% of GDP reference value. Also Poland, Lithuania and Romania reported general government deficits exceeding 3% of GDP for 2008 in the context of the April 2009 notification. Accordingly, in May 2009 the Commission adopted reports under Article 104(3) for all four Member States.

In the following paragraphs, details on the surveillance mechanisms in the Member States involved in an excessive deficit procedure both inside and outside the euro area are discussed in the English alphabetical order of Member States.

2.2.1. The surveillance mechanism in the euro area Member States

France

According to the December 2008 stability programme update of France, the general government deficit in France was planned to reach 2.9% of GDP in 2008, 3.9% in 2009, and 2.7% in 2010. On 6 February 2009, the French Minister of the Economy, Industry and Employment announced, in a letter addressed to the Commissioner of Economic and Financial Affairs, an upward revision of the deficit estimates to 3.2% of GDP in 2008, 4.4% in 2009 and 3.1% in 2010. Therefore, the 3% of GDP reference value would already have been exceeded in 2008. The debt was estimated to be at 68.0% of GDP in 2008, rising to 73.9% in 2009. The rise in the deficit is due partly to the measures taken in line with the EERP, as announced on 4 December 2008 by the French President. According to the French government, the recovery plan would raise the deficit by 0.9% of GDP over the next two years, with the main impact in 2009, but would have no long-term impact on the deficit.

In its February 2009 report in accordance with Article 104(3) the Commission considered the deficit to be close to the reference value. Although France suffered from a sharp economic slowdown near the end of 2008, the deficit was not deemed to be caused by a severe economic downturn in the sense of the Treaty. The excess over the 3% threshold was also considered a reflection of the fact that, since 2002, the deficit in France has been high and did not leave any room for manoeuvre for a downturn. In spite of the Commission's policy advice of 28 May 2008, the necessary fiscal consolidation was not carried out or planned. Finally, the deficit was not considered temporary, as the Commission services' January 2009 interim forecast projected the general government deficit to reach 5.4% of GDP in 2009, to decline to 5.0% in 2010 as the budgetary impact of the recovery plan is phased out. Therefore the deficit criterion in the Treaty was not fulfilled. Additionally, the general government gross debt ratio was estimated in the December 2008 updated stability

programme at 66.7% of GDP, above the 60% of GDP Treaty reference value (up from 63.6% in 2006 and 63.9% in 2007). The Commission therefore concluded that the debt ratio was not sufficiently diminishing towards the reference value and that the debt criterion in the Treaty was not fulfilled either.

The Council decided on 27 April 2009, in accordance with Article 104(6), that an excessive deficit existed in France. It was further noted that the French budgetary situation was affected by a sharp deterioration of the economic environment resulting from the global financial crisis. Therefore special circumstances were deemed to exist in France, allowing a correction of the excessive deficit in a medium-term framework. This resulted in the Council issuing recommendations in accordance with Article 104(7), setting a deadline for correction by 2012 at the latest and requiring a strengthening of the foreseen annual average fiscal effort to at least 1% of GDP. Consolidation would start in 2010, after the implementation of stimulus measures taken in line with the EERP. After six months time (i.e., after 27 October 2009), the Commission will assess whether effective action was taken.

Greece

According to data notified by the Greek authorities in October 2008, the general government deficit reached 3.5% of GDP in 2007, thus exceeding the 3% of GDP reference value. The 2007 deficit was revised upwards from 2.8% of GDP notified in April 2008. The revision, which was validated by Eurostat on 22 October 2008, ([11]) included arrears paid to the EU budget following the GNI revision and a reduction of surpluses from extra-budgetary funds and social security funds. The general government gross debt was estimated at 94.8% of GDP, above the 60% of GDP reference value.

In its February 2009 report under Article 104(3) the Commission considered that the deficit was still close to the reference value, although it had reached the maximum deviation that could be considered still close to the Treaty reference value. However, the deficit was not deemed to be exceptional as it did not result from an unusual event or a severe economic downturn in the sense of the Treaty. Since the Commission services' January 2009 interim forecast projected the general government deficit net of one-offs to reach 4.4% of GDP (or 3.7% of GDP including one-offs) in 2009 and 4.2% in 2010 assuming no policy change, the breach could not be considered temporary. In view of the large imbalances of the Greek economy and, given the lack of room for fiscal manoeuvre, the government did not adopt any short-term stimulus package in response to the economic slowdown, in line with the EERP. In consideration of the above, the Commission concluded that the deficit criterion in the Treaty was not fulfilled. Furthermore, the Commission considered that the debt ratio could not be seen as "sufficiently diminishing and approaching the reference value at a satisfactory pace" in the sense of the Treaty, implying that the debt criterion in the Treaty was not fulfilled either.

The Council decided according to Article 104(6) on 27 April 2009 that an excessive deficit existed in Greece. At the same time, it addressed recommendations in accordance with Article 104(7) to Greece, specifying that the deficit should be corrected by 2010 at the latest. Fiscal consolidation was deemed urgent for recovering competitiveness losses and addressing the existing external imbalances. In view of the mounting level of debt and the projected increase in age-related expenditure, the Council was of the opinion that the Greek authorities should improve the long-term sustainability of public finances by continuing the on-going reforms in the healthcare and pension system. After six months time (i.e., after 27 October 2009), the Commission will assess whether effective action was taken.

Ireland

According to the addendum to the October 2008 stability programme update, submitted by the Irish authorities on 9 January 2009, the general government deficit in Ireland reached 6.3% of GDP in 2008, thus exceeding the 3% of GDP reference value. Meanwhile, general government gross debt stood at 40.6% of GDP, below the 60% of GDP reference value but nearly 16 percentage points above the level in 2006-07, of which around 9 percentage points was due to increased cash deposits. While Ireland took some measures

([11]) News Release 147/2008 of 22 October 2008 on the provision of data for the excessive deficit procedure.

supporting the economy in line with the European Economic Recovery Plan, they are part of a broader medium-term budgetary strategy geared towards consolidation.

The Commission considered in its February 2009 report under Article 104(3) that the Irish deficit was not close to the reference value. However, the excess over the 3% of GDP reference value was deemed to be exceptional as it resulted from a severe economic downturn in the sense of the Treaty and the Stability and Growth Pact. The scale of the downturn was unexpected, with the end-2007 update of the stability programme expecting real GDP growth of +3% in 2008, while the Commission services' January 2009 interim forecast estimated growth at -2% in 2008. The deficit was not considered temporary. The Commission services' January 2009 interim forecast projected that the deficit would widen to 11% of GDP in 2009 and worsen further to 13% of GDP in 2010 on a no-policy change basis. The January 2009 addendum to the stability programme targeted a deficit of 9.5% of GDP in 2009 before falling gradually to a value below 3% of GDP in 2013, based however on yet to be specified consolidation measures. In view of the above, the Commission concluded that the deficit criterion in the Treaty was not fulfilled.

The Council decided on 27 April 2009, in accordance with Article 104(6), that an excessive deficit existed in Ireland. Furthermore, it considered that special circumstances existed on account of the size of the required adjustment and the very weak economic background, allowing a correction of the excessive deficit in a medium-term framework. This resulted in the Council setting a deadline for correction of the excessive deficit in 2013, in accordance with Article 104(7), corresponding to an average annual fiscal effort of at least 1½% of GDP from 2010. After six months time (i.e., after 27 October 2009), the Commission will assess whether effective action was taken.

Malta

According to data reported by the authorities in the context of the October 2008 notification, the general government deficit in Malta was planned to reach 3.3% of GDP in 2008, thus exceeding the 3% of GDP reference value. General government gross debt was projected at 63.8% of GDP, above the 60% of GDP reference value. Subsequently, in the budget for 2009 presented on 3 November, and repeated in the December 2008 update of the stability programme, the planned deficit ratio for 2008 was confirmed at 3.3% of GDP, while debt was projected at 62.8% of GDP. The increase of the deficit was partly the result of Malta's response to the call for stimulus measures in line with the EERP.

The Commission issued a report in accordance with Article 104(3) in February 2009, concluding that the excess was close to the reference value. The breach of the threshold was not deemed to be exceptional in the sense of the Treaty, since it did not originate from an unusual event or a severe economic downturn in 2008. The Commission considered the deficit to be temporary, as the outcome for 2008 was affected by a deficit-increasing one-off cost of 1% of GDP in 2008. Furthermore, the Commission services' January 2009 interim forecast projected a fall in the deficit ratio from 3.5% of GDP in 2008 to 2.6% of GDP in 2009 (2.9% excluding further one-offs). The Commission concluded that the deficit criterion in the Treaty was not fulfilled. The debt was considered to be diminishing sufficiently and approaching the reference value at a satisfactory pace, suggesting that the debt criterion in the Treaty was fulfilled. Since the Maltese deficit satisfied the double condition of closeness and temporariness, in line with the Treaty other relevant factors were taken into account. On balance, these relevant factors were deemed relatively favourable, while the medium-term budgetary strategy remained geared towards making further progress with consolidation. It was therefore concluded that that no further steps under the Excessive Deficit Procedure were necessary.

In the context of the April 2009 notification, the Maltese authorities reported a revised figure for the 2008 general government deficit of 4.7% of GDP. The general government gross debt ratio was estimated at 64.1% of GDP in 2008, above the 60% of GDP Treaty reference value. Since the revised deficit figure was markedly higher than the previous one, the Commission considered it necessary to issue a new report under Article 104(3) in May 2009 and concluded that the deficit could no longer be considered as close to the reference value. Since the Commission services' spring forecast projects the general government

balance at 3.6% in 2009 and 3.2% in 2010 under a no policy change assumption, the excess was also no longer deemed to be temporary. As in the previous assessment, the deficit was not seen to be caused by exceptional circumstances in the sense of the Treaty. The Commission therefore concluded that the deficit criterion in the Treaty was not fulfilled. Furthermore, based on the new data and the most recent Commission services' forecast, the debt ratio was considered not to be "sufficiently diminishing and approaching the reference value at a satisfactory pace" in the sense of the Treaty and the Stability and Growth Pact from a medium-term perspective. This suggested that the debt criterion in the Treaty was not fulfilled either.

Spain

According to the January 2009 update of the stability programme, Spain's general government deficit reached 3.4% of GDP in 2008, thus exceeding the 3% of GDP reference value. The programme foresees a further deterioration to 5.8% of GDP in 2009 before recovering to 4.8% in 2010. To a significant extent, the spike in 2009 is the result of expansionary fiscal measures adopted by the Spanish authorities in response to the economic downturn and in line with the EERP. Government gross debt is estimated to be 39.8% of GDP, rising to 47.3% in 2009 and 51.6% in 2010, but remaining below the 60% of GDP reference value.

The Commission concluded in its February 2009 report in accordance with Article 104(3) that the excess was close to the reference value. The deficit was not considered exceptional, since it did not result from an unusual event or a severe economic downturn in 2008 in the sense of the Treaty and the Stability and Growth Pact. The excess over the 3% of GDP reference value could not be seen as temporary, since the Commission services' January 2009 interim forecast projected the general government deficit to increase to 6.2% of GDP in 2009, before falling to 5.7% of GDP under the customary assumption of no policy change. In view of the above, the Commission concluded that the deficit criterion in the Treaty was not fulfilled.

The Council decided on 27 April 2009, in accordance with Article 104(6), that an excessive deficit existed in Spain. In view of both the sharp economic downturn and the size of the required budgetary correction, special circumstances were deemed to exist, allowing for correction in a medium-term framework. The Council therefore addresses recommendations in accordance with Article 104(7) to Spain specifying a correction by 2012 at the latest. This is to be achieved through an average annual fiscal effort of at least 1¼% of GDP, as planned in the January 2009 update of the stability programme, starting consolidation in 2010 after the implementation of stimulus measures taken in line with the EERP. After six months time (i.e., after 27 October 2009), the Commission will assess whether effective action was taken.

2.2.2. The surveillance mechanism in the non-euro area Member States

Hungary

The spring 2004 fiscal notification of Hungary reported a general government deficit in 2003 of 5.9% of GDP, well above the reference value. On this basis and following a recommendation by the Commission, the Council decided in July 2004 that an excessive deficit existed in Hungary. At the same time, the Council issued a recommendation under Article 104(7) recommending that the excessive deficit situation be corrected by 2008. In January 2005, following a recommendation by the Commission in accordance with Article 104(8), the Council considered that Hungary had not taken effective action in response to its recommendation. Since Hungary is a Member State with a derogation within the meaning of Article 122 of the Treaty, ([12]) the Council issued another recommendation based on Article 104(7) in March 2005, confirming the 2008 deadline for the correction of the excessive deficit.

After a substantial deterioration of the budgetary outlook in Hungary, the Council decided in November 2005, acting pursuant to Article 104(8), that Hungary had for the second time failed to comply with the recommendations under Article 104(7). Accordingly, the Council addressed a new recommendation under Article 104(7) to Hungary

([12]) Member States with a derogation are to avoid excessive deficits but in the event of inadequate action established under Article 104(8), further recommendations can be addressed only on the basis of Article 104(7) as Articles 104(9) and Article 104(11) do not apply to them.

in October 2006, postponing the deadline for the correction of the excessive deficit to 2009.

In the April 2009 EDP notification Hungary reported a deficit of 3.4% of GDP for 2008, almost 1 percentage point lower than the target recommended by the Council, with the additional improvement mostly due to expenditure savings and measures addressing tax evasion. This corresponds to a structural improvement of 1 percentage point. The expectation of a better than targeted overall performance in the period 2007-2008 was also expressed in the fourth progress report submitted by the Hungarian authorities in November 2008, which foresaw a deficit target of 2.6% of GDP in 2009, in line with the considerably revised 2009 budget, which was adopted by Parliament on 17 December 2008. While the Hungarian budgetary policy remains aimed at correcting imbalances, leaving no room for expansionary measures, the 2009 deficit target was revised upward due to the worsened growth outlook.

Latvia

According to the convergence programme update submitted by the Latvian authorities on 14 January 2009, the general government deficit in Latvia was estimated to have reached 3.5% of GDP in 2008 and was expected to deteriorate further to 5.3% in 2009. The debt stood at 19.4% of GDP in 2008, projected to rise to 32.4% in 2009. From 2009, in line with the EERP and with the authorities' economic stabilisation plan adopted in December 2008 in response to the international financial assistance, Latvia has aimed its budgetary policy more clearly at correcting the existing external and internal imbalances.

In February 2009, the Commission deemed, in its report under Article 104(3), that the deficit was close to the reference value. The excess was considered to be exceptional, resulting from a severe economic downturn in the sense of the Treaty and the Stability and Growth Pact. According to the Commission services' January 2009 interim forecast, real GDP growth in Latvia was projected to be strongly negative in the years 2008 and 2009 (-2.3% and -6.9% respectively). The deficit was not considered temporary, as the January 2009 interim forecast projected that the deficit would widen to 6.3% of GDP in 2009 and worsen further to 7.4% of GDP in 2010 on a no-policy change basis. The Commission therefore concluded that the deficit criterion in the Treaty was not fulfilled. The follow-up steps under Article 104(5-7) have been delayed to reflect the outcome of the negotiations in the framework of the medium-term financial assistance.

Lithuania

In the April 2009 notification the Lithuanian authorities estimated the general government deficit to have reached 3.2% of GDP in 2008, thus exceeding the 3% of GDP threshold, while planning a deficit of 2.9% in 2009. The debt ratio was reported to be at 15.6% of GDP in 2008 and was projected at 22.2% in 2009. From 2009 onwards, in line with the EERP, Lithuania, which is facing significant external and internal imbalances, has adopted a budgetary policy which clearly aims at correcting such imbalances.

The Commission adopted a report under Article 104(3) in May 2009. In this report, the deficit was considered to be close to the reference value. The excess over the reference value was not deemed to be exceptional in the sense of the Treaty and the Stability and Growth Pact in 2008. Since the Commission services' spring forecast projects the deficit to rise to 5.3% of GDP in 2009 and further to 8.0% in 2010 on a no policy change basis, the deficit was not considered temporary. The Commission concluded that the deficit criterion in the Treaty was not fulfilled.

Poland

According to the April 2009 EDP notification submitted by the Polish authorities, the general government deficit reached 3.9% of GDP in 2008, thus exceeding the 3% of GDP reference value, while a deficit of 4.6% was planned for 2009. The debt ratio was estimated at 47.1% of GDP in 2008 and projected to rise to 51.0% in 2009. The rise in the deficit in 2009 is partly due to expansionary measures taken in line with the EERP.

In May 2009, the Commission prepared a report under Article 104(3). In this report, the deficit was not considered to be close to the reference value. The excess over the reference value was also not deemed to be exceptional in the sense of the Treaty and the Stability and Growth Pact in 2008. Since

the Commission services' spring forecast projects the deficit to rise to 6.6% of GDP in 2009 and further to 7.3% in 2010 on a no policy change basis, the deficit was not considered temporary. The Commission therefore concluded that the deficit criterion in the Treaty was not fulfilled.

Romania

In the April 2009 notification the Romanian authorities reported a deficit of 5.4% of GDP for 2008, breaching the 3% of GDP reference value. A slight improvement to 5.1% of GDP was foreseen for 2009. The general government debt ratio was reported to be at 13.6% of GDP in 2008 and was projected at 17.9% in 2009. From 2009, in line with the EERP and with the authorities' request for medium-term financial assistance, Romania has geared its budgetary policy more clearly towards correcting the existing external and internal imbalances.

The Commission prepared a report under Article 104(3) in May 2009. In this report, the Commission concluded that the deficit could not be considered close to the reference value. Furthermore, the excess was not deemed to be due to special circumstances in the sense of the Treaty and the Stability and Growth Pact in 2008. The deficit was not considered temporary, since the Commission services' spring forecast projects the deficit to be at 5.1% of GDP in 2009 at 5.6% in 2010, assuming no policy change. The Commission concluded that the deficit criterion in the Treaty was not fulfilled.

United Kingdom

According to the data notified by the UK authorities in March 2008, the general government deficit in the financial year 2008/09 was expected to reach 3.2% of GDP (3.3% according to the Commission services' spring 2008 forecast) and further deficit-increasing measures were announced by the government in May 2008. The general government gross debt was projected to remain below the 60% of GDP threshold, although on a rising trend.

In the light of this, on 11 June 2008 the Commission adopted a report under Article 104(3) of the Treaty on the public finance situation in the United Kingdom, thereby initiating the excessive deficit procedure vis-à-vis the UK. The Commission concluded that the planned government deficit remained close to the reference value but that the excess over the reference value could not be qualified as exceptional within the meaning of the Treaty and the Stability and Growth Pact. The excess could not be seen as temporary, since the Commission services' spring 2008 forecast projected a general government deficit of 3.3% of GDP in 2009/10 in the absence of new discretionary deficit-reducing measures. This implied that the deficit criterion in the Treaty was not fulfilled

In July 2008, the Council decided according to Article 104(6) that an excessive deficit existed in the United Kingdom. The consideration of relevant factors did not suggest the presence of special circumstances warranting a departure from the standard deadline for correcting the deficit. Accordingly, the Council decided pursuant to Article 104(7) that the headline deficit should be brought below the 3 % of GDP reference at the latest by financial year 2009/10, corresponding to a structural improvement of at least 0,5 % of GDP in 2009/10.

From the second half of 2008 onwards, the UK has been heavily affected by the unfolding financial and economic crisis, which has led to a sharp deterioration in the general government balance. Furthermore, the UK undertook discretionary fiscal stimulus measures in line with the European Economic Recovery Plan (EERP) as agreed by the European Council on 11-12 December 2008, affecting the general government balance in the financial years 2008/09 and 2009/10. In the April 2009 EDP notification, the United Kingdom reported a deficit of 5.5% of GDP for the financial year 2008/09. The 2009 budget, which was presented on 22 April 2009, revised the deficit estimate for 2008/09 to 7.2% of GDP. For the subsequent years, the Commission services' spring forecast foresees a further deterioration to a deficit of 13.0% for 2009/10 and 12.8% for 2010/11. The government debt ratio is forecast to increase from 55.3% for 2008/09 to 83.3% for 2010/11.

On 27 April 2009, the Council considered in accordance with Article 104(8) that the UK authorities had not taken effective action in response to the July 2008 Council recommendations and the Council issued new

Table I.2.1: **Overview EDP steps - Euro area Member States**

Steps in EDP procedure	Article of the Treaty	Country				
		FR	EL	IE	MT	ES
Starting phase						
Commission adopts EDP-report = start of the procedure	104.3	18.2.2009	18.2.2009	18.2.2009	13.5.2009	18.2.2009
Economic and Financial Committee adopts opinion	104.4	27.2.2009	27.2.2009	27.2.2009	29.5.2009	27.2.2009
Commission adopts:						
-opinion on existence of excessive deficit	104.5	24.3.2009	24.3.2009	24.3.2009		24.3.2009
-recommendation for Council decision on existence of excessive deficit	104.6	24.3.2009	24.3.2009	24.3.2009		24.3.2009
-recommendation for Council recommendation to end this situation	104.7	24.3.2009	24.3.2009	24.3.2009		24.3.2009
Council adopts:						
-decision on existence of excessive deficit	104.6	27.4.2009	27.4.2009	27.4.2009		27.4.2009
-recommendation to end this situation	104.7	27.4.2009	27.4.2009	27.4.2009		27.4.2009
-deadline for taking effective action		27.10.2009	27.10.2009	27.10.2009		27.10.2009
-deadline for correction of excessive deficit		**2012**	**2010**	**2013**		**2012**

Source: Commission services.

recommendations in accordance with Article 104(7). ([13]) In light of the progressively acute deterioration in economic conditions and prospects the Council decided that special circumstances exist in the case of the UK, allowing correction over the medium term. Therefore, the Council set a new deadline for correction of the excessive deficit by the financial year 2013/14, strengthening the foreseen average annual fiscal effort to clearly beyond 1% of GDP, to begin after the planned stimulus measures in 2009. After six months time (i.e., after 27 October 2009), the Commission will assess whether effective action was taken.

([13]) Pursuant to point 5 of the Protocol on certain provisions relating to the United Kingdom of Great Britain and Northern Ireland, the obligation in Article 104(1) of the Treaty to avoid excessive general government deficits does not apply to the United Kingdom unless it moves to the third stage of economic and monetary union. While in the second stage of economic and monetary union, the United Kingdom is required to endeavour to avoid excessive deficits, pursuant to Article 116(4) of the Treaty.

Table I.2.2: **Overview EDP steps - Non-euro area Member States**

Steps in EDP procedure	Article of the Treaty	Country					
		HU	LV	LT	PL	RO	UK
Starting phase							
Commission adopts EDP-report = start of the procedure	104.3	12.5.2004	18.2.2009	13.5.2009	13.5.2009	13.5.2009	11.6.2008
Economic and Financial Committee adopts opinion	104.4	24.5.2004	27.2.2009	29.5.2009	29.5.2009	29.5.2009	25.6.2008
Commission adopts:							
-opinion on existence of excessive deficit	104.5	24.6.2004					2.7.2008
-recommendation for Council decision on existence of excessive deficit	104.6	24.6.2004					2.7.2008
-recommendation for Council recommendation to end this situation	104.7	24.6.2004					2.7.2008
Council adopts:							
-decision on existence of excessive deficit	104.6	5.7.2004					8.7.2008
-recommendation to end this situation	104.7	5.7.2004					8.7.2008
-deadline for taking effective action		5.11.2004					8.1.2009
-deadline for correction of excessive deficit		**2008**					**financial yr 2009/10**
Follow-up of the article 104.7 Council recommendation							
Commission adopts communication on action taken							
Council adopts conclusions thereon							
Commission adopts recommendations for Council decision establishing inadequate action	104.8	22.12.2004					24.3.2009
Council adopts decision establishing inadequate action	104.8	18.1.2005					27.4.2009
Commission adopts recommendation for **new** Council recommendation to end excessive deficit situation	104.7	16.2.2005					24.3.2009
Council adopts **new** recommendation to end excessive deficit situation	104.7	8.3.2005					27.4.2009
-deadline for taking effective action		8.7.2005					27.10.2009
-new deadline for correction of the excessive deficit		**2008**					**financial yr 2013/14**
Follow-up of the NEW article 104.7 Council recommendation							
Commission adopts communication on action taken		13.7.2005					
Council adopts conclusions thereon							
Commission adopts recommendations for Council decision establishing inadequate action	104.8	20.10.2005					
Council adopts decision establishing inadequate action	104.8	8.11.2005					
Commission adopts recommendation for **new** Council recommendation to end excessive deficit situation	104.7	26.9.2006					
Council adopts **new** recommendation to end excessive deficit situation	104.7	10.10.2006					
-deadline for taking effective action		10.4.2007					
-progress report submitted		26.4.2007					
-new deadline for correction of the excessive deficit		**2009**					
Follow-up of the NEW article 104.7 Council recommendation							
Commission adopts communication on action taken		13.6.2007					
Council adopts conclusions thereon		10.7.2007					

Source: Commission services.

3. PLANS IN THE STABILITY AND CONVERGENCE PROGRAMMES ACKNOWLEDGE DIFFERENT ROOM FOR FISCAL MANOEUVRE

3.1. INTRODUCTION

This section provides an overview of the 2008-2009 updates of Stability and Convergence Programmes (SCP) submitted by Member States by April 2009. It first discusses the 2008 implementation of the plans presented in the 2007 updates and the budgetary policies planned for the period 2009-2010, against the background of the current sharp economic downturn and the overall fiscal stimulus proposed in the European Economic Recovery Plan (EERP; see Box I.1.1) presented by the Commission on 26 November 2008 and endorsed in December by the European Council. The widespread increase in debt-to-GDP ratios, risks linked to contingent liabilities and implications on long term sustainability are also highlighted. At the end of this section, table I.3.2 provides an overview of the key projections and budgetary plans in the Stability and Convergence Programmes (SCP) updates and table I.3.3 gives an overview of the summary assessment and policy invitations by country in the Council Opinions adopted by April 2009.

This round of Stability and Convergence Programmes and the related assessment reflect the unprecedented burden posed on fiscal policy by the current crisis through three different channels: (i) the operation of the automatic stabilisers; (ii) the discretionary measures adopted, where appropriate, in line with the EERP; and (iii) the actions to support the financial system. Understandably, given the rapidly changing economic environment and early submission of some updates, the programmes' targets are subject to substantial downside risks linked to the generally favourable macroeconomic scenarios on which they are based. In fact, several Member States have already announced revisions of their targets for 2009 and, at least implicitly, for the subsequent years. This makes particularly challenging the assessment of countries' ability to pursue their fiscal objectives in the medium term.

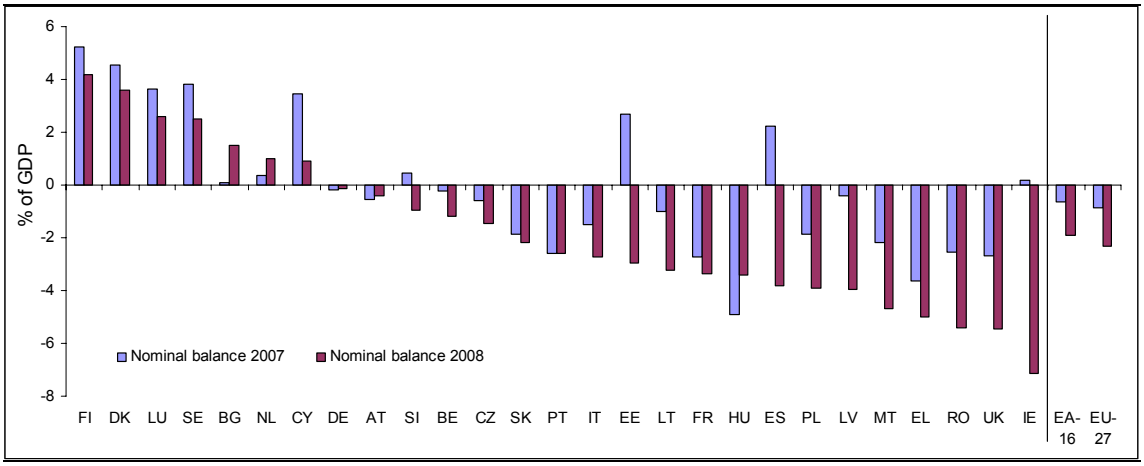
3.2. A SIGNIFICANT DETERIORATION IN PUBLIC FINANCES ONGOING SINCE 2008

On the back of the sharply worsening economic environment and the reversal of the buoyant tax elasticities recorded in the 2005-2007 period, the average nominal budget deficit increased in 2008 by 1.3 percentage points of GDP in the euro area and 1.5 percentage points in the EU as a whole, to 1.9% and 2.3% of GDP, respectively (see Graph I.3.1). This compared to a planned stabilisation envisaged, on average, in the previous updates in both the euro area and the EU27. In turn, this discrepancy materialised against the background of real GDP growth around 1½ percentage points weaker than in scenarios presented in the previous updates. With output gaps overall decreasing, although still largely in positive territory, the average structural deficit is estimated to have increased in 2008 by around 1 percentage point of GDP in both the euro area and the EU (to 2¾ and 3% of GDP respectively). ([14]) This contrast with the overall broadly unchanged structural balances in the previous updates, planned against the background of stable and, on average, essentially nil output gaps.

Looking at the outcomes for 2008 targeted in the 2007 updates, Member States were equally split among those projecting a worse budget balance outcome in 2008 than the one estimated for 2007 and those planning an improvement. However, the worsening of government balances in 2008 was generalised to a vast majority of Member States (see Graph I.3.1). Improvements were recorded only in Bulgaria, the Netherlands, Hungary and, to a lesser extent, Austria and Germany. With the exception of Bulgaria, in all these countries, the 2008 budgetary position turned out better than targeted in the previous update. The sharpest deteriorations of the nominal balances in 2008 were recorded in Ireland and Spain (7.3 and 6 percentage points of GDP, respectively). These countries, as well as France, Latvia, Malta, Greece, Hungary and the United Kingdom presented in

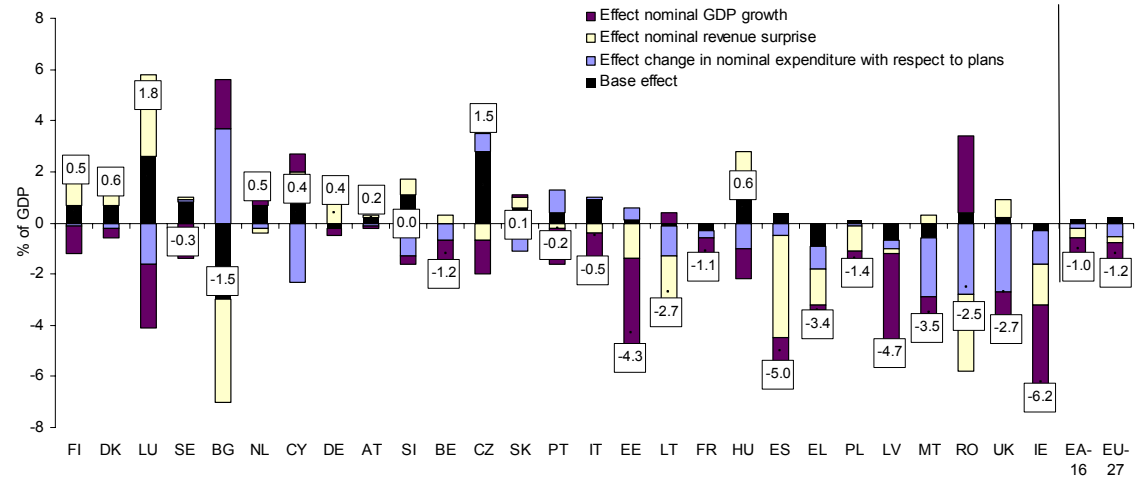
([14]) In 2008, a slightly negative output gap is estimated only in Denmark.

Graph I.3.1: **Government balances in 2007 and 2008 (% of GDP)**



Source: Commission services' spring 2009 forecast.

Graph I.3.2: **Budgetary implementation in 2008**



Notes: Countries are ranked from left to right on the basis of the 2008 budget balance outturn. The figure in the square gives the difference between the outturn of the budget balance in 2008 and the planned budget balance in the 2007 programme update.
The Graph decomposes the difference between the 2008 outturn for the general government deficit (as a percentage of GDP) in the Commission services' spring 2009 forecast (which reflects the Eurostat news release No 56/2009 of 22 April 2009) with the one targeted in the 2007 updates of the stability programmes into a base effect, a nominal GDP growth effect and nominal revenue / expenditure growth effects:
- The base effect reflects the part of the difference that is due to the actual outcome for 2007 as a percentage of GDP being different from what was estimated in the 2007 update in the programme;
- The nominal GDP growth effect represents the part of the difference that is related to current GDP growth projections for 2008 turning out higher or lower than anticipated in the 2007 update of the programme and therefore reducing / increasing the denominator of the expenditure ratio.
- The effect of the change in the nominal expenditure with respect to plans captures the part of the difference related to the annual growth rate of expenditure in 2008 turning out to be higher or lower than targeted in the 2007 update of the programme over and above the difference explained by the difference in planned versus actual GDP growth.
- Finally, revenue surprises reflects revenue-to-GDP ratio turning out different from the ones planned in the 2007 update (i.e. an elasticity of 1 between revenue and GDP growths is assumed).
Source: 2008 Stability and Convergence Programmes, Commission services' spring 2009 forecast.

their programmes government deficits above 3% of GDP in 2008, while for Romania, Poland and Lithuania the reporting of a 2008 deficit exceeding the 3% of GDP threshold in the Treaty came only with the their first 2009 notification (see Section I.2).

Comparing the 2008 updates with the plans for 2008 in the 2007 updates shows that lower-than-projected nominal GDP growth plays a substantial role in explaining the overall worse-than-planned budgetary outcomes in 2008, only slightly offset by a base effect from outturns of the budget balances better-than-estimated in the 2007 updates

(see Graph I.3.2). In a noticeable reversal of the previous years' pattern, revenue elasticity surprised, on average, on the negative side. While on average less relevant than in previous years, the effect of nominal expenditure developments differing from plans was also significant in some Member States.

3.3. FISCAL POLICY IN 2009-2010 REFLECTING DIFFERENCES IN ROOM FOR MANOEUVRE

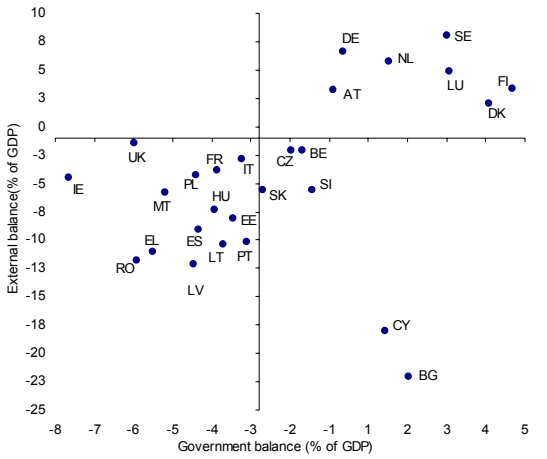
As the financial and economic crisis began to intensify considerably after the summer of 2008, the European Commission presented in November 2008 a European Economic Recovery Plan (EERP) to combat the economic downturn, which was endorsed by the European Council of December 2008. The plan calls for an immediate and co-ordinated effort to boost demand, suggesting a fiscal policy response equivalent to 1.5% of EU GDP, of which 1.2% of GDP from Member States. At the same time, the EERP acknowledges that not all Member States are in the same position. The fiscal room for manoeuvre differs – some countries have more leeway than others; in particular, as shown in Graph I.3.3, external and internal imbalances exert more pressure on some countries than others. In this respect, the EERP clearly indicates that for those Member States that are facing significant external and internal imbalances, budgetary policy should essentially aim at correcting these imbalances.

A cross-country comparison of the fiscal policy responses to falling aggregate demand, in terms of aggregate fiscal stance, highlights significant differences, which, at least in part appear linked to these discrepancies and the related countries' perceived ability to expand without facing adverse market reactions, as suggested by widening spreads on sovereign debt. Increasingly, the latter reflect also the scale of the commitment, explicit or potential, towards the financial sector.

Taking into account the size of the external and internal imbalances at the onset of the global economic crisis, Member States can be allocated to four, very tentative, groups:

(i) Countries with external surpluses that have used the good times to put their public finances on a sound footing, notably Finland, Denmark, Luxembourg, Sweden, the Netherlands, Germany and Austria. As shown in Graph I.3.4, these countries plan a significant deterioration of their budgetary position over 2009-2010, which will help limiting the downturn. ([15]) Thus, in the graph the countries are located in the lower right quadrant. The projections in the Commission services' spring 2009 forecast (Graph I.3.5), based on an unchanged policy scenario for 2010, confirm a fiscal impulse to the economy for all these Member States and highlight that it can be expected to significantly exceed plans, in view of the deterioration of the economic prospects with respect to the macroeconomic scenario in the programmes.

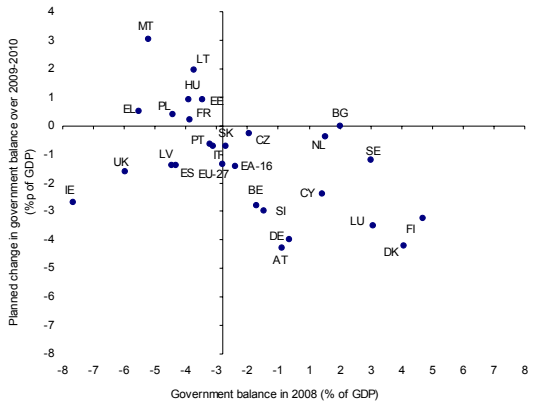
Graph I.3.3: **External and government net lending in 2008 in the Commission services' spring 2009 forecast**



Note: Axes of the graphs are set on the 2008 average government and external balances in the EU27
Source: Commission services' spring 2009 forecast.

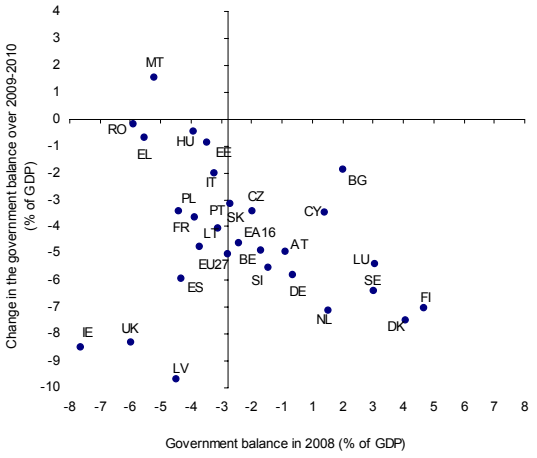
([15]) Also due to an early submission of the update, the underestimation of the worsening of the government balance due to the economic downturn in the Stability Programme of the Netherlands is particularly substantial. In the April 2009 fiscal notification, the budgetary target for 2009 was revised down to a deficit of 3.3% of GDP.

Graph I.3.4: **Planned change of government balance in 2010 with respect to 2008, according to the Stability and Convergence Programmes**



Source: Stability and Convergence Programmes, Commission services' spring 2009 forecast. Y-axis is set on the average budget balance in the EU27 in 2008 in the Commission services' spring 2009 forecast.

Graph I.3.5: **Projected change of government balance in 2010 with respect to 2008 in the Commission services' spring 2009 forecast**



Source: Commission services' spring 2009 forecast. Y-axis is set on the average budget balance in the EU27 in 2008.

(ii) Countries with a budgetary surplus, but a significant external deficit (Cyprus), or with a somewhat less comfortable starting budgetary position, however still better than the EU average and with no (Belgium, Czech Republic) ([16]) or relatively limited external imbalances (Slovenia). Also these Member States are implementing counter-cyclical fiscal policy

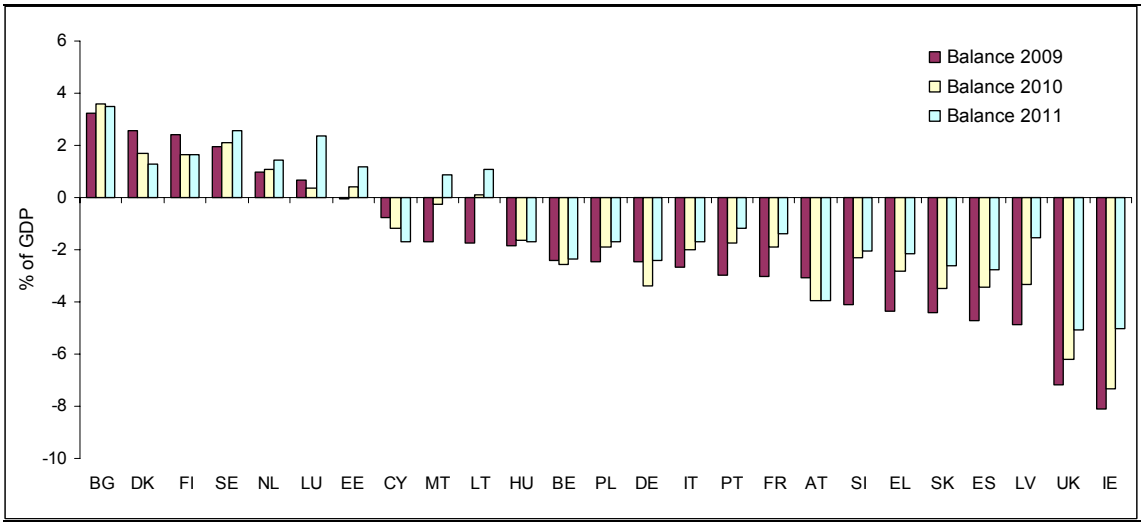
(iii) Countries that adopted sizeable fiscal stimulus measures in line with the EERP, but from a starting position of high government deficit in 2008. Some of these Member States recorded in 2008 a government a deficit in excess of the 3% of GDP threshold, notably the United Kingdom, Poland, Spain and France. ([17]) With a deficit above the EU average, although still below 3% of GDP in 2008, Portugal is also included in this group.

(iv) Countries that in view of a high government debt ratio and/or external deficit have planned a restrictive or neutral budgetary stance in 2009 and beyond. The size and degree of imbalances characterising Member States in this group vary significantly. Italy has a high government debt, but, because of a relatively sound financial position of the private sector, no major external imbalances. Greece has both a high government debt ratio and a high external deficit. Ireland has a still relatively low government debt, but very high deficits and high contingent liabilities linked to the rescue packages for the financial sector. Hungary is receiving medium-term financial assistance. Finally, this group includes countries with very different combinations of absence of fiscal room, limited access to finance and high external imbalances.

([16]) In February 2009, the Czech Republic introduced a second package of stimulus measures that is not reflected in plans in the Convergence Programme.

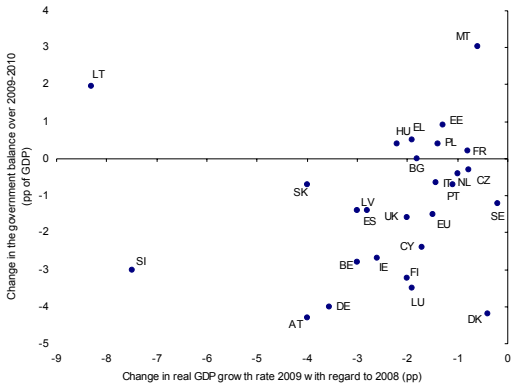
([17]) On 4 March 2009, the French Government revised the deficit projections with respect to the figures presented in the Stability Programme, to 5.6% in 2009, 5.2% in 2010, 4.0% in 2011 and 2.9% in 2012.

Graph I.3.8: **Estimated structural balances in the Stability and Convergence Programmes updates**



Source: Stability and Convergence Programme updates and Commission services.

Graph I.3.6: **Change in real GDP growth rate 2009 with respect to 2008 and change in the government balance over 2009-2010 in the Stability and Convergence Programmes**

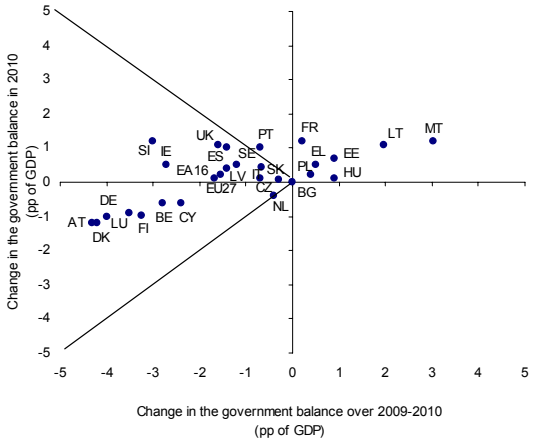


Source: Stability and Convergence Programmes, Commission services.

The different constraints to fiscal policy are reflected in a lack of correlation between the projected economic outlook in the programme and the budgetary targets (Graph I.3.6).

3.4. CONSOLIDATION PLANNED TO BEGIN IN 2010

Graph I.3.7: **Changes in government net lending in the EU27 Member States in 2010 and over the whole 2009-2010 period**



Source: Stability and Convergence Programmes, Commission services.

While only a few Member States target an improvement of the government balance in 2009, Graph I.3.7 shows that a majority of countries plans a consolidation, also in nominal terms, in 2010. For countries already consolidating in 2009, the size of the planned consolidation for 2010 tends to be comparable to that of the previous year. Countries reacting to a deterioration in the budgetary balance in 2009 plan to roughly offset half of it in the following year. Only a small group

of countries, generally enjoying robust starting budgetary and external positions, envisages a further increase in deficits in 2010, which, however, is planned to be lower than that registered in 2009.

By contrast, at unchanged policy, the Commission services' spring 2009 forecast projects both the headline and the structural deficit to continue deteriorating in 2010, both in the euro area and in the EU as a whole. As for 2011, the estimated structural balances planned in the Stability and Convergence Programmes show that nearly all Member States (the only significant exceptions being Finland and Denmark) plan to undertake a structural adjustment, although, clearly, only a minority of Member States expects to achieve their medium-term objectives (MTO) by that year. Moreover, the discrepancy highlighted above between plans in the Stability and Convergence Programmes and the unchanged policy forecast by the Commission services suggests that the gap relative to the MTO will be much larger.

Generalised substantial changes to the structural figures can be expected not only in view of changes in nominal balances projections, but also due to the likely further downward revision of potential output estimates in the face of rapid drop in investments, employment and substantial changes in the NAIRU's estimates.

3.5. DEBT DEVELOPMENTS AND SUSTAINABILITY ASSESSMENTS

In 2008, the EU and euro-area average government debt-to-GDP ratios increased to 61½% and 69¼%, respectively. The debt ratio exceeded the 60% reference value in nine Member States (Austria, Malta, Portugal, Germany, France, Hungary, Belgium, Greece, and Italy). According to the Stability and Convergence Programmes, the debt ratio is planned to increase further in 2009, both in the euro area and in the EU as whole. It would continue rising in 2010 and in 2011 it would broadly stabilize in the EU as a whole, while remaining on an increasing path in the euro area. Particularly high increases of the debt ratio over 2009-2011 are planned for Latvia, Ireland, Spain and the UK (see Graph I.3.9). Debt is planned to breach the 60% of GDP threshold in 2009/2010 in the UK and in 2010 in Ireland.

Planned rises in debt reflect the worsening of the budgetary position, the projected negative real GDP growth and lower inflation resulting in a smaller snow-ball effect. Still larger increases in debt are projected on an unchanged policy basis by Commission services' spring 2009 forecast, which projects the debt ratio to reach around 84% and 79% in 2010, in the euro area and in the EU, respectively.

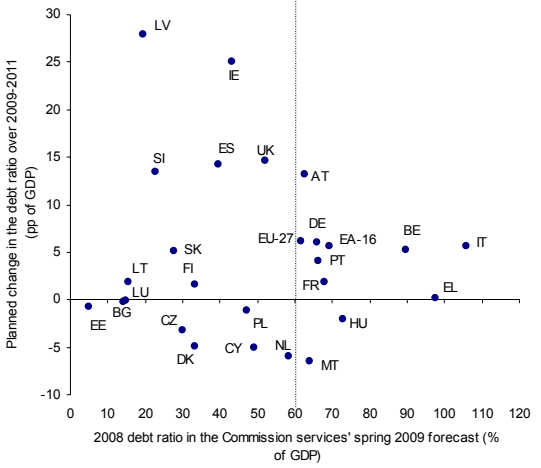
The overall rise in the debt ratio in 2008 also reflected a sizeable stock-flow adjustment (1.3% for EU-27 and 3.5% for the euro area) that mostly resulted from capital injections as part of financial market rescue operations and of other accumulation of financial assets aimed at strengthening the financial system. In 2008, below the line operations were particularly sizeable in the Netherlands, Luxembourg, Ireland, Denmark, Hungary and Belgium. Table I.3.1 presents the measures put in place by Member States to support the financial system in percent of GDP. While recapitalisation measures have an immediate impact on the debt, this is not the case of guarantees (which represents commitments) and liquidity support schemes (see Section II.1).

Table I.3.1: **Bank rescue packages**

	Recapitalisation		Guarantee on bank liabilities		Relief of impaired asset		Liquidity and bank funding support		Total	
% of GDP	Total measures approved	Effective capital injections	Total measures approved	Guarantees granted	Total measures approved	Effective asset relief	Total measures approved	Effective liquidity interventions	Total measures approved	Total effective for all measures
EA-16	2.6	1.4	20.6	8.3	12.0	0.7	1.3	0.7	**36.5**	**11.1**
EU-27	2.6	1.5	24.7	7.8	12.0	0.5	4.3	3.0	**43.6**	**12.8**

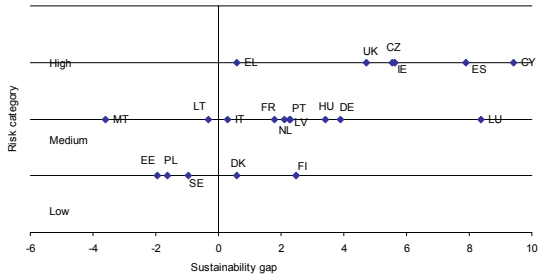
S***ource:*** Commission services.

Graph I.3.9: **Debt ratios in the EU27 Member States in 2008 and developments planned over the whole 2009-2011 period**



Source: Stability and Convergence Programmes, Commission services' spring 2009 forecast.

Graph I.3.10: **Overall risk classification and the sustainability gap (S2 in the '2008' scenario)**



Source: Stability and convergence programme updates and Commission services.

Concerning the assessment of long-term sustainability,([18]) according to the conventional risk classification the significant deterioration in the structural budgetary position occurred in 2008 entailed a downgrading of Ireland, Spain and the UK from medium to high risk, as well as of Latvia and Lithuania, from low to medium risk (Graph I.3.10).

([18]) The prime indicator for all assessments is S2 calculated for the "2008 scenario" (i.e. based on the budgetary position 2008). The S2 indicator is defined as the change in the current level of the structural primary balance required to make sure that the discounted value of future structural primary balances (including the path of property income) covers the current level of debt. The assessment of the 2008 updates of the stability and convergence programmes was still based on the 2006 ageing projections. However, in the second half of 2009, the European Commission will release a report on the long-term sustainability of public finances in the European Union based on the updated projections released on 29 April 2009 in 2009 Ageing Report economic and budgetary projections for the EU-27 Member States (2008-2060).

Table I.3.2: Budgetary developments according to the 2008-2009 Stability and Convergence Programme updates

	Real GDP growth				Government balance				Structural balance				Government gross debt			
	2007	2008	2009	2010	2007	2008	2009	2010	2007	2008	2009	2010	2007	2008	2009	2010
BE	2.8	1.1	-1.9	0.6	-0.2	-1.2	-3.4	-4.0	-1.3	-2.0	-2.4	-2.6	84.0	89.6	93.0	95.0
DE	2.5	1.3	-2¼	1¼	-0.2	-0	-3	-4	-0.9	-0.8	-2.5	-3.4	65.1	65½	68½	70½
IE	6.0	-1.4	-4.0	-0.9	0.2	-6.3	-9.5	-9.0	-1.7	-6.2	-8.1	-7.4	24.8	40.6	52.7	62.3
EL	4.0	3.0	1.1	1.6	-3.5	-3.7	-3.7	-3.2	-4.4	-4.5	-4.3	-2.8	94.8	94.6	96.3	96.1
ES	3.7	1.2	-1.6	1.2	2.2	-3.4	-5.8	-4.8	1.6	-3.5	-4.7	-3.4	36.2	39.5	47.3	51.6
FR (1)	2.2	1.0	0.2	2.0	-2.7	-2.9	-3.9	-2.7	-2.9	-2.6	-3.0	-1.9	63.9	66.7	69.1	69.4
IT	1.5	-0.6	-2.0	0.3	-1.6	-2.6	-3.7	-3.3	-2.5	-2.9	-2.7	-2.0	104.1	105.9	110.5	112.0
CY	4.4	3.8	2.1	2.4	3.4	1.0	-0.8	-1.4	3.4	0.7	-0.8	-1.2	59.4	49.3	46.8	45.4
LU	5.2	1.0	-0.9	1.4	3.2	2.0	-0.6	-1.5	1.6	1.5	0.6	0.4	7.0	14.4	14.9	17.0
MT	3.7	2.8	2.2	2.5	-1.8	-3.3	-1.5	-0.3	-2.4	-3.7	-1.7	-0.2	62.2	62.8	61.9	59.8
NL	3.5	2¼	1¼	2	0.3	1.2	1.2	0.8	-0.1	0.8	1.0	1.1	45.7	42.1	39.6	38.0
AT	3.1	1.8	-2.2	0.5	-0.5	-0.4	-3.5	-4.7	-1.7	-1.6	-3.1	-3.9	59.4	62.5	68.5	73.0
PT	1.9	0.3	-0.8	0.5	-2.6	-2.2	-3.9	-2.9	-2.7	-2.0	-3.0	-1.8	63.6	65.9	69.7	70.5
SI	6.8	3.5	-4.0	1.0	0.5	-0.9	-5.1	-3.9	-1.6	-2.9	-4.1	-2.3	23.4	22.8	30.5	34.1
SK	10.4	6.4	2.4	3.6	-1.9	-2.2	-3	-2.9	-4.2	-3.8	-4.4	-3.5	29.4	27.6	31.4	32.7
FI	4.5	2.6	0.6	1.8	5.3	4.4	2.1	1.1	4.5	3.7	2.4	1.7	35.1	32.4	33.0	33.7
EA-16	2.7	1.0	-1.2	1.2	-0.7	-1.6	-3.4	-3.3	-1.3	-2.0	-2.7	-2.4	66.1	67.8	71.4	73.1
BG	6.2	6.5	4.7	5.2	0.1	3.0	3.0	3.0	2.9	2.6	3.2	3.6	18.2	15.4	15.4	15.3
CZ	6.6	4.4	3.7	4.4	-1.0	-1.2	-1.6	-1.5	-1.7	-1.9	-1.7	-1.3	28.9	28.8	27.9	26.8
DK	1.6	0.2	-0.2	0.7	4.5	3.0	0.0	-1.2	3.7	4.0	2.6	1.7	26.3	30.3	27.9	26.3
EE	6.3	-2.2	-3.5	2.6	2.7	-1.9	-1.7	-1.0	-0.1	-2.4	-0.1	0.4	3.5	3.7	3.7	3.5
LV	10.3	-2.0	-5.0	-3.0	0.1	-3.5	-5.3	-4.9	-3.3	-5.1	-4.9	-3.3	9.5	19.4	32.4	45.4
LT	8.9	3.5	-4.8	-0.2	-1.2	-2.9	-2.1	-1.0	-2.6	-4.9	-1.8	0.1	17.0	15.3	16.9	18.1
HU	1.1	1.3	-0.9	1.6	-5.0	-3.4	-2.6	-2.5	-4.9	-3.5	-1.8	-1.6	65.8	71.1	72.5	72.2
PL	6.7	5.1	3.7	4.0	-2.0	-2.7	-2.5	-2.3	-2.5	-3.1	-2.5	-1.9	44.9	45.9	45.8	45.5
RO	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SE	2.7	1.5	1.3	3.1	3.6	2.8	1.1	1.6	2.2	2.8	1.9	2.1	40.6	35.5	32.2	28.3
UK (1) (2)	3	-¼	-½	2	-2.8	-5.5	-8.2	-7.1	-3.2	-5.3	-7.2	-6.2	43.2	52.9	60.5	65.1
EU-27 (3)	3.0	1.1	0.1	1.5	-0.9	-2.0	-3.8	-3.5	-1.5	-2.3	-3.1	-2.7	58.6	61.4	65.4	67.2

(1) Data from the low-growth scenario in the programme.
(2) Financial years ending in following March.
(3) EU aggregates relative to the 2008 programmes' updates do not reflect data for RO, due to lack of information on the programme of this Member State.
Source: Commission services.

Table I.3.3: **Overview of the Council Opinions on the SCPs – Summary assessments and policy invitations**

BG	**SUMMARY ASSESSMENT:** The overall conclusion is that the programme aims at maintaining a sound budgetary position throughout the period, reflected in the planned high general government surpluses. The structural measures foreseen in response to the economic slowdown aim at strengthening the economy's growth potential and are in line with the EERP. Subject to the downside risks stemming from the uncertainty at the current economic juncture and its impact on revenues, the budgetary stance would imply that the medium-term objective of 1,5% of GDP surplus would be achieved throughout the programme period. Bulgaria faces the challenge of sustaining growth in a severe and protracted global economic downturn. Moreover the country should implement firm policies to correct the large external deficit, including through maintaining a tight fiscal policy and containing public sector wage growth. In addition, the country is confronted with the need to improve the quality of public expenditure by improving administrative capacity and stepping up structural reforms. **POLICY INVITATIONS:** In view of the above assessment and also given the need to ensure sustainable convergence, Bulgaria is invited to: (i) continue pursuing tight fiscal policies and maintaining a sound fiscal position by restraining expenditure growth, with a view to helping contain existing external imbalances and counteract possible revenue shortfalls; (ii) contain public sector wage growth in order to contribute to overall wage moderation and improve competitiveness; (iii) further strengthen the efficiency of public spending, in particular through full implementation of programme budgeting, reinforced administrative capacity and reforming the areas of labour and product markets, education and healthcare in order to increase productivity.
CZ	**SUMMARY ASSESSMENT:** The overall conclusion is that government deficit in the Czech Republic over recent years has been relatively low, while the debt ratio has been below 30% of GDP, thus clearly below the 60 % reference value. The mildly expansionary fiscal stance, including stimulus measures, appears appropriate in light of the economic downturn and in line with the EERP, however, will affect public finances. Moreover, there are risks attached to the budgetary projections, in particular in view of the favourable growth assumptions, the lack of concrete actions to support the planned expenditure reductions from 2009, and a track record of exceeding expenditure ceilings set in the medium-term budgetary framework. Due to a rapidly aging population, concerns remain regarding the long-term fiscal sustainability. Overall, these risks point to the need for medium-term fiscal consolidation and further efforts in structural reforms. **POLICY INVITATIONS:** In view of the above, and also given the need to ensure sustainable convergence, the Czech Republic is invited to: (i) implement the 2009 fiscal plans, including stimulus measures, in line with the EERP and within the framework of the SGP; (ii) carry out significant structural consolidation in 2010 and beyond towards the MTO, and back-up the budgetary strategy with specific measures for reducing expenditure in 2010-2011; (iii) continue with the necessary pension and health care reforms, given the projected increase in age-related expenditures, in order to improve the long-term sustainability of public finances.
DK	**SUMMARY ASSESSMENT:** The overall conclusion is that, at the current juncture and given the comfortable fiscal position, the overall fiscal stance is considered adequate in view of the discretionary fiscal expansion of around 1 percentage point of GDP in 2009 and in view of the relatively strong automatic stabilisers. The programme foresees a reduction in the general government surplus by around 3 percentage points of GDP in 2009 and about 1,25 percentage point further in 2010. The programme's growth assumptions are favourable. The fiscal policy aims to continue to achieve the MTO, being consistent with the objective of long-term sustainability throughout the programme period, thus maintaining a sufficient safety margin to the reference value. Following a period of high budgetary surpluses, benefiting from a relatively strong fiscal framework, general government gross debt has declined to a low level. **POLICY INVITATIONS:** In view of the above assessment, Denmark is invited to: (i) implement the fiscal plans for 2009, including the stimulus measures; in line with the EERP and within the framework of the Stability and Growth Pact; (ii) identify the required structural reform measures; notably aiming at strengthening labour supply, in order to achieve budgetary targets in the outer years.
DE	**SUMMARY ASSESSMENT:** The overall conclusion is that benefiting from earlier consolidation and the achievement of a close-to-balance position in 2008, Germany was able to introduce a sizeable fiscal stimulus. This is welcome as it is commensurate with the scale of the economic downturn. Given the sharp deterioration in the global economic environment and distress in the financial sector, the budgetary strategy is subject to downside risks. Full reversibility of the short-term measures adopted in response to the crisis is however currently not ensured. Hence, the implementation of an enhanced medium-term budgetary framework as currently envisaged and the strong commitment at all levels of government to adhere to it will be crucial to return to fiscal consolidation once the crisis has abated. Given increasing public debt, ad hoc changes to the pension adjustment formula and uncertainty as to the impact of the health-care reform, preserving the achievements made to improve long-term sustainability is critical.

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	POLICY INVITATIONS: In view of the above assessment, Germany is invited to: (i) implement the 2009 and 2010 fiscal policy as planned including stimulus measures in line with the EERP and within the framework of the SGP, reverse the fiscal stimulus in order to support significant budgetary consolidation towards the MTO, starting in 2011 at the latest; (ii) to this end strengthen the institutional fiscal framework by implementing the new budgetary rule as currently envisaged in order to underpin the necessary consolidation course after 2010; (iii) give renewed attention to measures strengthening the long-term sustainability of public finances and ensure that the deviation from the pension adjustment formula in 2008 is reversed as envisaged.
IE	**SUMMARY ASSESSMENT:** The overall conclusion is that, following a very sharp deterioration in 2008, the general government deficit will widen further in 2009, to 9,5 % of GDP. The fiscal consolidation measures and the measures to support the economy can be regarded as welcome and adequate given the high deficit and sharply increasing debt position and are in line with the European Economic Recovery Plan. After the budgetary deterioration in 2009, the programme envisages a reduction of the deficit below the 3 % of GDP reference value by 2013, while debt would breach the 60 % of GDP reference value from 2010. This would take place against the background of a rapid recovery of economic activity after 2010. The budgetary outcomes are subject to downside risks throughout the programme period, mainly due to (i) the lack of information on the envisaged consolidation measures after 2009; and (ii) the favourable macro-economic outlook especially in the outer years of the programme. Further risks stem from the measures in place to support the financial sector. There is a need to regain competitiveness through measures enhancing productivity growth and adequate wage policies. A reduction of the headline deficit below 3 % of GDP by 2013, as envisaged in the programme, will require addressing the significant risks to the budgetary targets and standing ready to adopt additional measures if necessary. Also with a view to improving the long-term sustainability of public finances, the fiscal consolidation plans should be backed up with measures. **POLICY INVITATIONS:** In view of the above assessment Ireland is invited to: (i) limit the widening of the deficit in 2009 and specify and rigorously implement substantial annual efforts within a broad-based fiscal consolidation programme for 2010 and beyond; (ii) in order to limit risks to the adjustment, strengthen the binding nature of the medium-term budgetary framework as well as closely monitor adherence to the budgetary targets throughout the year; (iii) in view of the significant projected increase in age-related expenditure, and also of the increase in debt, albeit from a low level, expected over the programme period, improve the long-term sustainability of public finances by implementing further pension reform measures in addition to pursuing fiscal consolidation.
EE	**SUMMARY ASSESSMENT:** The overall conclusion is that Estonia, while facing a severe economic downturn following years of above-potential economic growth, is planning a restrictive fiscal stance from 2009 until 2011 which is an appropriate response in light of the existing imbalances. The economic downturn is being aggravated by the global financial crisis and subdued external demand. Weakened cost competitiveness, in particular due to the prolonged period of wage growth above that of productivity, also hinders the return to a sustainable growth path. The general government balance deteriorated considerably in 2008 and turned to deficit, following six years of surpluses. According to the programme the general government is expected to be in deficit also in 2009 and 2010, with the deficit gradually declining. Taking into account macro-economic risks and the lack of information on expenditure-based consolidation in 2010, the budgetary outcomes are subject to downside risks, with the headline deficit possibly exceeding the 3% threshold in 2009 and 2010. However, the risks to the budgetary outcome are mitigated by the adoption of the supplementary restrictive budget in February 2009. **POLICY INVITATIONS:** In view of the above assessment and also given the need to ensure sustainable convergence and a smooth participation in ERM II, Estonia is invited to: (i) implement the consolidation of public finances in the short term, ensure keeping the general government deficit below 3 % of GDP and take necessary measures to underpin the consolidation in the medium term; (ii) implement prudent public sector wage policies to support the adjustment of the economy and to strengthen competitiveness;

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	(iii) reinforce the medium-term budgetary framework, particularly by improving expenditure planning and efficiency.
EL	**SUMMARY ASSESSMENT:** The overall conclusion is that the programme envisages reducing the budget deficit over the medium term, but falls short to address timely and effectively the structural imbalances of the Greek economy and reverse the upward trend of public debt. Although the consolidation strategy beyond 2009 relies on permanent expenditure restraint and increasing tax revenues, the programme does not spell out concrete measures to back fully the planned budgetary adjustment in 2010 and 2011. Moreover, against the background of a sharp deterioration in the global economic environment, the budgetary strategy is also subject to significant downside risks, with the growth assumptions underlying the macro-economic scenario of the programme being favourable. Consolidation relies to some extent on the results from the fight against tax Strengthening the fiscal consolidation path, based on permanent measures to control current primary expenditure including public wages, would be paramount to achieve sound and sustainable public finances in Greece. Moreover, the envisaged adjustment in the programme is only partly supported by structural policies to improve the quality of public finances. The structural nature of the factors underlying competitiveness losses and the widening external imbalances urgently requires the implementation of bold structural reforms. In the long term, the level of debt which remains among the highest in the EU, coupled with the projected increase in age-related spending, will also affect negatively the long term sustainability of public finances. **POLICY INVITATIONS:** In view of the above assessment, Greece is invited to: (i) strengthen significantly the fiscal consolidation path already in 2009, through well-specified permanent measures curbing current expenditure, including a prudent public sector wage policy, thereby contributing to a necessary reduction in the debt-to-GDP ratio; (ii) ensure that fiscal consolidation measures are also geared towards enhancing the quality of public finances, within the framework of a comprehensive reform programme, in the light of the necessary adjustment of the economy, with a view to recovering competitiveness losses and addressing the existing external imbalances; (iii) implement swiftly the policies to reform the tax administration and further improve the functioning of the budgetary process by increasing its transparency, spelling out the budgetary strategy within a longer time perspective and set up mechanisms to monitor, control and improve the efficiency of primary current expenditure; (iv) in view of the mounting level of debt and the projected increase in age-related expenditure, improve the long-term sustainability of public finances, by continuing the on-going reforms in the healthcare and pension system. Greece is also urged to improve statistical governance and the quality of its statistical data, and invited to improve compliance with the data requirements of the code of conduct.
ES	**SUMMARY ASSESSMENT:** The overall conclusion is that the sharp slowdown of economic activity and some discretionary measures led to a deficit above 3 % of GDP in 2008, after a prolonged period in which the Spanish public finances were close to balance or in surplus. The updated stability programme aims at a significant fiscal impulse in 2009 in line with the EERP to counteract the continued slowdown in economic activity. This will lead to a widening of the government deficit, while the debt ratio remains comfortably below 60 % of GDP. Improving long-term fiscal sustainability should be a priority. The favourable macroeconomic assumptions may imply a lower contribution of economic growth to fiscal consolidation than envisaged in the programme, while the adjustment path is not fully backed up with concrete measures. In addition, fostering the quality of public finances is important also with a view to underpinning a smooth adjustment of the economy in the light of the imbalances it is faced with. **POLICY INVITATIONS:** In view of the above assessment, Spain is invited to: (i) implement the 2009 fiscal policy as planned in line with the EERP and within the framework of the SGP, while avoiding a further deterioration of public finances in 2009, and carry out with determination significant structural consolidation in 2010 and beyond, backing it up with measures; (ii) improve the long-term sustainability of public finances by implementing further measures aimed at curbing the increase in age-related expenditure; (iii) ensure that fiscal consolidation measures are also geared towards enhancing the quality of the public finances as planned in the light of the needed adjustment of existing imbalances.
FR	**SUMMARY ASSESSMENT:** The overall conclusion is that the insufficient progress when economic conditions were more favourable and the deterioration of the economic situation, especially in the last quarter of 2008, led to a deficit slightly above 3% of GDP in 2008. In order to counteract the strong economic downturn the government adopted a recovery plan in line with the EERP which is well targeted, temporary and timely. This temporary fiscal expansion, coupled with the strong economic downturn will lead to a further widening of the government deficit in 2009. Thereafter, the programme foresees a consolidation of public finances through a restrictive stance, especially in 2010. Risks are linked, in particular, to the markedly favourable macro-economic assumptions in the programme and the current uncertain environment, but they also reflect the non-binding character of expenditure rules. Further consolidation efforts may therefore become necessary in the outer years as the economy strengthens. The structural reforms already adopted are expected to contribute to increasing potential growth, improving competitiveness and sustaining the consolidation process.

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	POLICY INVITATIONS: In view of the above assessment, France is invited to: (i) implement the fiscal measures in 2009 as planned, including stimulus measures in line with the EERP and within the framework of the SGP while maintaining the objective of avoiding a further deterioration of public finances; (ii) in light of the forecast pick-up of economic activity, make a consolidation effort in 2010 and strengthen the pace of adjustment thereafter in order to ensure that the deficit is brought rapidly below the reference value, thereby setting the debt-to-GDP ratio on a declining path; (iii) effectively enforce existing expenditure rules and take further steps in order to guarantee the respect of the multi-annual expenditure reduction targets of the general government by all sub-sectors and continue to implement measures in the context of the General Review of Public Policies. Implement the structural reform programme, in particular as regards the sustainability of the pension system.
IT	**SUMMARY ASSESSMENT:** The overall conclusion is that fiscal policy and the economic recovery package for 2009 are in line with the European Economic Recovery Plan (EERP) and can be regarded as adequate in view of the very high debt ratio. Reflecting the strong economic downturn associated with the financial crisis, the headline deficit is expected to increase significantly in 2009 to above the 3 % of GDP reference value. In 2010 and 2011, the programme foresees an expenditure-based adjustment, which would bring the deficit just below 3 % of GDP in 2011. However, the achievement of the deficit targets throughout the programme period might be hampered as economic growth could be even lower than planned. In addition, possible slippages in the implementation of the planned restraint in primary expenditure may materialise, even though the improved fiscal framework enhances the conditions for fiscal discipline and spending efficiency. The debt ratio is set to increase from 104,1 % of GDP in 2007 to over 111 % of GDP by the end of programme period. The gross debt ratio might increase further also as a result of possible capital injections into the banking sector. Finally, important structural weaknesses still hamper sustained productivity growth in Italy and weigh on its external competitive position, while the current composition of social spending is not supportive of adjustment in the labour market. **POLICY INVITATIONS:** In view of the above assessment, Italy is invited to: (i) implement the planned fiscal policy for 2009 and carry out with determination the adjustment path planned over the programme period in order to set the very high debt ratio on a steadily declining path and ensure the long-term sustainability of public finances; (ii) continue the progress made to improve fiscal governance and the work on a new framework for fiscal federalism that ensures the accountability of local governments and underpins fiscal discipline; (iii) pursue efforts to improve the quality of public finances by focussing on spending efficiency and composition, also by reallocating social expenditure so as to create room for a more comprehensive and uniform unemployment benefit system that ensures appropriate work incentives and effective activation policies, without compromising the fiscal consolidation process.
CY	**SUMMARY ASSESSMENT:** The overall conclusion is that fiscal stance in 2009 will be expansionary due to the adoption of significant stimulus measures in 2009 in line with the EERP. In the subsequent years, the fiscal balance is projected to continue worsening. The implied fiscal loosening does not appear justified in view of the relatively good economic prospects and the existence of a large external imbalance. Moreover, against the background of a sharp deterioration in the global economic environment, the budgetary strategy is subject to significant downside risks, with the growth assumptions underlying the macroeconomic scenario of the programme being favourable. In the light of the high external imbalances, maintaining prudent policies and strengthening fiscal sustainability should be a major priority. Therefore, controlling current expenditure and avoiding procyclicality represents a major challenge for the fiscal policy in Cyprus. In addition, fostering the quality of public finances is important also with a view to underpinning a smooth adjustment of the economy in the light of the imbalances it is faced with. **POLICY INVITATIONS:** In view of the above assessment, Cyprus is invited to: (i) Implement the 2009 fiscal policy as planned in line with the EERP and within the framework of the SGP, while avoiding further deterioration of public finances in 2009 compared to the target; (ii) Reverse the projected increase of the fiscal deficit in 2010 and beyond, by limiting the increase in expenditures in order to ensure a sound fiscal position in the medium term; (iii) In view of the projected impact of ageing on government expenditure, strengthen the long-term sustainability of public finances by pursuing the reform of the pension and health care systems.

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LV	**SUMMARY ASSESSMENT:** The overall conclusion is that Latvia, while facing a severe economic downturn following years of above potential economic growth, is planning a restrictive fiscal stance in 2009 and until 2011, which is an adequate response to the economic situation considering the absence of scope for fiscal manoeuvre and the need to correct economic imbalances. The global financial crisis has amplified the shock of the reversal of Latvia's own lending and house price boom by tightening credit availability and conditions, reinforcing the steep decline of domestic demand over the course of 2008. The concomitant downturn on export markets has hit the relatively small tradable sector, already weakened by huge domestic cost increases over the previous years. The headline deficit exceeded the 3 % of GDP Maastricht Treaty. Taking into account risks of lower demand and output in 2009 and lack of information underpinning the revenue-based consolidation in 2010 and 2011, the budgetary outcome could be worse than projected in the programme. **POLICY INVITATIONS:** In view of the above assessment, the commitments made in the framework of international financial assistance, and also given the need to ensure sustainable convergence and a smooth participation in ERM II, Latvia is invited to: (i) implement fully the planned consolidation in the supplementary budget adopted on 12 December 2008; submit to Parliament by the end of March 2009 the details of the supplementary budget; take sufficient further measures to achieve the targeted general government deficit in 2009 and continue the targeted fiscal consolidation thereafter; (ii) rigorously implement public sector nominal wage reductions to facilitate the alignment of whole economy wages with productivity, thereby improving cost competitiveness; (iii) strengthen fiscal governance and transparency, by improving the medium-term budgetary framework and reinforcing Ministry of Finance spending controls, and strengthen financial market regulation and supervision; (iv) strengthen the supply side of the economy by wide-ranging structural reforms and by making efficient use of available EU structural funds.
LT	**SUMMARY ASSESSMENT:** The overall conclusion is that Lithuania is currently facing a severe contraction in domestic demand following years of above-potential economic growth. The deepening global financial crisis and weakening external demand contribute to aggravating the contraction of the economy. For a sustained period wage growth has exceeded productivity growth by far, thus weakening the country's competitiveness hindering prospects of export-led economic recovery. The general government balance deteriorated considerably in 2008 mainly reflecting an expansionary fiscal policy. The programme targets a deficit of 2,1 % of GDP in 2009 and a gradual decline in the headline deficit thereafter to a balanced position in 2011. Taking into account the risks related to the macro-economic scenario and the lack of information on measures needed to underpin fiscal consolidation after 2009, the budgetary outcomes in the programme are subject to significant downside risks, with the headline deficit possibly exceeding the 3 % of GDP threshold in 2009 and 2010, while the debt ratio will remain very comfortably below the 60 % of GDP reference level. The planned restrictive fiscal stance from 2009 until 2011 is an appropriate response in the light of existing imbalances. The current budgetary framework is rather weak as regards medium-term planning and control of public finances, especially in terms of expenditure. **POLICY INVITATIONS:** In view of the above assessment and also given the need to ensure sustainable convergence and a smooth participation in ERM II, Lithuania is invited to: (i) implement measures needed to achieve the budgetary target in 2009 by prioritising expenditures and continue targeted fiscal consolidation in the medium-term; (ii) implement public sector wage restraint to facilitate the alignment of whole-economy wages with productivity and to strengthen cost competitiveness; (iii) strengthen fiscal governance and transparency, by enhancing the medium-term budgetary framework and reinforcing expenditure discipline.
LU	**SUMMARY ASSESSMENT:** The overall conclusion is that, in view of the sound budgetary starting position, the measures decided in response to the downturn and presented in the addendum to the stability programme are appropriate and should be welcomed. They are generally in line with the principles (timely, targeted and temporary) of the European Economic Recovery Plan, even though the cuts in income tax, which were decided before the aggravation of the crisis, are not planned to be temporary. Due to the projected sharp economic downturn and to the measures decided in response to the downturn, the government balance will turn into a deficit in 2009, after several years in surplus, but it will remain far from the 3 % reference value and the medium-term objective is planned to be respected throughout the programme period. Risks to the programme's budgetary targets seem broadly balanced. However, concerns remain about the long-term sustainability of public finance, which will have to bear a particularly heavy burden in the coming decades as the increase in age-related public expenditure is projected to be among the strongest in the whole EU.

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	POLICY INVITATIONS: In view of the above assessment and of the very strong increase in age-related expenditure forecast for the coming decades, Luxembourg is invited to: (i) implement the fiscal plans, including the stimulus measures in line with the EERP and within the framework of the SGP; (ii) improve the long-term sustainability of its public finances by implementing structural reform measures, in particular in the area of pensions.
HU	**SUMMARY ASSESSMENT:** The overall conclusion is that, in spite of distinct improvements in its high imbalances, including the reduction in the budget deficit from 9,3 % of GDP in 2006 to below 3,5 of GDP in 2008, Hungary has been particularly exposed to the financial crisis and thus had to limit the financing need of the government rather than stimulate the economy during the economic downturn. In this context, it adopted a policy of further fiscal adjustments and tighter deficit targets to restore investor confidence. This strategy has been backed by international financial assistance from the EU, the IMF and the World Bank. The programme foresees a continuation of the front-loaded consolidation strategy, with another important adjustment in 2009 to 2,6 % of GDP, and followed by a more moderate adjustment path towards a budget deficit of 2,2 % of GDP by 2011. However, this deficit reduction path is subject to risks, especially since the macro-economic assumptions underlying the programme have in the meantime become markedly favourable. This risk would be substantially reduced by the corrective measures adopted and structural steps recently announced by the Government together with the revision of the 2009 deficit target slightly upwards to 2,7-2,9 % of GDP. Moreover, the adoption of the law on fiscal responsibility is an important step towards establishing prudent fiscal policy and, if implemented with determination, should contribute to the durability of the fiscal consolidation. Nevertheless, the sustainability of public finances also hinges on the continuation of structural reforms, to the extent that they increase long term growth, help meet budgetary targets, and reduce the country's vulnerabilities. **POLICY INVITATIONS:** In view of the above assessment, Hungary is invited to: (i) in view of the risks, maintain adequate buffers, take the necessary measures to bring the budget deficit below the 3 % of GDP threshold in 2009, and ensure that adequate progress in budgetary consolidation towards the MTO is made thereafter, thereby setting the debt-to-GDP ratio on a declining path towards the 60 % of GDP threshold; (ii) ensure full implementation of the fiscal responsibility law, continue expenditure moderation through further reforming of public administration, healthcare, and education systems, as announced, and strengthen financial market regulation and supervision; (iii) in view of the level of debt and the increase in age-related expenditure, further improve the long-term sustainability of public finances; continue to reform the pension system after the steps already taken in 2006-2008.
MT	**SUMMARY ASSESSMENT:** The overall conclusion is that, against a backdrop of weakening economic growth and a breach of the 3 % of GDP deficit reference value in 2008, the programme envisages a return to budgetary consolidation from 2009 onwards, brought about by expenditure restraint and, to a lesser extent, higher revenue. This is in line with the European Economic Recovery Plan and can be regarded as adequate given the high deficit and debt ratios and the competitiveness challenge. However, there are risks to the achievement of the deficit and debt targets over the programme period stemming from the favourable macro-economic scenario, the reliance on volatile revenue, the possibility of expenditure slippages and the lack of information on the consolidation measures in the outer years. The debt ratio, which is targeted to fall gradually over the programme period to below the 60 % of GDP reference value but is subject to the risks mentioned above, seems to be sufficiently diminishing towards the reference value in a medium term perspective, although increasing slightly in the short term according to the Commission forecast, bearing in mind the significant decline in the ratio during the period 2004-2007. Although improving in recent years, the lack of diversification in the economic base increases Malta's exposure to external shocks, especially in the face of the current economic downturn. Moreover, competitiveness remains vulnerable, especially if overall wages move out of line with productivity. **POLICY INVITATIONS:** In view of the above assessment, Malta is invited to: (i) resume fiscal consolidation as envisaged in the programme so as to return to a deficit-to-GDP ratio below 3 % in 2009 as planned and ensure that the general government debt ratio is reduced accordingly, by spelling out the measures underlying the planned consolidation in the outer years towards the MTO; (ii) strengthen the medium-term budgetary framework and enhance the efficiency and effectiveness of public spending, including by accelerating the design and implementation of a comprehensive healthcare reform.
NL	**SUMMARY ASSESSMENT:**

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Table (continued)

	The overall conclusion is that the Netherlands has a sound starting budgetary position. However, due to the projected sharp economic downturn, the government balance will again enter negative territory, after several years in surplus. The government gross debt ratio increased significantly, as a result of measures taken to support the financial sector. There are important downward risks to the budgetary targets in the programme from 2009 onwards, largely due to the underlying markedly favourable economic scenario, which is already evidenced by recent data **POLICY INVITATIONS:** In view of the above assessment, the Netherlands is invited to implement the 2009 fiscal policy as planned in line with the EERP and within the framework of the SGP, to limit the risk of a substantial further deterioration of the fiscal balance in 2010 relative to the most recent projections, and subsequently to move towards its medium term objective starting in 2011.
PL	**SUMMARY ASSESSMENT:** The overall conclusion is that Poland is planning an adequate fiscal stimulus, some measures of which are not temporary. The planned measures will stimulate both aggregate demand in the short term and strengthen the supply side of the Polish economy in a longer term. Given the optimistic GDP growth forecasts, the budgetary outcomes projected in the programme are subject to downside risks, according to the Commission forecasts, throughout the whole period covered by the current update. In addition, for the outer years, the planned spending restraint will have to be backed up with specified measures, as appropriate. **POLICY INVITATIONS:** In view of the above assessment and also given the need to ensure sustainable convergence, Poland is invited to: (i) implement the 2009 fiscal plans, including the stimulus measures in line with the EERP and the framework of the SGP, while avoiding to breach the reference value, as targeted by the Government; (ii) back up the consolidation strategy for 2010 and 2011 with specific deficit-reducing measures; (iii) reinforce the budgetary framework through better control over expenditure, including the swift implementation of the amended public finance act and performance budgeting.
PT	**SUMMARY ASSESSMENT:** The overall conclusion is that the programme aims at a significant temporary fiscal impulse in 2009 in line with the EERP, which represents an adequate response to the economic downturn. The programme rightly plans the resumption of fiscal consolidation as soon as the economy recovers. Yet, in the light of the favourable macro-economic assumptions, economic growth may underpin fiscal consolidation by less than envisaged in the programme. Progress with fiscal consolidation is also necessary to strengthen the long-term sustainability of public finances. In addition, further strengthening the budgetary framework can be instrumental to achieve the planned fiscal path. Finally, continue to fostering the quality of public finances is important also to underpin a smooth adjustment of the economy in the light of the imbalances it is faced with, notably by supporting potential GDP growth, helping improving competitiveness and supporting the correction of the external deficit. **POLICY INVITATIONS:** In view of the above assessment, Portugal is invited to: (i) implement the 2009 fiscal policy as planned in line with the EERP and within the framework of the SGP, while avoiding a further deterioration of public finances in 2009 and carry out with determination the planned adjustment in 2010 and beyond, strengthening the pace of budgetary consolidation if cyclical conditions are better than projected; (ii) further strengthen the budgetary framework, as envisaged, and ensure that fiscal consolidation measures continue to be geared towards enhancing the quality of the public finances in the light of the needed adjustment of the existing imbalances.
FI	**SUMMARY ASSESSMENT:** The overall conclusion is that public finances remain sound although the programme envisages the present high fiscal surpluses to decline substantially. In view of the fiscal situation, the stimulus measures of the programme update and the latest measures announced in January 2009 appear appropriate and are welcome. The stimulus package broadly complies with the general principles of the European Economic Recovery Plan. The budgetary outcomes projected in the programme are subject to downside risks and action geared to ensure long-term sustainability should be considered. **POLICY INVITATIONS:** In view of the above assessment, Finland is invited to: (i) implement the 2009 fiscal policy as planned in line with the EERP and within the framework of the SGP; (ii) subsequently reverse the adverse budgetary impact of the fiscal stimulus measures by returning to its medium-term objective and implementing appropriate structural reforms in order to preserve the long-term sustainability of public finances.
SE	**SUMMARY ASSESSMENT:**

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Table (continued)

	The overall conclusion is that the medium-term budgetary position is sound. Large surpluses in good times allow fiscal policy to play an active role in the current downturn, not only by boosting demand in the short term but also by strengthening the economy's long-term growth potential. The fiscal stance has appropriately become expansionary in 2009. However, there are short-term risks to the fiscal balance, and there is a need to strengthen the fiscal framework to ensure that the government balance improves once the economy picks up again. **POLICY INVITATIONS:** In view of the above assessment, Sweden is invited to implement the planned fiscal policy, including stimulus measures, in 2009, in line with the EERP and within the framework of the SGP, and subsequently ensure returning to the MTO.
UK	**SUMMARY ASSESSMENT:** The overall conclusion is that the programme confirms a rapid deterioration in the United Kingdom's budgetary position, which has strained the sustainability of UK public finances. The probably significantly weaker-than-envisaged macro-economic context in the near term carries the risk of a higher government deficit throughout the programme period. After the expansionary fiscal measures in 2009/2010 the programme envisages sustained fiscal tightening from 2010/2011 onwards, but there are risks to the achievement of this consolidation. These reflect the possibility of an extension of the stimulus measures to 2010 in the absence of a significant economic recovery, weaker revenue elasticities, and risks to the achievement of spending targets. Taking into account the probability of a worse-than-expected deterioration in the UK's budgetary position in the near term and the heightened risks to fiscal sustainability, there is a need for a more ambitious consolidation effort in the medium term. The debt ratio is projected to increase from 43,25 % of GDP in 2007/2008 to 65 % in 2010/2011, stabilising at close to 70 % at the end of the programme period. **POLICY INVITATIONS:** In view of the above assessment, the United Kingdom is invited to: (i) implement the fiscal plans, including the stimulus measures in line with the EERP and within the framework of the SGP, while avoiding any further deterioration of public finances; (ii) implement a significant budgetary consolidation in 2010/2011 and beyond, and further specify measures underpinning the adjustment, to ensure that the deficit is rapidly brought below the reference value; (iii) set out how the fiscal framework will be applied in the future, consistent with an improvement of the long-term The United Kingdom is also invited to improve compliance with the data requirements of the code of conduct.

Source: Commission services.

Part II

Evolving budgetary surveillance

SUMMARY

High-quality statistics and adequate budgetary indicators are essential for fiscal policy making, especially when the state of the economy calls for discretionary stabilisation. The deterioration in public finances due the financial crisis coupled with the increasing budgetary costs associated with ageing populations call for medium-term budgetary consolidation while at the same time supporting long-term economic growth. One important aspect for such a strategy is to improve the quality of public finances, including fiscal frameworks. Strong fiscal rules, medium-term budgetary frameworks and independent institutions can be instrumental to successful fiscal consolidations.

Cyclically-adjusted balances are a standard indicator used for the assessment of fiscal policies but they rely on a number of simplifying assumptions. One assumption is that the elasticity of revenues with respect to their (broadly defined) tax bases is constant. While this is justified as a medium- to long-term benchmark, it ignores a number of factors influencing the evolution of tax revenues in relation to the cycle such as, asset price changes or discretionary policy changes affecting the tax system. The latter, in particular, implies that the estimated cyclical component of tax revenues can possibly include policy-led changes in tax revenues. To get a clearer picture on the cyclical nature of tax revenues it would be necessary to net out the impact of discretionary measures from the tax revenue series. These data could then be compared with tax projections based on the assumption of constant elasticities, so as to assess the importance of short-term variations in tax elasticities not directly attributable to government policy. Information on discretionary measures, however, has not been available to date on a consistent basis. Therefore, a first attempt has been made to systematically analyse the impact of discretionary measures on the movements in tax revenues by drawing on information provided by Member States in the context of the activities of the Output Gap Working Group of the Economic Policy Committee. The preliminary results suggest that not adjusting for the impact of discretionary measures distorts significantly the estimates of tax elasticities, resulting in a correspondingly incorrect assessment of the non-discretionary component of the change in tax revenues. Further systematic collection of information on discretionary measures appears warranted in order to better distinguish the impact of governments' actions from that of other factors on the measurement of underlying fiscal positions.

In the wake of the financial crisis, governments have adopted substantial measures in support of the financial sector. These measures, often involving the purchase of financial assets or other complex transactions, raise a number of accounting issues, which are also relevant for the application of the EU fiscal rules. In most cases, notably purchases of assets, the transactions add to the government gross debt. In a number of cases, specifically guarantees, they involve an increase in government contingent liabilities. The majority of measures has no direct impact on the government deficit. However, the appropriate accounting treatment of transactions such as purchases of assets depends crucially on the availability of information on the assets' market price or fair value. As representative market prices may not be available during a financial crisis and a measure of fair value may only be inferred indirectly, the compilation of fiscal statistics may be subject to correspondingly greater margins of uncertainty. To ensure that the ESA accounting principles and rules are applied consistently across countries and identify best practice in the accounting treatment of complex transactions, intense discussions have been held amongst national statistical authorities with Eurostat playing a coordinating role.

As the current financial and economic crisis puts unprecedented strains on Member States' public finances, the importance of high quality public finances (QPF) has moved to the fore. This means effectively collecting and using scarce public resources with a view to closing not only short-term demand gaps but also backing the long-term economic growth potential and eventually moving to a fiscal consolidation path that ensures long-run sustainability.

Progress in data provision and development of indicators is instrumental to a more systematic analysis of QPF and its comparison across Member States. Data on the functional classification of government expenditure (COFOG) are now available at first and, at least partially, second-level of detail for all Member States and further progress is envisaged. Moreover, the Commission services have started to collect a large set of QPF indicators that could complement

the qualitative country-specific information on QPF. The indicators seek to cover five main dimensions of QPF (government size; fiscal position and sustainability; composition, efficiency and effectiveness of expenditure; structure and efficiency of revenue systems; fiscal governance). These dimensions had been earlier identified by the Commission services as the channels through which public finances impact long-term economic growth (see *Public Finances in EMU – 2008* report).

To synthesise the information contained in individual indicators, first attempts have been made to produce composite indicators for each dimension (and for a number of sub-dimension concerning expenditure) following standard best practices, e.g. including checks of robustness to different weighting and aggregation methods used. The results highlight that apparently similar synthetic outcome indicators are associated with very different levels of expenditure, suggesting ample room for improvements in efficiency. However, a number of problems are inherent in the data and indicators. Apart from data gaps across countries and the general unavailability of time series, measuring efficiency by simply relating a composite measure of output to expenditure neglects the influence of environmental variables that can heavily condition the impact of public policies (e.g., the influence of parental education attainment on quality of education indicators). Thus, composite indicators should only be seen as a starting point for identifying Member States' main strengths and weaknesses in QPF, notably in relation to broadly comparable countries.

A successful exit from the financial crisis is also likely to require a strengthening of national fiscal frameworks. Effective frameworks enhance the credibility of budgetary policy by offsetting deficit biases inherent in fiscal policy-making; they can also contribute to a more effective and efficient use of resources. Fiscal arrangements such as national fiscal rules, independent public institutions involved in the budget process and medium-term budgetary frameworks for fiscal planning have been the main subject of a relatively recent research stream, which has been triggered by the role of such arrangements in fiscal policy-making, as reflected also in the reform of the Stability and Growth Pact.

Since the original Commission surveys on the topic (see *Public Finances in EMU – 2006 and 2007* reports), the number of EU Member States resorting to fiscal rules, independent institutions and medium-term budgetary frameworks has continued to increase. In particular between 2005 (when the first survey was conducted) and 2008, seven new fiscal rules have been introduced. At the same time not many reforms have been introduced to increase the strength of the existing rules (measured by a composite indicator and reflecting also the coverage of the rule), with lack of independent monitoring and weak enforcement mechanisms remaining the main weaknesses. The new Member States as a group stand out for the greatest improvements in this area. By contrast, fiscal institutions remain less common in new Member States, which largely rely on their independent central banks to also monitor fiscal policy and the Court of Auditors for a proper use of public funds. Finally, progress on medium-term budgetary frameworks has been much slower than could have expected, e.g. from the intentions expressed in recent Stability and Convergence Programmes. As a result, the widespread weaknesses in Member States' medium-term budgetary frameworks identified in the 2006 survey, notably in coordination mechanisms across levels of government and monitoring and enforcement, still continue to apply.

1. MEASURING AND ASSESSING FISCAL DEVELOPMENTS IN AN ENVIRONMENT OF UNCERTAINTY

1.1. ACCOUNTING FOR BANK RESCUES

This section summarises how government measures in support of the financial sector impact on the government accounts (in particular the government deficit and gross debt) compiled according to ESA, ([19]) which are relevant for the SGP. While the accounting implications of government measures in support of economic activity in general (like tax cuts or increases in spending) are trivial, specific measures in support of the financial sector, often involving the purchase of financial assets or other complex transactions, raise a number of complex issues.

1.1.1. Complex rescues raise a number of accounting issues

Since the adoption of the first government measures in support of the financial sector in the context of the financial turmoil (e.g., the bail outs of Northern Rock in the UK, in September 2007; ([20]) of Roskilde Bank in Denmark, in August 2008; and of the Landesbanken and IKB in Germany), there have been intense discussions among Eurostat, other Commission departments, the ECB and the national authorities in charge of compiling government finance statistics. The aim of these discussions has been of ensuring that the ESA accounting principles and rules are duly respected and that similar transactions in different countries are recorded in a comparable manner. At this stage, it is useful to remind that, according to ESA, transactions are recorded according to their economic substance, rather than on the basis of formal considerations.

The discussion has allowed to organise the measures in support of the financial sector along the following clusters – for accounting purposes: (i) purchases of equity in banks; (ii) granting of loans; (iii) purchase of financial assets (e.g., asset removal schemes for impaired securities); (iv) guarantees to banks' liabilities; (v) asset protection schemes; (vi) exchange of asset schemes and (vii) deposit insurance. Most of these measures have been carried out by governments. However, in some cases, governments (on their own or in cooperation with the private sector) have created new entities for the purpose of bailing out banks or otherwise supporting the financial sector. In these cases, a crucial and often complex issue concerns (viii) the sectoral classification – in the general government sector or in the corporate sector – of these new entities.

(i) *Purchase of equity* in banks or other financial institutions. This includes the purchase of new (or existing) shares in quoted and unquoted banks. The equity bought by the government can be ordinary shares or some sort of preferred shares. The purchase of equity may, or may not, give to the government a controlling stake. It also includes cases of forced transactions, whereby the government expropriated equity and paid (or pledged to pay) an appropriate indemnity to the former shareholders.

Most cases of purchase of equity are recorded in the ESA accounts without any direct impact on the government deficit – in accounting jargon, these transactions are said to be 'booked below the line' – since the government acquired a financial asset of the same value of cash paid out. However, there is a need to book a deficit-increasing transaction where the government has paid for the shares more than their market price or fair value, or if the expected rate of return of the investment is deemed to be insufficient. In those cases, the impact on the deficit corresponds to the difference between the price paid and the market price or fair value of the equity. ([21])

([19]) ESA (or ESA95) stands for European System of National and Regional Accounts. ESA is the EU version of the UN's System of National Accounts (SNA1993). The ESA rules are in Council Regulation (EC) N° 2223/96 (OJ L 310, 30.11.1996, p. 1), as last amended by Regulation (EC) N° 1392/2007 of the European Parliament and of the Council (OJ L 324, 10.12.2007, p. 1).

([20]) For a detailed analysis of the Northern Rock bailout and some accounting implications, see Kellaway and Shanks (2008).

([21]) In most cases, the shares acquired by government are not quoted in stock exchanges. Even when the equity is quoted in the stock exchange, the government decision of buying shares and the price it is ready to pay may significantly distort market prices. Therefore the identification of the amount that has to be recorded as deficit-increasing is not trivial. Where there is a need to identify an expected rate of

In the vast majority of cases, the purchase of equity adds to the government gross debt – though the government net debt may remain unchanged, at least at inception – since, presumably, the government had to issue debt to finance the purchase. However, one has also observed cases where the government managed to finance the purchase of equity without issuing new debt, by reducing its stock of other financial assets, like deposits in the central bank or commercial banks, or of securities held by government-owned reserve funds.

(ii) *Granting a loan* is also a financial transaction that has no direct and immediate impact on the government deficit. However, there will be a need to record a deficit-increasing transaction in the future, if for any reason – like insolvency of the debtor – the government has to fully or partially cancel the debt at a later stage.

Typically, granting of loans implies an increase in government gross debt, unless the State managed to finance the loan without issuing debt.

(iii) The *asset removal schemes*, i.e., the purchase by government of impaired financial assets – the so-called 'toxic assets' – previously in the banks' balance sheet, is also neutral for the government deficit provided that the price paid by the government is estimated to be a fair value. Similarly to the purchase of banks' equity, one needs to book a deficit-increasing capital transfer in case the price paid was in excess of the fair value.

The identification of the market price or fair value for impaired assets in a context of financial turmoil is a thorny issue. Not only there is no liquid market for those assets, but some of them may be particularly difficulty to value given their structured nature. The EU statisticians have agreed a number of pragmatic rules to help them checking whether any transaction needs to be fully or partially booked as deficit-increasing. ([22]) In practice, statisticians consider that the price paid corresponds to fair value, unless there is evidence suggesting otherwise.

The disposal of these assets by the government at maturity, if not earlier, will lead to holding gains or losses. Those gains and losses are usually recorded in the revaluation account and have no direct impact on the government deficit. However, given the specific situation of uncertainty in a financial turmoil and the difficulty of identifying market prices and fair values, statisticians may have to impute holding losses to the government deficit whenever their size and nature suggests that the initial transaction had been carried out at a price in excess of fair value.

(iv) Several governments have granted *guarantees to banks' liabilities* (bonds or loans). A guarantee is a contingent liability that has no direct impact on the deficit and debt. In case the debtor honours its liability, the guarantee is never booked in the government finance statistics. However, in the rare cases the guarantee is called and the liability has to be taken over by the government because the debtor defaults, there will be an increase in both government deficit and debt at the time of the debt take over.

Governments usually collect some fees when they grant guarantees. These fees are recorded as sales of services and reduce the government deficit. The recording of those fees as government revenue has some counter-intuitive implications for the ESA accounts. Since fees are recorded as sales, they reduce nominal government consumption, as the latter is measured as salaries *plus* purchases of goods and services *plus* depreciation *less* sales. Moreover, since real consumption is not affected by these transactions, the government consumption deflator falls. ([23])

return and to judge whether this rate of return is sufficient, EU statisticians usually refer state aid-related documents.

([22]) The criteria that statisticians apply in order to check whether a given transaction took place at fair value refer notably to (i) the existence of an adequately operating market with smoothly evolving prices for identical or similar assets; (ii) some mechanism undertaken to determine a market value, such as an auction; (iii) the carrying value of the asset in the business accounts of the seller provided that those accounts have been compiled on suitable business accounting principles at a point in time reasonably close to the time of transaction; or (iv) independent valuations.

([23]) To avoid this unfortunate consequence on nominal consumption and consumption deflator, one could alternatively record the fees as insurance premia or as financial derivatives. However, these accounting options

(v) The accounting implications of *asset protection schemes* are quite similar to the guarantees granted to third parties' liabilities. Typically an asset protection scheme will work as follows: against a fee paid to the government, the government and banks agree in sharing the holding gains and the holding losses to be recorded in the future in relation to a set of assets which remains in the banks' balance sheet.

At inception, there is no impact on the government debt and deficit (other than the fees). In case the asset loses value and the government has to indemnify the banks subsequently, one needs to record a deficit and debt increase.

(vi) To contribute to the liquidity of interbank markets, some countries have established *exchange of assets schemes*. The aim of these scheme is to increase the stock of government bonds in the banks' hands that they can use as collateral in interbank lending. An example is the special liquidity scheme (SLS), which was then replaced by a permanent discount window facility (DWF), in the UK. These schemes start with the government issuing bonds which are lent to the central bank. ([24]) The central bank then temporarily exchanges these bonds with commercial paper in the banks' balance sheet. Before maturity, the bonds are exchanged again against commercial paper – which goes back to commercial banks – and the government bonds return to the central bank and then to the government. As a result, the government will not have to reimburse these bonds or to pay interest on them.

This kind of schemes has no direct impact on the government deficit, other than the fees paid to the government. Potentially, there is some deficit-increasing effect, if a commercial bank defaults, collateral in the central bank's hands proves to be insufficient and the central bank has to be indemnified by the Treasury.

The impact on the government gross debt of these schemes has been among the most heated discussions among statisticians. On the one hand, the scheme works in such a manner that the government does not have to reimburse or to pay any interest on these bonds. In essence, the scheme can be seen as a way of designing a government guarantee for interbank lending. This would suggest that, effectively, the scheme does not create government debt. On the other hand, the government has issued paper which was lent to the central bank, exchanged against commercial paper, used as collateral and potentially sold several times among commercial banks. Therefore it would be inappropriate that those bonds where not recorded anywhere in the ESA framework. At the time of writing this report, nothing has been recorded in the government debt in relation to this scheme, but the issue is still under discussion. ([25])

(vii) The *deposit guarantee or insurance schemes* do not necessarily imply any recording in government accounts. In most EU countries the deposit insurance schemes have been classified in the financial corporate sector as insurance companies and not in government. ([26]) In particular there was no deficit or debt impact when the EU decided an increase in the ceiling for deposit protection. ([27])

In case a deposit entity becomes insolvent, the impact on government accounts depends very much on how the deposit protection scheme is organised; this differs from country to country. The indemnities are either directly borne by the State (thus increasing the government deficit and

would oblige statisticians to heroically estimate the probability of defaults and of guarantees being called.

([24]) Note that bonds are lent to the central bank, not sold; the government receives no cash, other than a fee.
When publishing the deficit and debt data reported by Member States (see Eurostat News Release 56/2009 of 22 April 2009), Eurostat indicated that the treasury bills provided by the UK Treasury to the Bank of England for use in the SLS amounted to 12.8% of GDP.

([25]) As per the usual procedures whenever there is a doubt concerning the correct interpretation of ESA or its application to a concrete transaction, Eurostat has consulted the CMFB (committee on monetary, financial and balance-of-payment statistics; this is a consultative body that gathers senior statisticians from the national statistical offices and central banks of the whole EU). The CMFB opinion of 18 March 2009 on the recording in ESA accounts of the UK's special liquidity scheme, and a background document are available at the CMFB website at http://www.cmfb.org.

([26]) In Sweden and the UK, the respective deposit guarantee schemes have been classified in central government.

([27]) On 7 October 2008, EU Finance ministers committed to raise the minimum level of deposit guarantees to EUR 50 000; this will increase to EUR 100 000 by end 2010 in compliance with Directive 2009/14/EC of the European Parliament and of the Council on deposit-guarantee schemes (OJ L 68, 13.3.2009, p.3).

debt); defrayed through the sale of assets accumulated by the deposit insurance scheme over the years; distributed among other commercial banks; or a combination of these.

(viii) Most support to the financial sector has been directly provided by the governments. However, there are a number of cases in relation to which one needs to consider the *classification in government or in other sectors* of the entities providing support.

Notably, in most cases, financial defeasance agencies (i.e. government-established entities created on purpose and specialised in purchasing and disposing of financial assets in a financial crisis, often called 'bad banks') are classified in the government sector. This is the case even when those entities have the legal status of public enterprises or special purpose vehicles, and even when those entities are partially owned by the private sector. What matters to decide the classification of those entities is who controls the agency's activities and bears most of the risks associated to its activity. ([28]) Where 'bad banks' are classified in government, the accounting of their transactions is similar to the situation their activities had been directly carried out by the State.

An interesting case of an entity created on purpose to provide support to banks is SFEF in France. ([29]) This is an entity – legally speaking, it is a company – created and owned by the French State and some private banks. It borrows with a State guarantee and lends to banks against high-quality collateral. The French statistical authority (INSEE) decided that, in spite of the legal nature and ownership of SFEF, the latter should be classified in the government, given its limited autonomy and the fact that its activities' risks are borne by the State.

Another noteworthy example of an entity active in the context of the financial crisis and whose classification has been discussed by statisticians is AFS in Denmark. ([30])

It should also be noted that, to ensure the principle of economic substance, a transaction in support of the financial sector carried out by a public corporation (e.g., a government-owned bank that is classified in the corporate sector) for public policy purposes under government instructions rather than for commercial reasons will be recorded in the government accounts. ([31])

1.1.2. Conclusion

The vast majority of government measures in support of banks add to the government gross debt, though they are neutral – at least in the short-term – for the government deficit. This is because the government acquires financial assets of the same value of the cash disbursed. In case the government 'overpays' for financial assets, the estimated 'overpayment' is deficit-increasing. See Table II.1.1 for a summary of the most likely impacts in government deficit and gross debt of measures in support of banks.

In many cases, the support to banks consists in shifting risks to the government, either through the accumulation of assets with uncertain or volatile value or of contingent liabilities. Therefore, the cost for public finances of bank rescues will depend significantly on how these assets and contingent liabilities will be managed and will evolve in coming years.

Given the ESA rules on the valuation of assets, liabilities and respective transactions at market price or fair value, the availability of data on these concepts is crucial to ensure the quality of statistics. However, during a financial turmoil, those concepts may not be directly observable and

([28]) In its opinion concerning statistical accounting consequences for government of the financial turmoil of 18 March 2009 (available at the CMFB website at http://www.cmfb.org, together with a background document), the CMFB considered that 'bad banks' are classified in the general government sector 'if the government pre-determines the body's activity and assumes all or a majority of the risks associated with the body's activities.'

([29]) Société de financement de l'économie française.

([30]) Afviklingsselskabet til sikring af finansiel stabilitet A/S. For the time being, AFS has been classified as financial corporations, and not in government (see Eurostat News Release 56/2009 of 22 April 2009).

([31]) Technically, the transactions carried out by a unit but booked in the accounts of another unit are said to be rearranged or rerouted. This issue is also considered in the above-referred to CMFB opinion concerning statistical accounting consequences for government of the financial turmoil.

Table II.1.1: **Accounting for bank rescues: a summary**

	Impact on government deficit	Impact on government gross debt
Purchase of shares and Asset removal schemes	Most likely: neutral But: deficit increases if payment above fair value	Most likely: increase But: neutral if transaction financed by a reduction in financial assets (e.g. deposits)
Granting of loans	Most likely: neutral But: deficit increases in the future if debtor defaults	Most likely: increase But: neutral if transaction financed by a reduction in financial assets
Exchanges of asset schemes (e.g. UK's Special Liquidity Scheme) (*)	Most likely: neutral But: deficit increases in the future if counterpart defaults and collateral insufficient	Currently, no impact on the debt, but the discussion is ongoing.
Guarantees to third parties' liabilities (*)	Most likely: neutral But: deficit increases in the future if guarantee is called	Most likely: neutral But: debt increases in the future if guarantee is called
Asset protection schemes (*)	Most likely: neutral But: deficit increases in the future if indemnities have to be paid depending on the evolution of the asset prices	Most likely: neutral But: debt increases in the future if indemnities have to be paid
Deposit insurance (**)	Most likely: neutral But: deficit increases in the future if banks default and depositors have to be indemnified by government	Most likely: neutral But: debt increases in the future if banks default and depositors have to be indemnified by government

Note: This table refers to direct impacts on the deficit and debt; it does not deal with indirect impacts, such as differences between interest rates on government debt and rates charged on loans, and dividends received on equity bought by government, or the indirect impact of holding losses, via interest paid or revenue lost.
(*) Given fees paid to the government by banks, one may observe some deficit-reducing effects.
(**) Note that the deposit insurance schemes are usually classified outside government (though they may benefit from some kind of government guarantee); therefore, in case some depositors need to be indemnified, the impact in government accounts, if any, may be less than the indemnities paid to depositors.
Source: Commission services.

can only be estimated with relatively large margins of error. Though some deterioration in the accuracy of fiscal statistics during a financial turmoil may be inevitable, the quality loss may be minimised if statisticians exercise judgement and prudence and consider the best available information when classifying and recording each of the government measures. Moreover, the in-depth discussion on the more complex transactions among Eurostat and national statistical institutes contributes to ensure that government finance statistics of the different EU countries remain comparable and appropriate for analytical purposes.

2. DISCRETIONARY MEASURES AND TAX ELASTICITIES IN THE EU

The analysis of short-run variations in tax revenues and their link to the business cycle generally ignores the influence of discretionary policy changes affecting the tax system. The latter, in particular, implies that the estimated cyclical component of tax revenues can possibly include policy-led changes. It would however be necessary to net out the impact of discretionary measures from the tax revenue series, so as to obtain data more representative of the endogenous behaviour of the tax system. This could, for instance, allow better understanding the role played by non-policy factors (such as, for instance, asset prices) in driving short-run evolutions of tax revenues. Information on discretionary measures, however, has not been available to date on a consistent basis. A first attempt to analyse systematically the impact of discretionary measures on the movements in tax revenues has been made by drawing on information provided by Member States in the context of the activities of the Output Gap Working Group of the Economic Policy Committee. The data collected allows a preliminary assessment of the relative importance of discretionary measures in fluctuations of tax revenues. The preliminary results suggest that not adjusting for the impact of discretionary measures distorts significantly the estimates of apparent tax elasticities, resulting in a correspondingly incorrect assessment of the non-discretionary component of the change in tax revenues.

2.1. DISCRETIONARY MEASURES AFFECTING TAX REVENUES IN THE EU: HOW IMPORTANT ARE THEY?

In order to derive a tractable measure of the cyclically-adjusted budgetary balance consistent both across time and countries, it is generally assumed that the sensitivity of tax revenues with respect to economic activity is constant and given by an estimated elasticity. ([32])While representing a useful benchmark in the medium to long run, the constant tax elasticity assumption suffers from a number of limitations which can result in an incorrect assessment of the relationship between revenue developments and the business cycle. The factors that are typically put forward in this respect are the differences in the cyclical sensitivity of each broad tax category (and, more precisely, of their corresponding tax bases), and elements not directly considered in the definition of the tax bases such as oil or asset prices. These factors can also interact with the effect of tax measures taken by governments on a discretionary basis and may, by the same token, distort the picture of the relationship between tax revenues and economic activity. Specifically, the absence of tax series netted of discretionary measures does not allow to distinguish tax revenues development stemming from policy and/or legislative changes (or other indirect policy-induced measures affecting tax yields) from the endogenous behaviour of taxation systems i.e., the development in tax revenues due to the sole evolution of the tax bases in absence of discretionary measures.

Existing evidence suggests that discretionary measures play an important role in explaining short-run variations in apparent tax elasticities although the information available to date is still scant and limited to only few countries (see in particular European Commission, 2008). For instance, Duchene and Levy (2003) show that the discretionary components were often, although not always, the most important component behind estimated changes in budget balance during the period 1998-2004 in France. Using econometric analysis, Wolswijk (2007) also provides supportive evidence for the Netherlands on the need to net-out tax revenue series from discretionary measures in order to correctly assess short-run variations in apparent tax elasticities. These examples suggest that consistent recording of discretionary measures across a wider range of EU countries could be instrumental to a better monitoring of fiscal developments.

Information on discretionary measures was recently collected in the context of the Output Gap Working Group (OGWG) of the Economic Policy Committee, covering a large sample of EU countries. Member States were invited to report on their estimates of the impact of discretionary measures for broad tax categories used in the

([32]) See in particular Girouard and André (2005) for a description of the OECD/European Commission method to estimate tax elasticities.

calculation of overall budgetary sensitivity to the business cycle. The Annex Table II.1 shows that the data usually start in 2000-2001 and end in 2007-2008, although coverage varies across countries. In most cases data is recorded on a accrual basis or both in cash and accrual and using gross estimations (i.e. without considering their impact on the tax bases). The "no policy change scenario" used by Member States to estimate the impact of discretionary measures (in particular in relation to the treatment of price indexation mechanisms) appears to be rather general as it is defined in most cases as the projection of tax revenues before considering any measure affecting the tax system. Further details on the data on discretionary measures are presented in the Annex II.1.

Table II.2.1 below provides summary statistics on the average annual shares of the discretionary measures in tax revenue by broad tax category. ([33]) In general, when considering the EU as a whole, the effect of discretionary measures tends to be relatively limited (3,5% for all taxes) although in certain cases, such as for direct taxes, the average effect appears to be somewhat larger (5,7%), with especially high values for some countries such as Cyprus, Bulgaria or Italy. The data reported in Table II.2.1 also show that in certain cases, especially for direct taxes, governments took measures generally acting to lower direct tax revenues and increasing indirect tax revenues. ([34]) Such pattern can be observed for a large number of countries including Cyprus, the Czech Republic, Italy, Latvia or Sweden. Discretionary measures affecting social security contributions, on the other hand, have experienced less pronounced changes, excepting few cases such as Romania, Cyprus and Bulgaria, which have experienced sizeable decreases in social security contributions as consequence of these measures, while the UK, Latvia and France have implemented measured acting to increase government revenues in this tax category. A more detailed investigation of the data suggests that the effects of discretionary measures are highly concentrated in time, which is also suggested by the large differences between average, maximum and minimum values reported in Table II.2.1.

([33]) The disaggregation into three broad tax categories was due to the unavailability of disaggregated information in a number of countries. Broad tax grouping, considering together personal and corporate income taxes) was thus opted for in order to ensure comparability of results across countries.

([34]) While these evolutions could presumably reflect a shift between direct and indirect taxation, recent taxation trends indicate that the overall picture is more nuanced, however. Recent evolutions in taxation revenues in the EU suggest that statutory corporate tax rates have experienced a marked decline while implicit tax rates on consumption have been on the rise in the EU since the end of the 1990s/early 2000s, see in particular European Commission (2008d).

Table II.2.1: **Annual shares of discretionary measures in tax revenue levels: average 2001-2007***

	Direct taxes			Indirect taxes			Social security contributions			All taxes		
	Average	Max.	Min.	Average	Max.	Min.	Average	Max.	Min.	Average	Max.	Min.
AT	5.9	9.0	-10.6	3.8	5.2	2.4	0.2	0.0	-0.5	3.1	3.7	-1.7
BE	2.5	0.3	-4.4	1.1	1.7	0.0	0.5	0.1	-1.3	1.4	0.1	-1.7
BG	12.7	-4.6	-20.3	3.7	4.4	-5.2	4.2	1.5	-15.5	5.4	1.1	-6.3
CY	22.6	-19.0	-26.2	22.4	24.7	20.1	7.4	-7.1	-7.8	19.1	2.1	0.9
CZ	5.8	0.0	-18.8	2.9	14.1	-0.6	1.2	2.0	-0.8	2.9	4.2	-3.3
DK	0.8	0.5	-2.6	1.0	0.1	-1.8	N/A	N/A	N/A	N/A	N/A	N/A
EE	8.8	-7.5	-10.8	6.2	12.8	0.1	1.9	3.6	1.1	5.3	3.8	-1.3
ES	4.2	0.0	-8.6	0.4	0.7	-1.7	N/A	N/A	N/A	N/A	N/A	N/A
FI	3.1	-2.2	-4.1	0.4	0.5	-1.6	0.7	1.3	-2.5	1.6	-0.9	-1.9
FR	2.5	2.3	-6.0	0.2	0.6	-0.1	0.4	1.3	-0.2	0.9	0.8	-1.5
IT	9.9	-5.0	-12.2	0.7	0.8	-0.9	N/A	N/A	N/A	N/A	N/A	N/A
LT	6.6	3.3	-14.2	1.9	-0.3	-5.4	0.0	0.0	0.0	2.8	0.0	-5.0
LV	2.9	-1.6	-4.7	2.5	3.9	0.4	1.4	2.7	0.0	2.3	1.0	0.0
MT	1.8	2.1	-4.6	1.9	3.7	-0.8	0.1	0.0	-0.6	1.4	1.4	-1.1
PT	1.5	5.1	-3.2	2.0	4.7	-0.4	0.4	2.2	0.0	1.3	4.0	-0.2
RO	7.9	2.4	-13.5	1.3	1.7	-0.9	5.1	-5.0	-5.1	3.9	-1.7	-3.6
SE	2.7	1.3	-7.3	0.4	0.8	-0.2	0.9	0.0	-4.7	1.4	0.7	-2.9
SI	7.9	15.0	2.3	0.0	0.0	0.0	0.0	0.0	0.0	1.8	3.6	0.5
SK	3.0	5.3	-4.9	6.0	8.5	-7.8	3.1	2.8	-6.9	4.2	3.6	-5.1
UK	0.3	0.3	-1.0	0.6	0.0	-2.0	1.3	9.1	0.0	0.6	2.1	-0.8

Note: The average share of discretionary measures is calculated as the average of the absolute value of annual figures on discretionary measures in t divided by the value of tax revenues in t-1 given that the measurement of discretionary measures refers to the change in revenue between t-1 and t.
* Data concern the period referred to in the Annex Table II.1.
Source: Commission services.

2.2. CORRECTING THE EFFECTS OF DISCRETIONARY MEASURES ON TAX ELASTICITIES

The size of discretionary measures can distort the meaning of apparent tax elasticities and, by the same token, that of the difference between these and the (estimated) constant elasticities used in EU fiscal surveillance. One should also note that discretionary measures can be taken in reaction to the perceived state of the economy so that tax windfalls/shortfalls can either be magnified or compensated by discretionary tax cuts/hikes. For instance, buoyant corporate taxes were sometimes accompanied by corporate tax cuts in the EU possibly reflecting premature assessments regarding the structural nature of such favourable tax revenue development (see European Commission, 2008). More recently, the sharp deterioration of cyclical conditions linked to the financial crisis has led many EU countries to adopt stimulus measures under the European Economic Recovery Plan (EERP). These different elements would result in (policy-induced) short-run variations in tax elasticities in response to business cycle developments so that differences between apparent and constant estimated elasticities may themselves have a strong policy-driven cyclical component.

An immediate way to net-out the effect of discretionary measures would seem to simply subtract their annual amounts from the corresponding tax revenues figures. This simple approach, however, would not yield tax revenues series adjusted for the influence of discretionary measures taken in different years since it would implicitly assume that taxation systems remain unaffected. However, changes in tax laws, which may be designed to address past fiscal imbalances or may be due to electoral outcomes, naturally make tax revenues for a given year dependent of previous years' taxation revenues. It follows that a correction of tax revenues series for the impact of discretionary measures should consider all years where these measures have been taken.

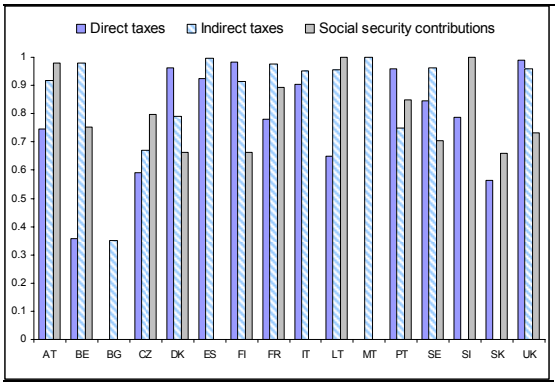
Considering a specific year *t* as the base year, the correctly adjusted tax revenue series is the one that would prevail if the base year's tax structure had been in operation for the entire period. A simple approach, termed the "proportional adjustment method", can be used to adjust tax revenues for the impact of discretionary measures and thus allows a comparison of tax revenues strands across time. ([35]) This approach, by adjusting for the dependence of tax revenues on discretionary measures, allows the calculation of apparent tax

([35]) See in particular Barth and Hemphill (2000).

elasticities (based on annual tax revenue changes) net of the effect of discretionary measures in a consistent manner (see Appendix II.2 for a more technical explanation).

The proportional adjustment method has been applied using the information on discretionary measures described above to calculate tax elasticities net of the effect of discretionary measures. Graph II.2.1 and II.2.2 provide a first set of descriptive statistics on the correlation between gross and net apparent tax elasticities. Graph II.2.1 shows that in general the two series are fairly highly correlated although in some cases, such as for Bulgaria or Estonia regarding indirect taxes, the co-movement between the two series appears to be weak.

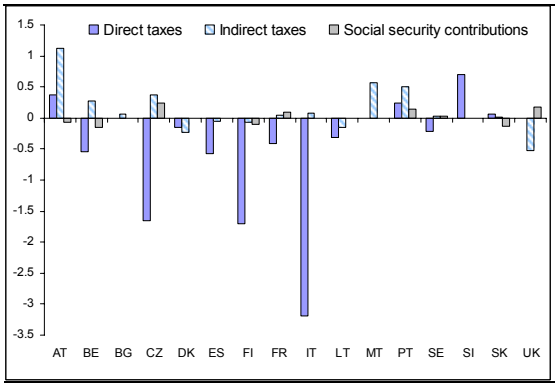
Graph II.2.1: **Correlation between gross and net apparent elasticities**



Note: Correlation calculated for the periods indicated in Annex Table II.1. Countries with less than three years of observations not reported.
Source: Commission services.

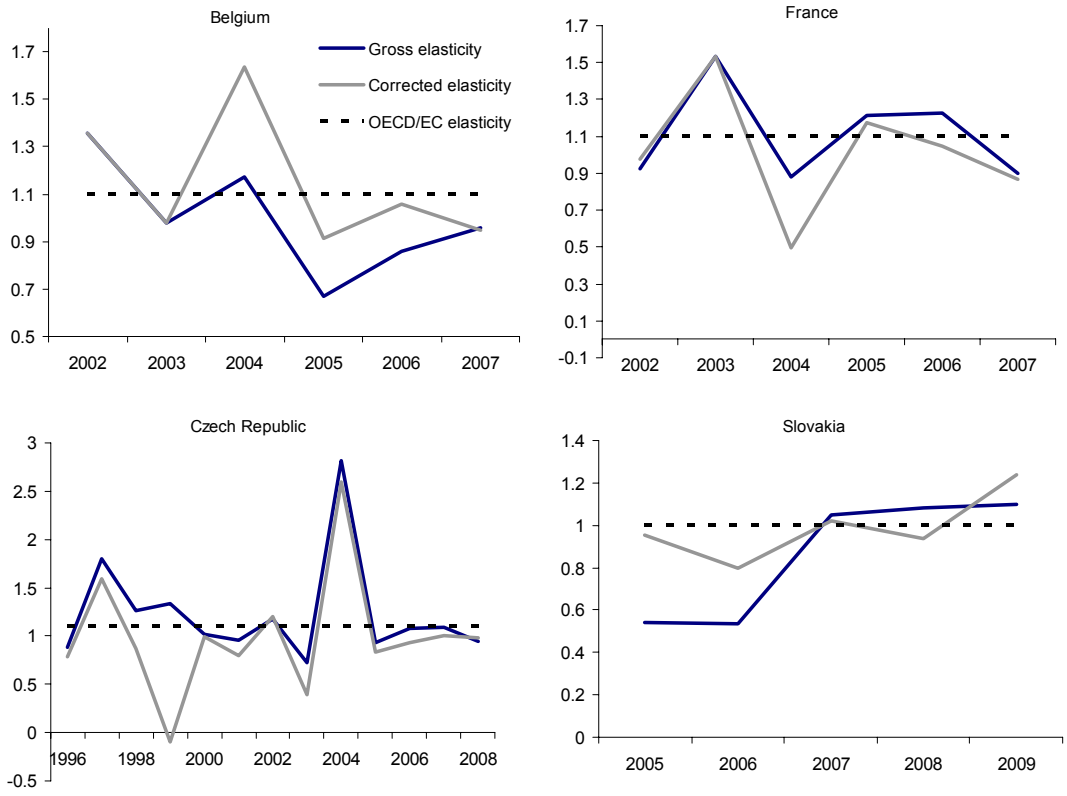
Although apparent gross and net tax elasticities appear to be fairly highly correlated in most cases, this should not obscure the differences between the average values of the two series as shown in Graph II.2.2. The average level of gross tax elasticities tend to depart in a large number of cases from that of the tax elasticities netted for the effects of discretionary measures, especially for direct taxes. This is also the case in some countries for indirect taxes, while for social security contributions the two series appear to be more similar.

Graph II.2.2: **Differences in level between gross and net apparent elasticities**



Note: Average across periods indicated in Annex Table II.1. Values close to zero indicate similar average values.
Source: Commission services.

Graph II.2.3: **Gross and corrected (for the impact of discretionary measures) tax elasticities: Social security contributions**



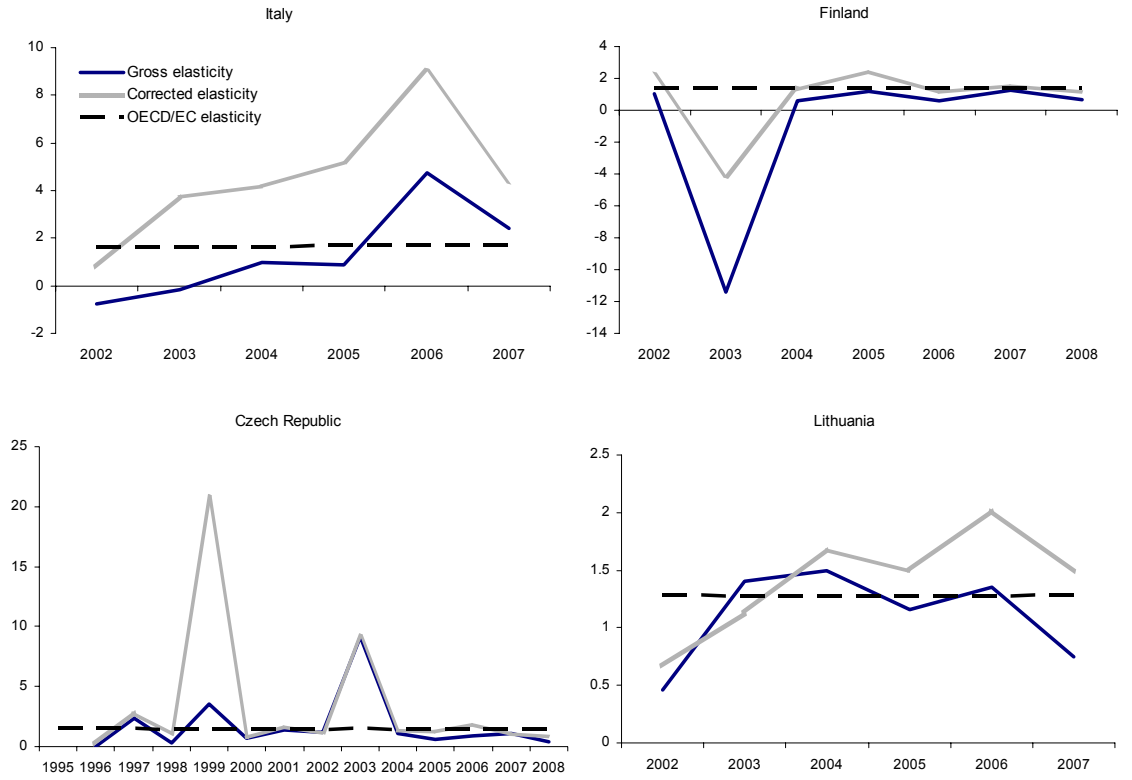
Source: Commission services.

Graphs II.2.3 to II.2.5 plot the evolution over time of gross and net (of the effect of discretionary measures) apparent tax elasticities for each broad tax category for selected countries.([36]) Graph II.2.3 plots the evolution of apparent gross and net elasticities for social security contributions and constrasts this with the estimated tax elasticity using the OECD/European Commission method. In most cases gross and net tax series appear to be positively correlated suggesting that discretionary measures do not explain entirely the departure of apparent tax elasticities from the OECD/European Commission benchmark. In certain years, however, corresponding also to the occurrence of discretionary measures with relatively large impact, net and gross figures appear to depart rather substantially. This pattern can be observed for all countries considered in Graph II.2.3.

Graph II.2.4 performs a similar exercise for a different set of countries and for direct taxes. Here again, apparent tax elasticities appear to depart somewhat from their OECD/European Commission benchmark in certain years, even adjusting for discretionary measures, denoting large volatility of tax elasticities in the short-run. These results suggest that, although the effect of discretionary measures may appear to be relatively small on average, as suggested by the results reported in Table II.2.1, their relatively high concentration in time entails disproportionate variations in apparent tax elasticities in certain years. In the case of Italy, discretionary measures appear to bias direct tax elasticity downward on a permanent basis.

([36]) No special criteria was followed to select these countries and the results presented here can be considered fairly representative of the general results concerning differences between gross and net apparent elasticities.

Graph II.2.4: **Gross and corrected (for the impact of discretionary measures) tax elasticities: Direct taxes**

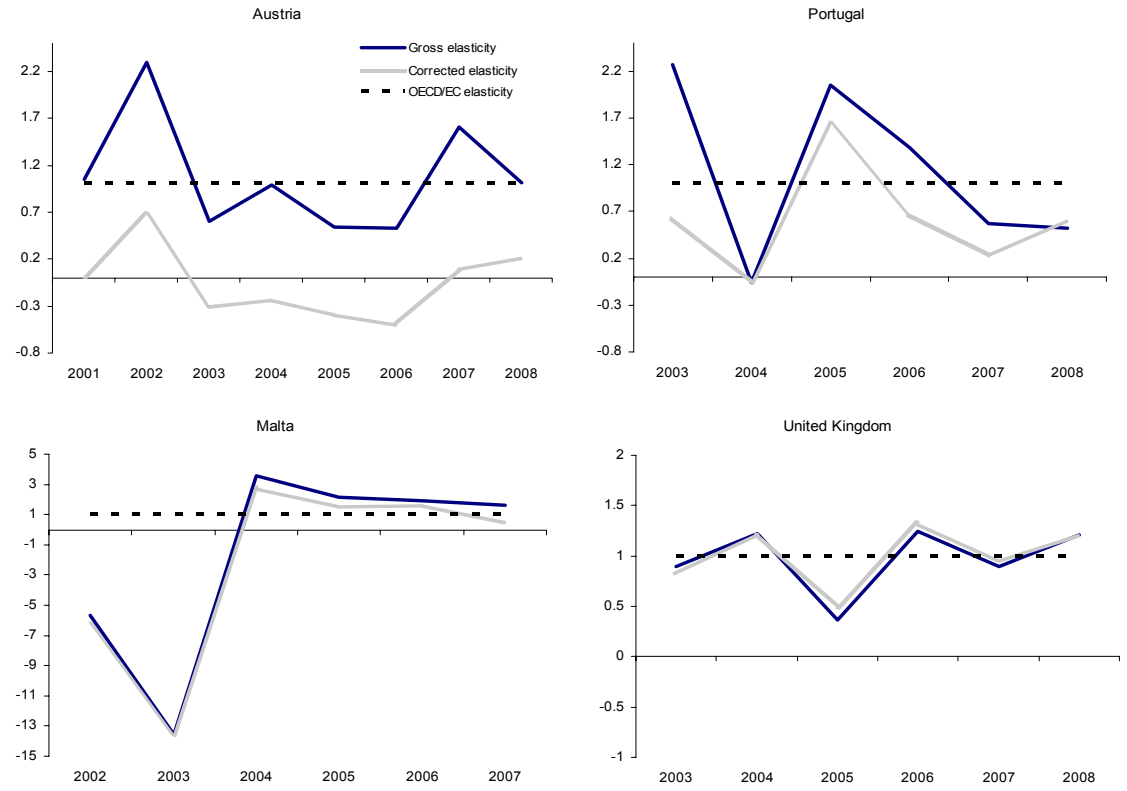


Note: Benchmark OECD/European Commission tax elasticity given by the weighted average of corporate and income taxes elasticities using gross operating surplus and personal income as weights, respectively.
Source: Commission services.

Graph II.2.5 concerning indirect taxes provides other interesting insights. For instance in the case of Malta and the UK, discretionary measures do not appear to alter significantly the value of apparent tax elasticities. The cases of Portugal and Austria, on the other hand, suggest that discretionary measures tend to have a permanent impact on apparent tax elasticities as these appear to depart significantly from the gross value of tax elasticity for relatively long time period.

These results suggest that, while the incidence of discretionary measures across EU countries and tax categories is far from uniform, its skewed distribution across time tends to affect significantly the value of apparent tax elasticities, in certain cases during a relatively long period of time.

Graph II.2.5: **Gross and corrected (for the impact of discretionary measures) tax elasticities: indirect taxes**



Source: Commission services

2.3. SUMMARY AND WAY FORWARD

This Section provides evidence for the impact of discretionary measures on apparent tax elasticities in the EU for broad tax categories. The data used was collected in the context of the activity of the Output Gap Working Group of the Economic Policy Committee and concerns a large number of EU countries. The note applies a simple method to construct series net of the influence of discretionary measures and shows that, although on average discretionary measures are relatively low compared to tax revenues levels, their incidence on tax elasticities (and thus tax revenue changes in relation to the business cycle) can be very large and yield to significant departure between gross and net (for the effect of discretionary measures) tax elasticities. Although very useful, it should be noted that such data should be used with great care both from policy and analytical viewpoints. Differences in the accounting rule followed (i.e., data expressed either accrual or cash) suggest that the data collected to date is not fully homogenous across all EU countries although a large majority of countries perform estimates on an accrual basis consistent with ESA95 standards. Differences in subjective appreciation of what constitutes a discretionary measure (i.e. differences in the "no-policy change assumption"), represent another important limitation of the data. Despite these caveats, the information collected and first results presented here suggest that this type of information is of primary relevance both for fiscal policy assessment and analysis. The availability of longer time series on discretionary measures should be warranted in order to analyse a number of hypothesis regarding the behaviour of fiscal policy in relation to the business cycle. Apparent tax elasticities can be largely influenced by past and current discretionary measures and should thus be appropriately corrected. The calculation of tax elasticities net of discretionary measures would in particular allow a better identification of the effects of other (non-policy) factors such as, for instance, asset prices variations, on underlying tax revenues.

3. THE QUALITY OF PUBLIC FINANCES: DATA AND INDICATORS

3.1. INTRODUCTION

As the financial and economic crisis is putting unprecedented strains on Member States' public finances, assuring high quality of public finances (QPF) with a view to supporting long-term economic growth and providing a credible exit strategy has gained new urgency. ([37]) Already before the crisis, policy makers had increasingly focused on how public finances could support long-term economic growth in response to the challenges of ageing populations and tougher competition from increased globalisation. But as Member States' fiscal resources are currently being put under considerable stress, the importance of high QPF has moved to the fore. This relates particularly to the questions of how to best use scarce public resources with a view to closing not only short-term demand gaps but also backing the long-term growth potential, making Europe's economies more resilient to shocks and how to eventually put the fiscal houses back in order to ensure long-run sustainability.

Systematically analysing QPF in Member States should draw on qualitative country-specific information as well as on a set of quantitative data and indicators. These would allow identifying strengths and weaknesses of QPF by putting them into perspective to other countries and reviewing developments over time. One core area in which significant progress on the provision of data has been made last year is government expenditure by functions of government (COFOG). This can serve as one important input into the complex area of QPF. Despite the broadness and complexity of QPF, the Commission services have made an attempt to identify a large set of relevant QPF indicators and summarise them into some key groups. ([38]) This work, including the selection and grouping of the indicators, is based on the conceptual framework on QPF presented in the *Public finances in EMU – 2008* report, in which also some initial ideas on the indicator work had been documented.

The following two sections summarise the Commission services work on QPF indicators and data. The first part lays out the key steps so far undertaken by the Commission services in identifying relevant QPF indicators and combining them into a set of composite indicators. The construction of composite indicators follows the relevant guiding principles by the OECD (2005). Robustness checks were conducted, potential risks in the use of the QPF indicators highlighted and areas for further improvements identified. A more comprehensive account of the technical details can be found in Barrios and Schaechter (2009). The second part provides an overview on the progress on data provision on expenditure by functions on government (first and second-level COFOG data).

3.2. DEVELOPING QUALITY OF PUBLIC FINANCES INDICATORS

3.2.1. A framework

Choosing QPF indicators that can also be summarised into composite indicators should follow a transparent and systematic approach without becoming overly mechanistic. Composite indicators have become a useful tool to compare

([37]) Most recently, the May 2009 Ecofin Council conclusions highlighted the importance of quality of public finances in times of limited budgetary room for manoeuvre. While the conclusions stressed the general link of QPF and the Lisbon Strategy for Growth and Jobs, it plays a specific role for many sector policies, such as education. For example, the May 2009 Education Council named efficiency and quality of education and training systems as one of the strategic challenges for European cooperation in education and training.

([38]) The work was motivated by the rising importance of QPF as well as shortcomings in analytical tools to assess QPF in Member States and was based on a mandate from EU Finance Ministers. In particular, in their conclusions from May 2008 the Ecofin Council "reconfirm(ed) the call for the EPC and the Commission to step up their efforts to improve the measurement and analysis of the quality of public finances and its impact on growth." This followed up on the October 2007 Ecofin Council conclusions. The Commission's indicator work documented here has also been presented to and discussed at the EPC and Working Group on QPF. While it was supported by the majority of Member States, some Member States took issues with this work and proposed instead to drop the indicators on the size of government, fiscal position and sustainability and follow a different, in particular more sector-specific, approach with the objective to developing own indicators for a broad range of areas.

Box II.3.1: **Pros and cons of composite indicators 1/**

Pros	Cons
• Can summarise complex or multidimensional issues in view of supporting decision-makers. • Easier to interpret than trying to find a trend in many separate indicators. • Facilitate the task of ranking countries on complex benchmarking exercise. • Can assess progress of countries over time on complex issues. • Reduce the size of a set of indicators or include more information within the existing size limit. • Place issues of country performance and progress at the centre of the policy arena. • Facilitate communication with the general public (i.e. citizens, media, etc.) and promote accountability.	• May send misleading policy messages if they are poorly constructed or misinterpreted. • May invite simplistic policy conclusions. • May be misused, e.g., to support a desired policy, if the construction process is not transparent and lacks sound statistical or conceptual principles. • The selection of indicators and weights could be the target of political challenge. • May disguise serious failings in some dimensions and increase the difficulty of identifying proper remedial action.. • May lead to inappropriate policies if dimensions of performance that are difficult to measure are ignored.

1/ OECD (2005) Handbook on constructing composite indicators: methodology and user guide, OECD Statistics Working Papers 2005/3 (Paris).

and analyse complex issues across countries while at the same time facilitating the communication of key messages to policy makers and the public. But the use of composite indicators is not without pitfalls.

Poor construction can lead to wrong policy messages and even well-constructed indicators may get 'hi-jacked' to deliver over-simplistic policy messages (see the pros and cons of composite indicators in Box II.3.1). Therefore the OECD in its *Handbook on constructing composite indicators* (2005) proposes ten steps in support of building and using sound composite indicators. In this note these steps are closely followed tough in a slightly different order to better reflect our primary aims.

3.2.2. Step 1: Theoretical framework and structure of indicators

The multi-dimensional conceptual framework developed in the *Public finances in EMU – 2008* report provides the theoretical backing for structuring and selecting QPF indicators. Under this framework QPF is defined as "all fiscal policy arrangements and operations that support achieving macroeconomic goals of fiscal policy, in particular long-term economic growth." ([39]) The framework distinguishes five dimensions or channels through which public finances can impact long-term economic growth drawing on the theoretical and empirical literature on the links between public finances and long-term economic growth. The five QPF dimensions include: (i) the size of government (*dimension QPF 1*), (ii) the fiscal position and sustainability (*dimension QPF 2*), (iii) the composition, efficiency and effectiveness of expenditure (*dimension QPF 3*), (iv) the structure and efficiency of revenue systems

([39]) It should be noted that public finances decisions clearly reflect many more policy objectives than economic growth, some of which may be in conflict with the growth objective, at least in the short run.

(*dimension QPF 4*) and (v) fiscal governance (*dimension QPF 5*).

A set of QPF indicators has been identified for each of the key five QPF dimensions which, however, have been summarised into more than five composite indicators given the complexity of some dimensions. This includes, particularly, the composition, efficiency and effectiveness of expenditure (dimension QPF 3).

Policy and performance indicators are needed for analysing QPF. *Policy indicators* are directly controlled by policy makers reflecting choices in each public finance dimension (e.g., the level of education and health spending or tax rates on labour and capital). *Performance indicators* link the policy choices with outcomes. Thus, they measure policy effectiveness (e.g., linking education spending with education attainment or the labour income tax rate with labour market participation).

But defining appropriate performance indicators is problematic. Outcomes are often hard to measure and therefore have to be proxied by output indicators. For example, education attainment can be measured by the OECD PISA indicators (standardised test of competence of secondary-school students) but the score may not adequately reflect the employability of human capital. Moreover, how policy choices impact outcomes depends on a number of other factors. Some of these other factors are also policy variables. For instance the effectiveness of education spending may be linked to institutional choices such as the freedom of schools to decide on the use of funds. Furthermore, some factors that shape outcomes are not under the control of fiscal policy, e.g. the effectiveness of health spending also depends on eating habits and life-style choices. Given these issues, simplification is inevitable but being at the same time transparent should help avoiding misinterpretation of the results.

3.2.3. Step 2: Data selection

QPF indicators should fulfil some minimum economic and statistical standards. These include relevance (economic rationale), statistical reliability, country and time coverage as well as timeliness. These criteria have been suggested by the OECD and were also used by the Working Group on Methodology to Assess Lisbon-related Structural Reforms (LIME group) for selecting a set of relevant indicators. ([40])

- *Economic rationale:* The economic rationale of the indicator should be straightforward so as to promote public understanding and debate on policy issues. Therefore, the variables used here are based on a broad literature review (see Part III of the *Public finances in EMU – 2008* report). Nevertheless, due to the complexity of the links between QPF and growth the selection of indicators should be understood as an on-going process that can be revised as new empirical findings emerge and new indicators are developed and become operational.

- *Statistical reliability:* Indicators need to be statically reliable. That means they should rely on a sound and comparable methodology with few revisions over time. Preferably, each individual indicator should come from the same data source for all countries, but in some cases one may need to combine several data sources to achieve broad country coverage. For structural and macroeconomic indicators sourced from Eurostat, Eurostat's assessment is used; as regards other indicators (e.g. those from the IMF, World Bank or World Economic Forum) the statistical reliability is judged mainly based on the level of standardisation across time and countries and methodologies used.

- *Country coverage:* Indicators should be available and comparable across most EU Member States. A wide geographical coverage is also necessary to ensure sufficient variability in the indicators. Moreover, having indicators for non-EU OECD countries could be useful as comparators for different QPF policy choices.

- *Timeliness:* Indicators should be regularly updated without too great a time lag. However, one should bear in mind that significant changes for some indicators are only expected in the medium run given the usual policy lags.

([40]) See European Commission and Economic Policy Committee (2008).

- *Time coverage:* A long coverage is not needed to compare the status quo of QPF across countries but it is needed to deepen the empirical analysis on the links between QPF and growth and assess changes over time.

When choosing indicators, one needs to weigh the various selection criteria. In principle, all selection criteria should be met. However in practice, there may be trade-offs between the economic relevance of a variable and its statistical properties, which requires making choices in the data selection process. The principle that is followed here is to give greater weight to the economic relevance than some statistical properties, such as country coverage, if the availability of the indicator for a sub-set of EU Member States (possibly combined with data for non-EU OECD countries) enriches the analysis for the countries in the sample and possibly outside the sample.

A review of over 400 potentially relevant QPF indicators yields that a sufficiently large number fulfils the selection criteria. ([41]) However, two key weaknesses need to be acknowledged. First, the time coverage of data is rather poor. Consequently, a review of QPF over time and a more thorough macroeconomic analysis of the links between the various QPF dimensions and long-term economic growth using times series data is currently difficult. This is further complicated by the fact that the most recent data are in many cases only available for 2005 or 2006. The second weakness is the country coverage of non-EU OECD countries. Thus, a desirable benchmarking also against countries outside the EU, which could be useful to compare different policy approaches, would only be possible in selected areas.

The calculations of composite indicators here are based on 81 indicators (Table II.3.1 and Annex II.2). These have been combined into composite indicators for three of the five main QPF dimensions and seven sub-composite indicators for the particularly complex QPF dimension 3 (composition, efficiency and effectiveness of expenditure). Moreover, due to the difficulties of capturing expenditure efficiency, the calculations start by using only outcome variables for dimension QPF 3. But in a later step (described in Section II.3.2.) the outcome is also related to the various expenditure categories.

Table II.3.1: **Number of indicators used for composite calculations**

	QPF dimensions	Number of variables
QPF1	Size of government	1
QPF2	Fiscal position and sustainability	6
QPF3	Composition, efficiency and effectiveness of expenditure	47
QPF3.1	Composition expenditure	8
QPF3.2	Education	6
QPF3.3	Health	3
QPF3.4	R&D	8
QPF3.5	Public infrastructure	7
QPF3.6	Public order and safety	8
QPF3.7	General public services	7
QPF4	Structure and efficiency of revenue systems	21
QPF5	Fiscal governance	6
Total		81

Source: Commission services.

3.2.4. Step 3: Normalisation of data

Before combining any indicators into composite indicators, the various variables need to be transferred into comparable units. ([42]) Specifically, indicators have been standardised by the following formulas:

(1) Score x = (Indicator – average of indicator) / Standard deviation of indicator * 10

(2a) Average of indicator = average of EU-15

(2b) Standard deviation of indicator = standard deviation of EU-15

Multiplying the score by the factor ten (simply serving as a magnifying glass), assuming that observations are normally distributed and assigning a maximum and minimum score to outliers would deliver scores ranging from -30 to +30. The corresponding ratings and probability ranges are presented in Table II.3.2.

([41]) See for details Barrios and Schaechter (2009).

([42]) This normalisation procedure follows the one of the LIME group and would therefore also allow to interchanging variables between the two work streams.

Table II.3.2: **Distribution and classification of scores**

	Summary score	Classifi-cation of score	Distribution	Probability under normal distribution
10<x<=30	+ +	"very good"	σ<x-E(x)	16%
4<x<=10	+	"good"	0.4σ<x-E(x)<σ	19%
- 4<x<=4	0	"average"	-0.4σ<x-E(x)<0.4σ	31%
-10<x<=- 4	-	"poor"	-σ<x-E(x)<-0.4σ	19%
-30<=x<=-10	- -	"very poor"	x-E(x)<-σ	16%

Source: Commission services.

As benchmarks we have used the unweighted EU-15 average. This is meant to abstract from the on-going catching-up process in the new Member States and gives equal weights to EU-15 Member States' different policy choices and outcomes allowing, for example, to review how a Member State compares to its peers as regards the efficiency of education spending independent of the size of its economy. Other benchmarks than the EU-15 could be easily calculated to address specific research or policy interests.

3.2.5. Step 4: Dealing with data gaps

For indicators with great economic relevance but which are available only for a subset of countries and/or time points one needs to decide on how to fill the data gaps. Here the most recent observation, as long as it was not older than 10 years, has been used. ([43]) Or, in the absence of any recent data, the gap was filled with the score of an indicator that was highly correlated with the missing one. For instance if the mortality rate was missing for a given country, the score on life expectancy, which belongs to the same QPF sub-category, was used to fill in the missing value. When no comparable indicator was available, the EU-15, EU-27 or new Member States average was applied. Countries most heavily affected were Bulgaria, Cyprus, Malta, Latvia and Romania. ([44])

([43]) In practice, most lagged variables were taken from the years 2006 to 2004. We did not fill all the missing interim years since for the moment we have focused only on one data point (the latest available observations).

([44]) For a description on various methods to fill data gaps see OECD (2005). Eventually, a first best approach would be for Member States to provide the missing information.

3.2.6. Steps 5-6: Methodologies for creating composite indicators

This section combines the individual indicators into composite indicators and conducts robustness checks. The weighting scheme is closely linked to the data selection process since the exclusion of certain variables corresponds to the assignment of a weight of zero. Thus, checking the robustness of the weighting scheme and selecting the indicators may become an iterative process.

Of the various methods that can be used to combine scores into composite indicators, we have explored four methods. They differ mostly in their weighting schemes, which is potentially important for the final score of the composite indicator if, for instance, the scores of two indicators belonging to the same QPF category point in two different directions. However, this risk is minor, if all indicators provide similar information concerning the relative performance of countries within a given QPF category.

3.2.6.1. Linear unweighted average

The first option is to simply calculate the averages of all indicators in each QPF dimension (and sub-dimension). A drawback with this method is that it assigns an equal weight, thus equal importance, to each indicator and thus assumes that all indicators provide the same level of information. The danger is that the most critical variable gets overshadowed by less-relevant indicators. This could for example be the case, when the indicator already reflects a number of policy decisions and outcomes. For instance, the public debt-to-GDP ratio reflects a history of past fiscal positions, interest payments and risk premiums and in many cases the size of government. Thus, when the debt ratio is included in dimension QPF 2 together with other variables, such as the current fiscal position, one would need to consider whether an equal weighting is misleading. A similar issue arises, when too many variables with similar information are used for a composite indicator.

3.2.6.2. Linear weighted average

Given the downsides of unweighted averages, weights could be assigned to better reflect the differences in importance of the selected indicators. The weighting scheme could be based

on economic priors or more formally economic modelling. For the calculation here a very simple weighting scheme was chosen. Instead of giving equal weight to all indicators in all dimensions, averages for indicators with similar information content were constructed. For example, for dimension QPF 4 (structure and efficiency of revenue systems), for which 21 indicators were available, they have been sorted into five groups (by topic) and the unweighted average scores for each group were calculated. The averages of these five groups then enter into the overall composite indicator for dimension QPF 4. More complex weighting schemes would be possible but since the number of choices is ultimately infinite, instead of focusing on some specific weights, the random weights method, described below, was preferred as an alternative.

3.2.6.3. Random weights method

A third option is to calculate composite indicators as linear averages and allocate the weights randomly. Results presented below are obtained using a pseudo-random numbers distribution following the approach developed by Marsaglia (1997). ([45]) Each indicator entering a given QPF dimension is randomly given a weight on the interval [0,1], and each randomly generated number is then scaled-down in order for the sum of weights to be equal to one. This process is repeated 100 times in the results presented below.

The random weights methods has several advantages but also drawbacks. On the positive side, it completely abstracts from any prior regarding the relative importance of each variable. Moreover, it allows an assessment of the potential bias related to the choice of alternative weightings. In particular, the average value of the weights obtained from the random generation process can be compared with the range of possible outcomes (maximum and minimum scores). The drawback related to the use of random weights is that the weighting process is a black box.

([45]) This method has, for example, been used when constructing the Commission services' index on the quality of medium-term budgetary frameworks and fiscal rules presented in the 2007 and 2006 issues of the *Public finances in EMU* report.

3.2.6.4. Weights based on factor analysis

Factor analysis, which is a special case of principal component analysis, can be used to construct weights based on the construction of summary indicators. This method is usually considered for the construction of composite indicators when, as in the current case, the number of the underlying indicators is large. ([46]) When using factor analysis, preference is given to indicators that have low correlation to alternative indicators and a high degree of cross-country differences across all dimensions in order to obtain weights that are the most representative of a countries' specificities. ([47])

The advantage of the factor analysis, or more generally, principal component analysis, is that it allows keeping all variables entering a given composite indicator while avoiding redundancy of information. The drawback of the factor analysis is that it is potentially sensitive to the existence of missing values in a given year which may make the temporal analysis more difficult.

3.2.7. An application to calculate composite indicators

The four alternative options described above have been tested in building composite indicators for QPF. Since each method has its merits and drawbacks, the final choice of a method should be an empirical one, where the robustness of the results can be contrasted by comparing results obtained with different methods. If no single method appears to have a clear advantage over the others, the preference should be given to the simplest and clearest method since it will most likely be best understood.

The composite indicators calculated on the basis of three weighting methods (linear unweighted average, random weights and factor analysis) ([48]) are shown in Table II.3.3. The indicators entering

([46]) This is the case also of the Product Market Regulation index developed by the OECD, see Nicoletti et al. (2000).

([47]) For more technical details on the use of factor analysis for constructing composite indicators see, e.g. OECD (2005).

([48]) The composite indicators calculated on the basis of simple linear weighted averages can be found in Barrios and Schaechter (2009). As mentioned above, the approach and results differ only slightly from the linear unweighted average by grouping some sub-indicators, thus giving them a combined, rather than an individual weight.

Table II.3.3: **Illustrative QPF composite indicators: alternative weighting methods 1/ 2/**

	QPF1. Size of government	QPF2. Fiscal position and sustainability			QPF3. Composition, efficiency and effectiveness of expenditure 3/			QPF4. Structure and efficiency of revenue systems			QPF5. Fiscal governance		
Country	**Average**	**Average**	**Factor**	**Random**	**Average**	**Factor**	**Random**	**Average**	**Factor**	**Random**	**Average**	**Factor**	**Random**
BE	-6.0	-2.0	-2.1	0.0	0.0	-1.7	0.0	-5.7	-11.4	-5.6	-3.4	-2.3	-3.4
BG	14.2	2.9	2.9	2.4	-14.9	-13.8	-14.9	8.0	9.5	7.3	-21.0	-21.0	-21.0
CZ	5.9	-8.1	-8.5	-3.9	-4.0	-3.0	-4.1	3.7	2.5	3.6	-2.3	-1.0	-2.2
DK	-9.1	8.3	8.6	5.0	4.0	4.6	4.1	-4.4	0.1	-3.7	6.4	6.2	6.5
DE	3.1	-0.5	-0.5	-0.5	1.5	1.4	1.4	-4.2	-8.5	-4.2	0.3	2.1	0.4
EE	21.7	7.6	7.8	1.6	-3.4	-4.4	-3.4	3.4	-1.3	2.8	-0.1	-2.5	-0.2
IE	16.8	1.1	1.0	0.0	0.5	0.4	0.5	7.8	18.8	8.3	-2.8	-8.9	-3.1
EL	4.2	-3.2	-3.2	-2.8	-7.3	-7.7	-7.4	6.0	1.7	5.5	-6.7	-14.2	-7.2
ES	12.4	0.4	0.3	1.3	-4.5	-3.8	-4.5	3.3	3.7	2.9	0.9	4.3	1.0
FR	-12.7	-4.8	-4.9	-2.5	1.2	0.8	1.2	-1.7	-4.9	-2.1	-3.0	-3.5	-3.1
IT	-5.3	-2.1	-2.1	-1.4	-6.7	-6.8	-6.8	2.2	-1.5	1.9	-6.5	-6.1	-6.5
CY	3.1	1.3	1.5	2.2	-1.7	-2.3	-1.8	13.1	22.1	12.4	-9.1	-18.0	-9.7
LV	13.9	1.5	1.5	-2.1	-7.1	-9.1	-7.1	-4.4	-6.1	-5.2	1.5	-12.1	0.7
LT	18.3	0.8	0.7	-2.3	-6.4	-7.6	-6.4	-0.1	-3.5	-0.7	-6.2	-6.8	-6.4
LU	14.8	-1.1	-1.3	0.6	1.6	-0.4	1.5	-0.3	3.3	-0.1	-3.4	-8.0	-3.3
HU	-8.2	-7.9	-8.3	-4.1	-6.7	-8.0	-6.7	-2.6	-7.5	-3.3	-11.8	-16.5	-12.2
MT	5.7	0.6	0.5	-1.5	-4.8	-3.9	-4.7	9.5	17.1	9.1	-1.9	-0.4	-1.8
NL	-0.5	-2.2	-2.3	-1.1	2.5	2.5	2.5	-3.3	-1.5	-2.8	6.9	8.9	7.1
AT	-4.7	-0.1	-0.1	-0.8	3.1	2.2	3.1	-0.2	-4.6	-0.5	-3.0	-3.2	-3.0
PL	5.9	2.3	2.3	-2.5	-9.4	-8.1	-9.5	0.5	3.9	1.0	-6.9	-6.5	-6.8
PT	-0.3	-3.3	-3.5	-2.8	-3.5	-4.3	-3.4	2.7	3.7	2.0	-9.0	-11.1	-9.3
RO	15.9	-1.4	-1.5	-3.5	-12.3	-12.0	-12.4	1.5	0.6	1.0	-14.1	-14.1	-14.1
SI	4.2	-4.7	-4.9	-2.2	-1.6	-1.9	-1.6	-6.3	-5.6	-6.1	-2.3	0.0	-2.3
SK	15.9	-3.7	-3.9	-3.4	-9.4	-7.0	-9.4	7.9	7.1	7.7	-5.4	-2.9	-5.5
FI	-3.4	8.0	8.3	6.7	5.3	4.8	5.2	-3.0	-2.6	-2.8	1.9	3.5	1.9
SE	-12.7	8.6	8.8	5.2	3.7	4.9	3.7	-3.8	-5.2	-3.8	9.3	12.2	9.4
UK	3.5	-9.1	-9.2	-10.8	-1.1	1.8	-1.1	4.1	8.6	4.6	4.3	9.1	4.6
Average	4.3	-0.4	-0.4	-0.9	-3.0	-3.1	-3.0	1.3	1.4	1.1	-3.2	-4.2	-3.3
Std. dev.	10.0	4.7	4.9	3.5	5.2	5.1	5.2	5.1	8.3	5.0	6.6	8.6	6.7

Notes: 1/ Scores range from -30 to +30 with an EU-15 average of 0. Assuming a normal distribution a value between -10 and -30 is deemed as very poor ('--'), between -4 and -10 as poor ('-'), between -4 and +4 as average ('0'), between +4 and +10 as good ('+') and between +10 and +30 as very good ('++').
2/ The three calculation methods are linear unweighted average, factor analysis and random weights average.
3/ The composite indicator of QPF 3 is include here only for illustrative purposes. To better grasp the complexity of the issues, one should look at the seven sub-indicators.
Source: Commission services.

each QPF dimension are those listed in Table II.3.1 for data available until September 2008.

The results obtained for the composite indicators are very similar independent of the method used. For dimension QPF 1, only one variable is used to measure the size of government (public expenditure-to-GDP ratio). Thus, obviously there is no difference across methods. For the other dimensions, the results from the linear weights and random weights methods are very similar. The results from the factor analysis method are also in line with the other two methods, but deviations are a bit larger in particular for QPF 2 and QPF 5. This reflects the use of only six variables for both dimensions, which may be too low for a factor analysis. A formal comparison of the outcomes of the three methods is undertaken in the following section.

The scores of the composite QPF indicators are in line with conventional wisdom. It should be noted, however, that the most recent data entering the QPF indicator calculations are from 2007 and thus do not yet reflect the implications on public finances from the financial and economic crisis. The results show that no country outperformed in all dimensions, but some countries showed weaknesses in a number of areas. For example, Hungary combined a relatively large size of government sector, with a weak fiscal position and sustainability, shortcomings in the composition, efficiency and effectiveness of expenditure and weak fiscal governance. Italy also showed weaknesses in all of these areas. Countries with a

Table II.3.4: **Illustrative QPF indicators for sub-dimension QPF 3 (composition, efficiency and effectiveness of expenditure)**

	QPF 3.1 Composition of public spending		QPF 3.2 Education		QPF3.3 Health		QPF 3.4 R&D and innovation		QPF 3.5 Public infrastructures		QPF 3.6 Public order		QPF 3.7 Public administration	
Country	Average	Rank	Average	Rank	Average	Rank	Average	Rank	Average	Rank	Average	Rank	Average	Rank
BE	-0.5	19	5.6	4	-1.8	13	1.6	9	0.4	8	-1.8	13	-3.4	12
BG	-2.8	21	-8.3	23	-23.2	25	-13.5	27	-14.7	26	-22.2	27	-19.4	27
CZ	8.7	6	5.6	5	-5.9	19	-6.8	16	-5.4	16	-10.0	22	-14.5	23
DK	3.5	11	4.7	7	-4.8	17	1.9	8	5.2	3	4.4	6	13.1	1
DE	-9.2	26	1.7	14	-0.3	9	6.3	2	5.0	4	6.3	3	0.5	7
EE	8.5	7	2.1	12	-15.4	22	-4.6	14	-3.7	14	-7.5	20	-2.9	10
IE	7.0	8	7.4	2	-0.3	10	2.6	7	-8.6	21	-4.5	17	-0.4	8
EL	-13.6	27	-6.9	21	-1.1	12	-9.9	24	-7.2	19	-1.5	12	-10.9	18
ES	0.7	15	-12.6	25	2.1	3	-9.5	22	-3.3	13	-3.7	16	-5.4	13
FR	2.7	12	1.0	16	1.2	5	4.9	3	2.3	6	-0.6	11	-2.9	11
IT	-1.7	20	-8.3	22	0.9	6	-7.2	18	-7.2	18	-8.5	21	-15.4	24
CY	1.3	13	3.6	10	-2.6	15	-11.8	26	-2.3	11	6.6	2	-6.9	15
LV	11.6	2	-1.2	19	-25.1	27	-9.1	19	-10.5	24	-2.1	14	-13.3	20
LT	10.1	3	1.8	13	-20.7	24	-3.7	13	-6.2	17	-11.7	23	-14.2	22
LU	-3.0	22	-2.9	20	1.6	4	0.0	10	8.5	1	2.2	8	4.5	6
HU	-0.2	17	0.4	17	-16.2	23	-7.0	17	-7.6	20	-3.1	15	-13.0	19
MT	0.2	16	-15.8	26	-5.0	18	-5.3	15	-10.3	22	9.3	1	-6.7	14
NL	-4.0	24	4.5	8	-0.6	11	4.1	4	6.8	2	0.0	9	6.9	4
AT	-3.7	23	6.6	3	0.3	8	3.4	5	3.6	5	6.2	4	5.1	5
PL	1.0	14	3.0	11	-12.2	20	-10.1	25	-13.9	25	-16.1	25	-17.4	25
PT	12.9	1	-18.4	27	2.2	2	-9.6	23	-3.0	12	-0.4	10	-8.1	17
RO	9.0	4	-9.4	24	-24.5	26	-9.3	20	-17.4	27	-16.9	26	-17.9	26
SI	8.9	5	3.7	9	-2.4	14	-3.6	12	-5.3	15	-4.8	18	-7.4	16
SK	-6.5	25	1.5	15	-14.9	21	-9.4	21	-10.3	23	-12.3	24	-14.0	21
FI	-0.5	18	12.6	1	0.7	7	9.3	1	-0.6	9	5.8	5	9.7	2
SE	4.1	10	5.1	6	3.2	1	2.9	6	1.2	7	2.4	7	7.1	3
UK	5.3	9	-0.2	18	-3.3	16	-0.7	11	-2.1	10	-5.8	19	-0.9	9
Average	1.8		-0.5		-6.2		-3.5		-4.0		-3.3		-5.5	
Std. dev.	6.5		7.5		9.1		6.4		6.7		7.9		9.2	

Notes: 1/ Scores range from -30 to +30 with an EU-15 average of 0. Assuming a normal distribution a value between -10 and -30 is deemed as very poor ('--'), between -4 and -10 as poor ('-'), between -4 and +4 as average ('0'), between +4 and +10 as good ('+') and between +10 and +30 as very good ('++').
2/ Scores were calculated using a linear unweighted average.
Source: Commission services.

number of strengths in QPF are, for example, Luxembourg with a relatively small government sector, low debt and strong fiscal position and relatively efficient expenditure and revenue systems. It has weaknesses, however, in its fiscal governance framework. Finland, on the other hand, has a relatively large government and exerts some inefficiencies in its revenue system, but it excels in the efficiency of certain expenditure categories and sustainability as well as operates under a strong fiscal governance framework.

Given the complex nature of dimension QPF3, the results of seven sub-indicators are reported here. Table II.3.4 indeed shows that most recently acceded Member States get high scores in the sub-dimension QPF 3.1 (composition of expenditure) since for their catching-up process they have been using a higher share of public resources for growth-enhancing items than the old Member States. However, this is not yet fully reflected in outcomes so that the scores for sub-dimensions QPF 3.2-3.7 are far below the EU-15 average. While this hints at efficiency issues, the scores do not include a direct relation between input and outputs. Another look at this relation is taken in Section II.3.2.9.

3.2.8. Step 7: Robustness checks

The robustness of the above results is checked in three ways. First, robustness is gauged regarding the filling of missing values. Second, robustness is assessed regarding the choice of the weighting method. And third, the random weights method is used to assess the potential variability and bias depending on the values of the weights assigned to each variable.

3.2.8.1. Checking the robustness of imputing missing data

As regards filling of missing values, the results of the composite indicators are relatively robust. Since most data gaps exist in QPF 3, the robustness of that dimension for imputing data is

tested by comparing the scores and rankings for dimension QPF 3 obtained when filling missing values versus the alternative of simply dropping the corresponding variable as long as this variable is missing for at least one of the 27 EU countries. The results show that in most countries filling data gaps has a small impact on the value of the composite indicator but the ranking obtained with the two alternative methods differs by a maximum of four positions for three countries.

3.2.8.2. *Checking the robustness of the weighting methods*

The alternative weighting methods for calculating the composite indicators give very similar country results. While Table II.3.4 above showed the score of the three methods, the ranking of each country for the three alternative methods can also be compared. It turns out to be very similar across the alternative weighting methods. A systematic comparison in rankings can be done by computing the Spearman rank correlation coefficients and calculating their significance level. ([49]) The value of this correlation coefficient is bounded between 0 and 1 with a higher value depicting a higher correlation. The calculations in Table II.3.5, indeed confirm that the ranking obtained using the three alternative weighting methods are very close. In nearly all cases the Spearman rank correlation coefficients is above 0.85. Non-reported *p-values* also show that these correlation coefficients are highly significant. Simple correlation coefficients were calculated for the scores (Table II.3.5) showing even higher values. The only exception is for dimension QPF 2, where the rankings from the factor analysis deviate more strongly from the other methods. This reflects the rather low number of variables in the composite indicator. Overall, one can summarise that in a few cases the absolute values of the scores differ somewhat depending on the weighting method used, but the relative countries' performance is very similar independently of the three weighting methods.

Table II.3.5: **Robustness test for using alternative weighting methods: correlation coefficients of results**

	Spearman ranking correlation coefficient (using country rankings)			Simple correlation coefficient (using country scores)		
QPF2. Fiscal position and sustainability	Average	Factor	Random	Average	Factor	Random
Average	1			1		
Factor	0.783	1		1.000	1	
Random	0.998	0.786	1	0.854	0.853	1
QPF3. Composition, efficiency and effectiveness of expenditure	Average	Factor	Random	Average	Factor	Random
Average	1			1		
Factor	0.959	1		0.972	1	
Random	0.998	0.9634	1	1.000	0.972	1
QPF4. Structure and efficiency of revenue systems	Average	Factor	Random	Average	Factor	Random
Average	1			1		
Factor	0.863	1		0.886	1	
Random	0.994	0.895	1	0.996	0.909	1
QPF5. Fiscal governance	Average	Factor	Random	Average	Factor	Random
Average	1			1		
Factor	0.858	1		0.882	1	
Random	0.998	0.876	1	0.999	0.895	1

Source: Commission services.

3.2.8.3. *Using the variance of the random weights results for a robustness check*

Finally, the use of random weights provides information on the potential variability of the QPF composite indicators depending on the values of the weights assigned to each variable. Graph II.3.1 illustrates this variability by plotting for each country the range (i.e., minimum and maximum values) of the scores obtained by using random weights together with the average value of the composite indicator for the dimensions QPF 2-QPF 5. The variability of the composite indicators is by far the lowest for QPF 3 and QPF 4. ([50]) This result is not entirely surprising given the very large number of variables entering these two dimensions. If very few variables enter a given composite indicator and if these variables provide very different scores, changing the weights for each variable can significantly influence the final value of the composite indicator. The case of the QPF 2 composite indicator illustrates this point quite well and shows that, for instance, for countries such as Romania, Latvia or Lithuania, the differences in scores can be very wide depending on the values given to each variable entering this QPF dimension given that all three

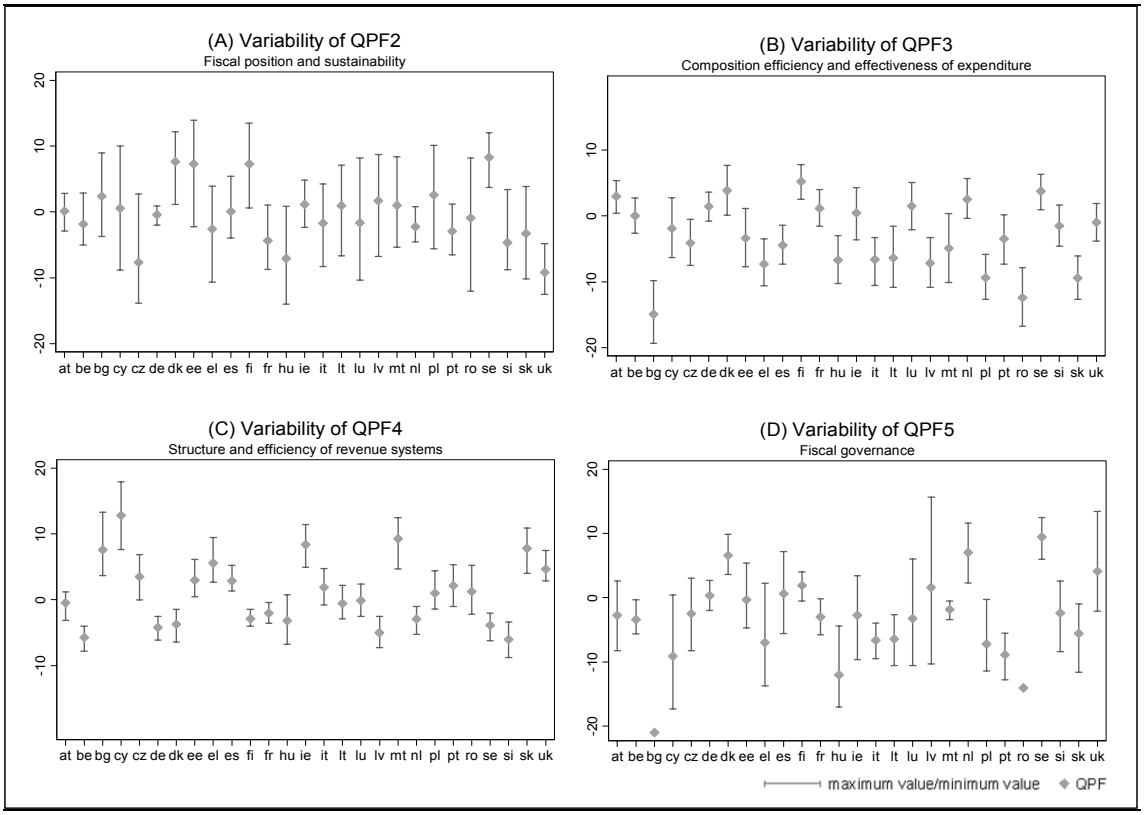
([49]) Assuming two variables X and Y are being ranked in two alternative ways x_i and y_i the Spearman correlation coefficient compares A and B's ranking results by calculating the Pearson correlation coefficient on ranks. Assuming that n is the number of comparable values of the two variables, the Spearman rank correlation coefficient formula is see

$$\rho = \frac{n\left(\sum x_i y_i\right) - \left(\sum x_i\right)\left(\sum y_i\right)}{\sqrt{n\left(\sum x_i^2\right) - \left(\sum x_i^2\right)}\sqrt{n\left(\sum y_i^2\right) - \left(\sum y_i\right)^2}}$$

Kendall, M.G. and J.D. Gibbons, 1990, *Rank correlation methods* (Oxford University Press).

([50]) The composite indicator for dimension QPF 3 is only included for illustrative purposes. To better grasp the complexity of the issues, one should look at the seven sub-indicators.

Graph II.3.1: **Range of composite indicators using the random weights method**



Source: Commission services.

countries get a high score for their low level of debt but a low score for their fiscal positions.

Independently of the QPF dimension, the recently acceded Member States usually tend to display a higher variability in their QPF composite indicators than the EU-15. This is due to more sub-indicators pointing in different directions for recently acceded Member States. The finding would indicate that the QPF indicators are also less precise for these countries.

3.2.9. Back to public spending: a closer look at the efficiency and effectiveness of expenditure

To go beyond the mere use of outcome variables for dimension QPF 3 and get a better grasp of spending efficiency, we propose the following illustration. The above calculation of composite indicators for dimensions QPF 3.2-3.7 focused entirely on outcome variables without putting them in relation to monetary or technical inputs. Ideally, one would use efficiency scores for each spending category using a range of parametric and non-parametric methods. However, since those scores are currently available only for a few spending items, at this stage simplifications are needed. ([51]) Thus, we propose to assess countries performance relative to the best performing countries and recalculate the composite indicators for a selection of QPF dimensions. The selected dimensions are education (QPF 3.2), health (QPF 3.3), R&D and innovation (QPF 3.4) and public infrastructure (QPF 3.5). We focus on these four categories since they are most directly linked to growth. There is a also likely to be a more direct link between public spending in these areas and policy outcome which is less clear-cut for the other two sub-dimensions.

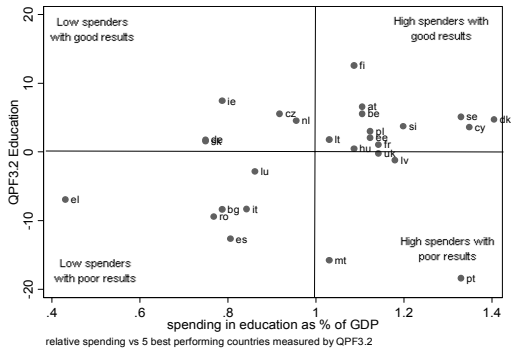
A country's relative performance is assessed against the benchmark of the five best performers. In particular, the average public spending-to-GDP

([51]) For R&D spending, work is underway by the Commission services (see Cincera et al., 2009). For education spending, see e.g. Afonso and St. Aubyn (2006) and Sutherland et al. (2007) but those studies do not cover all 27 Member States.

ratios is calculated for those five countries that have achieved the highest composite indicator scores for the selected dimensions. This is to assess whether the other countries achieve their results with a more economical or higher use of resources than those five countries. Thus, each individual country's spending-to-GDP ratio is put in relation to the five best performers' spending ratio. If the ratio is bigger than one, the country spends more; it is less than one, the country spends less. Thus, those countries that spend more but achieve far worse outcomes, can be considered inefficient. However, in addition, to the already mentioned problems in adequately capturing the effectiveness of public spending, one needs to be aware here that recent spending initiative may only pay off in future years, so outliers should be carefully assessed. ([52])

The exemplary results for education are plotted in Graph II.3.2. There appears to be an overall positive relationship between the quality of education policies (measured by the composite indicator of QPF 3.2) and public spending in education. However, some countries (in the upper right quadrant) pay a high price to achieve their outcomes. For example, Denmark, Sweden and Slovenia use relatively many resources but have achieved worse education outcomes than Finland who has spent less. Most problematic, however, are countries in the lower right quadrant. In this case, Portugal and Malta have spent not only more than some of the best performers but have achieved far below average outcomes in education. Thus, this signals an inefficiency problem. ([53])

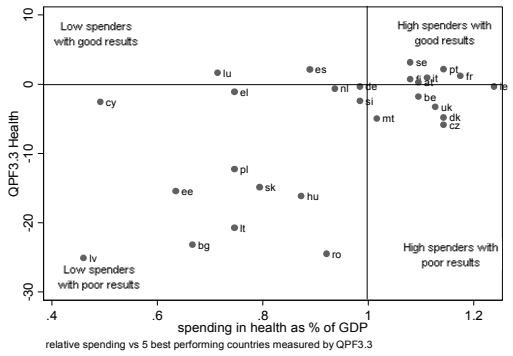
Graph II.3.2: **Illustrative composite indicator in education and public spending in education**



Notes: QPF3.2 is the composite indicator with a score ranging from -30 to +30. Spending in education is measured as the ratio of country x to the average of the five countries with the highest score in the QPF 3.2 education composite indicator.
Source: Commission services.

Graph II.3.3 shows the results for health spending for which inefficiencies seem to be lower than for education spending. However, the stronger positive relation between the level of spending and performance indicates that in particular for the countries in the lower left quadrant there is room to improve the health situation by allocating more resources to this sector.

Graph II.3.3: **Illustrative composite indicator in health and public spending in health**



Notes: QPF3.3 is the composite indicator with a score ranging from -30 to +30. Spending in education is measured as the ratio of country x to the average of the five countries with the highest score in the composite indicator of the corresponding QPF dimension.
Source: Commission services.

Overall, the broad positive link between outcome and input variables in the illustrations justifies a simplification but large deviations for individual countries point to the need for more detailed analysis. Therefore, efficiency scores from other studies and/ or the type of analysis provided above

([52]) In particular, to measure progress made by education and training systems the Education Council has agreed on an updated set of benchmarks. They cover the whole life-long learning perspective, from participation in early childhood education, the basic skills of 15-year olds and early education leavers, through tertiary level attainment and the participation of adults in life-long learning. Some but not all of these aspects have been captured by the indicators used for the calculations in this section.

([53]) This finding for Portugal seems to contradict several efficiency studies, which find its education spending to be among the most efficient countries (see e.g. Afonso and St. Aubyn, 2006 and Sutherland et al., 2007). This may be explained by the fact that the latter have used technical inputs (e.g. student-teacher ratios) rather than monetary inputs and correct for external factors (such as per capita income and parental education attainment). Moreover, a greater range of output indicators to reflect the quality of education policies is used in the present study.

can provide useful additional information to assess the efficiency and effectiveness of the individual spending components.

3.2.10. Steps 9 and 10: How to use the QPF indicators

Composite indicators on QPF can be a powerful communication tool but can also easily be misinterpreted. Therefore, one should be careful on how to present and disseminate QPF composite indicators, for what policy issues to apply them and with what information to supplement them. In particular, one needs to be transparent about their construction and be able to decompose them into their underlying values.

The main purpose for the Commission services work is to use QPF composite indicators as an internal rough compass for identifying a country's strengths and weaknesses in QPF compared to its peers and possibly over time. This would then be followed up by a thorough review of the identified priority areas and possibly their interrelations with other policy areas. Thus, it should be clear that QPF indicators can only be one of several analytical tools to review QPF-related issues.

3.3. PROGRESS ON PROVIDING DATA ON GOVERNMENT EXPENDITURE BY FUNCTION (COFOG DATA)

3.3.1. Mandate and motivation

In May 2008 the ECOFIN Council confirmed earlier requests, addressed to Member States and to Eurostat, in order to further step up their efforts in the provision and dissemination of detailed data on government expenditure by function (COFOG) ([54]), in the context of the analysis of the quality of public finances. While taking note of the progress achieved with the delivery of COFOG II level figures, and in order to allow further analysis of past trends in the composition of public expenditure, the Council concluded that the remaining gaps need to be filled in as soon as possible, and best efforts must be pursued to make data publicly available on the basis of the results of the end-2008 data transmission. This request has been further reinforced in the ECOFIN conclusions of November 2008 in the context of the update of the EFC Status Report on information requirements.

3.3.2. Some methodological aspects

COFOG classifies government expenditure purposes into ten main categories (divisions–seen as broad objectives of government, and known as the COFOG I level breakdown). These divisions are further broken down into "groups" (COFOG II level) and in some cases even into more detailed "classes" (COFOG III). COFOG data are an integral part of the ESA95 Transmission Programme. The transmission of COFOG I level breakdown is compulsory for the years 1995-onwards and takes place twelve months after the end of the reference period. Information on a more detailed COFOG II level is provided on a voluntary basis.

Being compiled under the ESA95 (European System of Accounts) framework, the COFOG dataset follows all of the methodological guidelines set in ESA95 ([55]) and the conventions adopted in the working groups of national accountants. In particular, the general government sector according to ESA95 is not equivalent to the public sector, since the public sector also includes all public corporations. This can affect the inter-country comparability of spending on a particular COFOG group since in some Member States public universities, hospitals or transport companies can be included as part of general government, whereas in others they are classified as public corporations. From this it can be inferred that users should be aware of the various administrative arrangements in place in countries before undertaking detailed analysis and cross-country comparisons. From the practical point of view, disaggregating the data into COFOG II level statistics may also create some practical compilation problems affecting data quality. It should also be stressed that for some Member States the compilation of back series for historical

([54]) Classification of the Functions of Government–for its detailed breakdown see: http://unstats.un.org/unsd/cr/registry/regcst.asp?Cl=4

([55]) http://circa.europa.eu/irc/dsis/nfaccount/info/data/esa95/esa95-new.htm

years is very difficult because of the lack of source information.

COFOG has several links with other international statistics and classifications. ([56]) In particular, since COFOG systematises the purposes of all the government activities and it interrelates with many more specialized statistical domains, e.g. R&D statistics, environmental accounts, health accounts, the European System of Integrated Social Protection Statistics (ESSPROS), and the International Standard Classification of Education (ISCED) and UOE data collection for education.

3.3.3. Data availability

COFOG I level data are available in Eurostat databases. As COFOG II level data are requested on a voluntary basis, Eurostat proceeds to publish this breakdown, if considered of sufficient quality, for those countries that agreed with their publication or did not explicitly opposed. While, at the end of 2006, no data was publicly disseminated, currently Eurostat has released COFOG II level data for over twenty countries (some of them flagged as "provisional"). ([57])

Data presented in this section come from the latest transmission of ESA95 table 11 (COFOG dataset) at the end-December 2008, for those countries which transmitted data and did not object to their publication. For Ireland, Slovenia and Romania the full COFOG II level structure is not available. For most countries 2007 data are provisional.

3.3.4. The major spending categories

In 2007 on average (weighted by countries' GDP) the government primary expenditure ([58]) devoted to social protection in EU27 and euro area amounted to 18.0% and 18.7% of GDP, respectively. The next COFOG functions in ranking were health (6.6% and 6.5% of GDP) and education (5.1% and 4.8% of GDP). Spending on economic affairs was close to 4% of GDP (3.8% in both, EU27 and euro area) and slightly less primary expenditure was dedicated to general public services (3.5% in EU27 and 3.7% in the euro area). Less than 2% of GDP was spent on average on each of the further COFOG functions, i.e. public order and safety, defence, recreation, culture and religion, housing and community amenities, and environmental protection (Graph II.3.4).

Looking at particular countries (Graph II.3.5), social protection is the most important COFOG spending purpose for all of them, ranging in 2007 from close to or over 22% of GDP in France, Denmark and Sweden to 10% or below for Ireland, Cyprus, Romania, Estonia, and Latvia (with the lowest level of 8.4% of GDP). ([59]) For more than half of the Member States and Norway the next spending purpose in importance would be health.

From the structure of government expenditure according to COFOG purpose (COFOG II level data) it appears that COFOG categories exceeding 3% of national GDP, in any of the Member States ([60]) are old age, hospital services, public debt transactions, family and children, sickness and disability, executive and legislative organs, transport, pre-primary and primary education, secondary education and general services. These groups are concentrated in five COFOG divisions: three of them relating to social protection and general public services, two of them to education, and one to health and economic affairs.

The most important COFOG group in all Member States is old age, ranging in 2007 from 12.7% of GDP in Greece to 2.9% in Ireland. Only Norway devotes more of its government expenditure to a different purpose (sickness and disability; 5.9% of GDP), whereas its spending on old age amounted in 2007 to 4.9% of GDP.

([56]) This is further developed in the Manual of sources and methods on COFOG statistics, which can be found at: http://epp.eurostat.ec.europa.eu/portal/page?_pageid=1073,46587259&_dad=portal&_schema=PORTAL&p_product_code=KS-RA-07-022

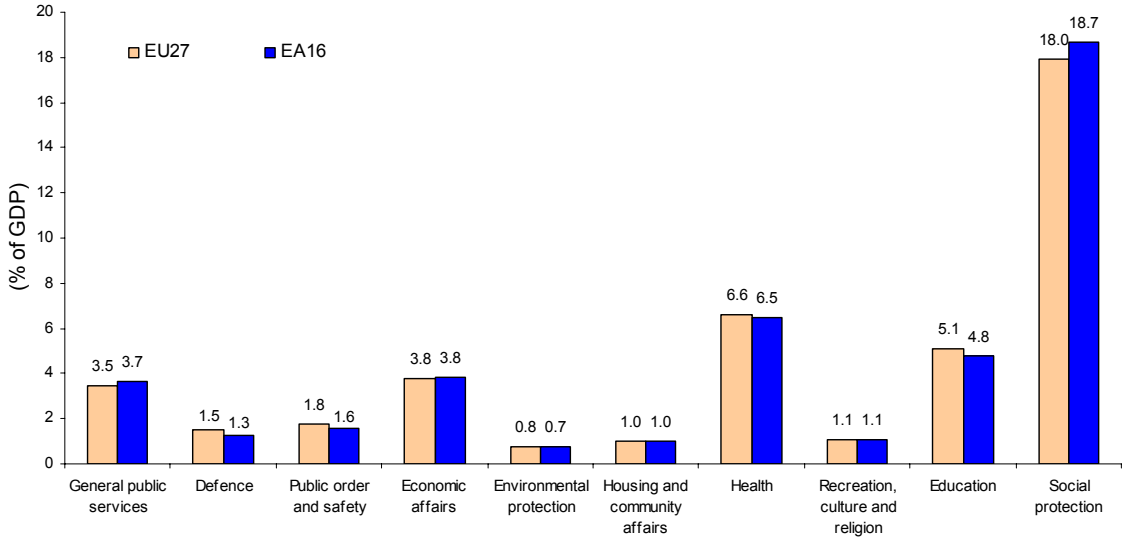
([57]) The data are available at: http://epp.eurostat.ec.europa.eu/portal/page?_pageid=0,1136173,0_45570701&_dad=portal&_schema=PORTAL

([58]) Primary expenditure is defined as total expenditure of general government excluding payable property income, that consists mostly from interest paid by government.

([59]) For inter-country comparisons it should be considered that in some countries social benefits are paid and reported gross of income tax that can inflate the social protection related spending.

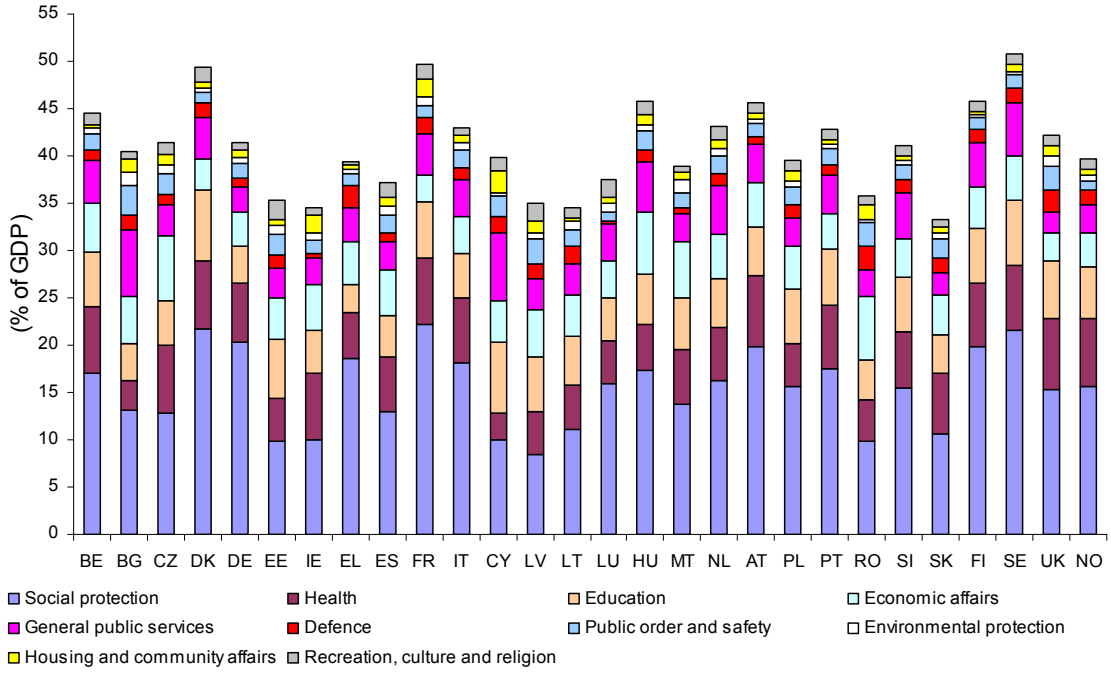
([60]) Ireland and Romania, which both delivered partial datasets, have not reported so far any COFOG group exceeding 3% of GDP. In the Slovenian partial dataset only expenditure on 'old age' exceeds 3% of GDP.

Graph II.3.4: **Structure of the EU's and euro area's government expenditure by COFOG I function, 2007**



Source: Eurostat.

Graph II.3.5: **Structure of government expenditure by countries, 2007**



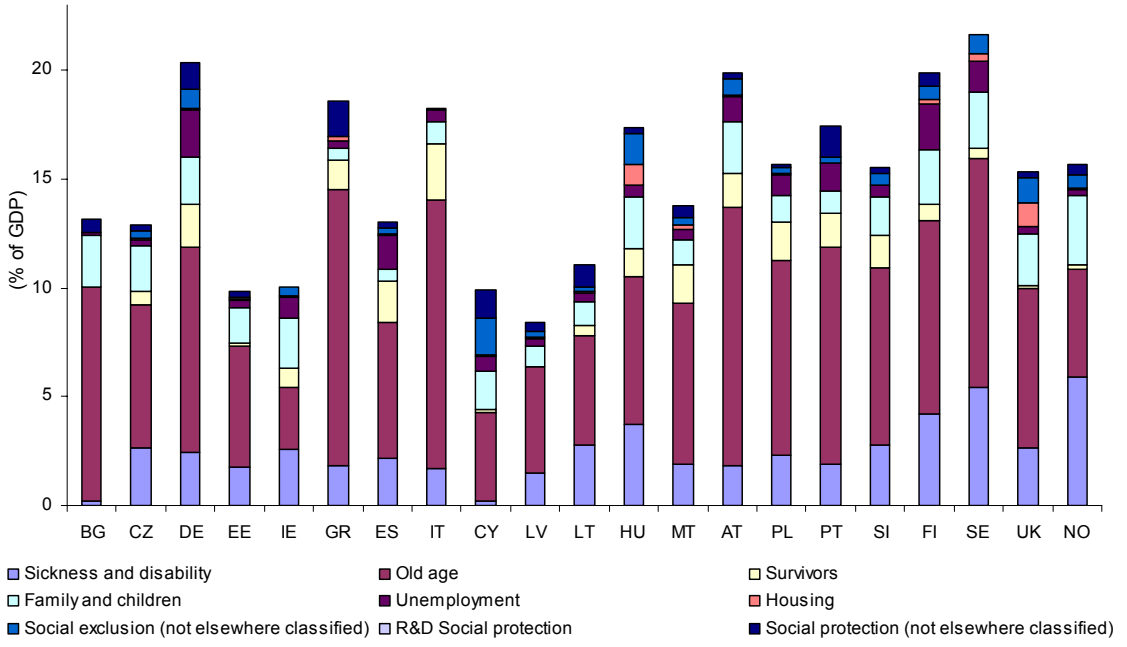
Source: Eurostat.

Old age is in general the only COFOG group for which expenditure exceeds 3% of GDP in Bulgaria (ignoring one-off transactions), Germany, and Lithuania.

The next sections present a detailed breakdown of the three most important COFOG divisions in most countries (social protection, education and health).

Social protection, being the largest expenditure at COFOG first level purpose, integrates three

Graph II.3.6: **COFOG II level breakdown of 2007 government expenditure on social protection**



Source: Eurostat.

categories indicated before as main COFOG groups. As it can be observed from Graph II.3.6, in eleven Member States (Bulgaria, Czech Republic, Estonia, Greece, Italy, Latvia, Malta, Austria, Poland, Portugal, Slovenia) expenditure on old age constitutes over 50% of all spending on social protection (for Bulgaria the share being almost 75%, and for Italy and Greece above 67%).

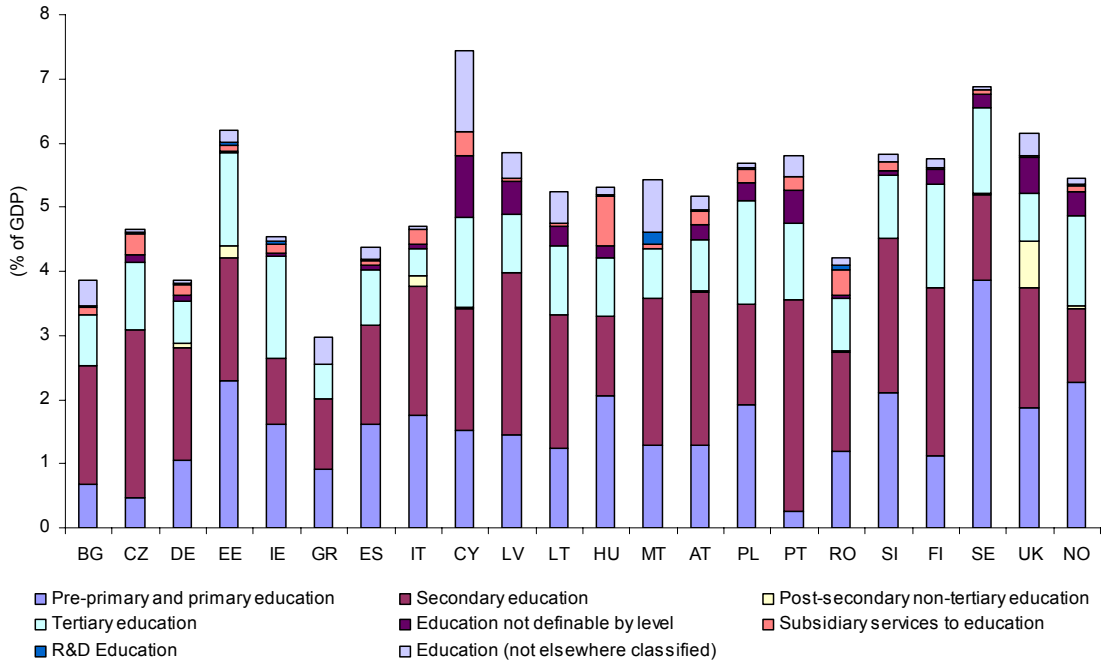
The detailed structure of the expenditure on education in 2007 shows a concentration on three education levels (Graph II.3.7): pre-primary and primary education, secondary education, and tertiary education.

Graph II.3.8 shows the detailed structure of health spending. In 18 countries hospital services exceed two fifths of the total division expenditure, with the United Kingdom reporting a share over 90%. Seven Member States report expenditure on outpatient services over 30% (Belgium, Germany, Italy, Portugal, Slovenia, Finland and Sweden). Portugal and Greece spend over 30% of their government health expenditure on medical products, appliances and equipment. Over 50% of health spending for Cyprus has been assigned to the category 'not-elsewhere classified'.

3.3.5. Conclusions

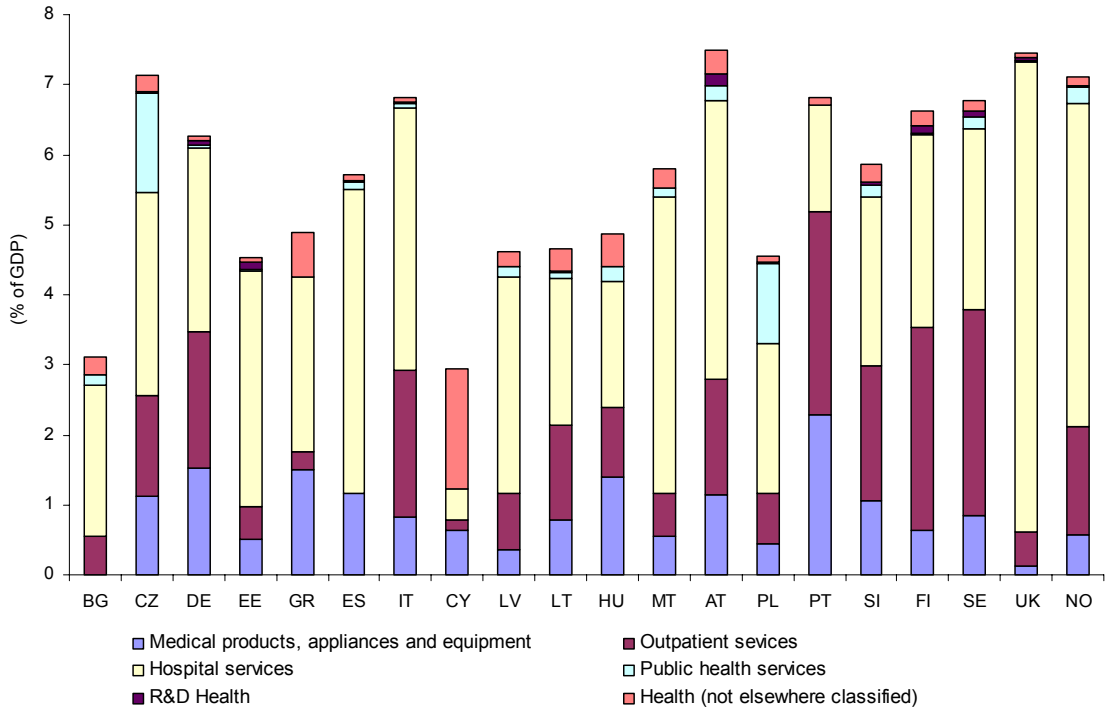
To conclude, the availability of COFOG detailed data has very substantially increased in recent years. Notwithstanding the methodological and practical difficulties, they provide a relevant input for the analysis of the quality of public finances. With the help of the countries represented in the Task Force on COFOG, significant progress has also been achieved in the comparability with other related statistics, analysis of country practices, and on methodological issues which have been collected in the manual referred above. Eurostat reported to the EPC Working Group on Quality of Public Finances and to the EPC in March 2009, and the progress was acknowledged positively by both groups. It is expected that countries will further transmit more detailed information in next transmissions, in order to promote their use for institutional users, international organisations, and the public in general. Over the medium term, COFOG data could possibly also be extended to the regional level as indicated in a recent technical assistance study.

Graph II.3.7: **COFOG II level breakdown of 2007 government expenditure on education**



Source: Eurostat.

Graph II.3.8: **COFOG II level breakdown of 2007 government expenditure on health**



Source: Eurostat.

4. FISCAL RULES, INDEPENDENT INSTITUTIONS AND MEDIUM-TERM BUDGETARY FRAMEWORKS

4.1. INTRODUCTION

The elements that form domestic fiscal frameworks have been drawing growing attention from economists and policy-makers over the last years. Fiscal arrangements such as national fiscal rules, independent public institutions involved in the budget process and medium-term budgetary frameworks for fiscal planning have been the main subject of a relatively recent research stream, which has been triggered by the increasing resort to these elements in the fiscal policy making.

For instance, the report on the SGP reform endorsed by the European Council in March 2005 states that *"national budgetary rules should be complementary to the Member States' commitments under the Stability and Growth Pact"* and that *"national institutions could play a more prominent role in budgetary surveillance to strengthen national ownership, enhance enforcement through national public opinion and complement the economic and policy analysis at EU level"*.

Against this background, the Commission launched at the end of 2005 two comprehensive surveys on national fiscal rules and independent public institutions in the EU member States over the period 1990-2005. The results and the analysis of these surveys were published in the Public *finances in EMU – 2006* report. ([61]) Subsequently, a third survey on the existing domestic medium-term budgetary frameworks in the EU was also conducted by the Commission in 2006. Similarly, the main analytical results were published in the *Public finances in EMU – 2007* report. ([62])

This section provides the main results of the updates of these three surveys carried out in 2008 in the context of the Working Group on the Quality of Public Finances (WGQPF) attached to the Economic and Policy Committee (EPC). These updates follow the mandate by the May 2008 ECOFIN council and attempt to complement the heterogeneous reporting on these issues included in the SCPs. The content and the structure of the questionnaires remained broadly unchanged in order to have comparable data and information.

4.2. NUMERICAL FISCAL RULES IN EU COUNTRIES

Like in the previous survey, the 2008 questionnaire followed the definition proposed by Kopits and Symansky (1998), which states that a fiscal rule is "a permanent constraint on fiscal policy, expressed in terms of a summary indicator of fiscal performance". ([63]) In turn, the indices encapsulating the strength and coverage of domestic fiscal rules over the period 1990-2008, which were firstly computed on the basis of the former survey, were now recalculated using the new data set. While Box II.4.1 describes the findings of the 2005 survey, the next two sub-sections provide the main descriptive results of the new sample as well as the changes in the index values based on this updating.

4.2.1. Main descriptive results based on the 2008 questionnaire

The 2008 update confirms the previously observed tendency for a growing use of fiscal rules in the EU countries. Whilst fiscal rules in place grew from 16 in 1990 to 61 in 2005, this figure further increased to 67 in 2008. ([64]) ([65]) Since the previous survey, five countries, three of which from the new Member States, have implemented seven new fiscal rules (BG, FR, LT, HU and PT). In the same

([61]) http://ec.europa.eu/economy_finance/publications/publication423_en.pdf

([62]) http://ec.europa.eu/economy_finance/publications/publication338_en.pdf

([63]) Kopits, G. and S. Symansky (1998).

([64]) The total number of rules in 2005 departs slightly from the figure published in the 2006 *Public Finances Report*. This is due to the inclusion of Bulgaria and Romania in the survey, which were not previously considered, and some adjustments in the sample stemming from more accurate information provided by some countries (e.g., rules reported in the 2005 survey which were not yet in force).

([65]) Rules applied to more than one government tier they are accounted according to the number of sub-sectors concerned (e.g., a balanced budget rule for regional and local governments would represent two rules), the sum of fiscal rules in 2008 would amount to 76 (70 in 2005).

Box II.4.1: **Key findings in the 2005 survey on national fiscal rules**

The 2005 survey found that fiscal rules had become a wide-spread policy tool across Member States. In 2005, 61 national fiscal rules were in force, up from less than 20 in 1990. At the central government level, which represented nearly 25% over the total sample, rules targeted mostly public expenditure. In contrast, at regional and local levels, fiscal rules typically capped the budget balance or the debt level (close to 50% over the total number of rules). Fiscal rules at the local level also generally exhibited some strong design features compared to other government layers. In particular, many were enshrined in law or the constitution and included an automatic correction mechanism if violated. However, in terms of coverage local fiscal rules naturally accounted only for a small share of the general government sector. By contrast, a significant number of rules applied to the general and central government are based on political agreements and the only cost for non-compliance is reputational.

A number of weaknesses in the design of the rules were also identified. In particular, only few rules included independent monitoring and pre-defined enforcement mechanisms (generally rules for sub-national governments). On top of that, media visibility, which could serve as an informal enforcement device, was rather limited in most cases. The scant resort to revenue rules, which can pre-define how excess revenues should be allocated, was another weakness since they are the most direct tool to keep the spending of windfall revenues in good times into check. A more extensive use of these rules could have helped address pro-cyclicality and the deficit bias.

On average, fiscal rules were stronger in the old than the recently-acceded Member States but variations across countries were large. Among the old Member States, the United Kingdom, Spain, the Netherlands and the Scandinavian countries stood out with a particularly strong set of rules. Estonia, Poland, Slovakia, Slovenia and the Czech Republic had, among the new Member States, the strongest rules in place. Three countries, Cyprus, Greece and Malta, did not rely at all on fiscal rules.

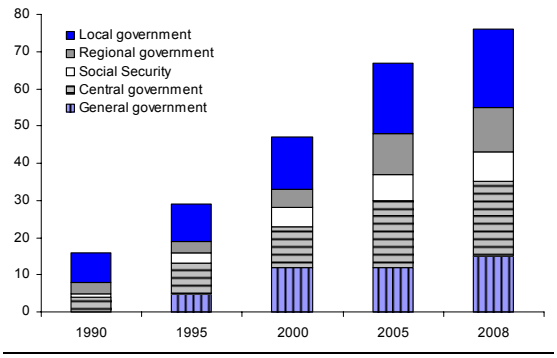
Empirical analysis showed a positive link between the quality of national numerical fiscal rules and fiscal discipline in the EU countries. In particular, it suggested that an increase in the share of government finances covered by numerical fiscal rules leads, ceteris paribus, to an improvement in the budget balance. The analysis also found that the influence of fiscal rules on budgetary outcomes depends on the rules' characteristics. Strong rules, enshrined in law or constitution and supported by pre-defined enforcement mechanisms, seem, on average, to have had more influence on fiscal discipline than weak rules.

period, one country reported to have abolished one rule (FI) whereas three Member States remained in 2008 without fiscal rules (CY, EL and MT). Box II.4.2 gives further details on the new fiscal rules.

Similarly to the 2005 survey, a growing number of fiscal rules applied to the general and central governments have been introduced over the most recent years, which contrasts with the prevailing situation in 1990 with a majority of rules covering regional and local government sub-sectors. In relative terms, rules applied to the general and central government accounted for 25% in 1990 compared to nearly 50% in 2008 (see Graph II.4.1).

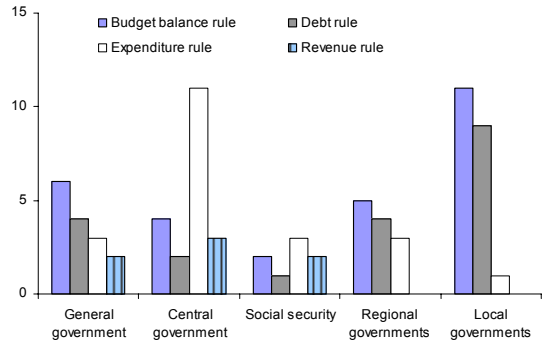
More than one third of the existing fiscal rules in the EU countries are budget balance rules (including golden rules) while expenditure and debt rules represent about one quarter in both cases. By contrast, revenue rules account for less than 10 percent. In line with the 2005 results, most of budget balance and debt rules are applied to regional and local governments. This departs from the central government and social security sub-sectors, which resort more often to expenditure rules (see Graph II.4.2).

Graph II.4.1: **Fiscal rules in the EU Member States by sub-sector**



Note: See footnote (65).
Source: Commission services.

Graph II.4.2: **Fiscal rules in the EU Member States by type of rule**



Note: See footnote (65).
Source: *Commission services.*

Fiscal rules currently in place show a large diversity in terms of target definition (see Table II.4.1). More than one third of budget balance rules target a balanced budget and only a few of them are defined on a structural basis. Nearly fifty percent of debt rules, mostly applied to territorial governments, establish debt limits according to the repayment capacity (i.e., the ratio between debt service and revenues). Expenditure rules are evenly distributed between those setting up spending ceilings and those targeting expenditure growth rates. While ceilings are generally defined on a nominal basis, the number of targeted growth rates in nominal and real terms is similar in both cases. Finally, two thirds of revenue rules oblige fiscal authorities to pre-define the allocation of windfalls revenues.

Other characteristics of the existing fiscal rules have hardly changed between 2005 and 2008. For instance, most of fiscal rules continue to lack an independent monitoring and the poor enforcement mechanisms in case of non-compliance remain in place. Overall, the main results of the 2005 survey described in Box II.4.1. still apply.

4.2.2. Changes in the index of strength of fiscal rules in the EU Member States

The indices that capture the strength and the coverage of fiscal rules, which were firstly computed on the basis of the 2005 survey, have now been recalculated using the information of the updated questionnaire. This has been done following the methodology outlined in the *Public finances in EMU – 2006* report, which is briefly summarised in Box II.4.3.

While the number of fiscal rules has increased (see previous section), not many reforms to strengthen the existing rules were implemented. Thus, the fiscal rules index shows an improvement mostly in those countries that adopted new rules. This holds particularly for some recently acceded Member States (BG, LT and to a lesser extent HU). France's new rules also raised its fiscal rule index while the new Portuguese rule left the country below the EU average since the new rule only applies at the regional level. Finland's index fell because a debt rule applied to the central government was abolished. In all other Member States, the reforms were generally very minor or related to aspects not covered under the fiscal rules index. ([66]) As a result, the overall index for the EU-27 only improved slightly between 2005 and 2008 (see Graph II.4.4).

Overall, the positive relationship between the fiscal rule index and budgetary outcomes found in the previous survey still apply on the basis of the updating. Thus, those EU Member States with the highest index values show on average better budgetary outcomes. This is reflected in Graph II.4.3, in which the country groups scoring higher in the fiscal rule index also tend to register higher primary cyclically-adjusted balance figures over the most recent years.

([66]) Sweden's slight decline in its fiscal rules index between 2005 and 2008 is due to some changes in authorities' reporting on their existing rules, including on the legal basis and media visibility.

Box II.4.2: Main features of the new fiscal rules over the period 2005-2008

Two new budget balance rules were in place in 2008 (HU and PT). In Hungary, the rule requires since 2007 that the general government primary budget balance be in surplus. As for Portugal, the state budget law defines annual net indebtedness limits for regional governments. In Poland, a political agreement entered into force in 2006 to cap the nominal central budget deficit at PLN 30 bln aiming at its gradual reduction as a percentage of GDP. However, this rule was abolished in 2008 and the government announced recently the tightening of the current debt rule.

An indication that countries are becoming increasingly aware of the problem of pro-cyclical fiscal policy is reflected in the adoption of two new revenue rules. In France, the government has to define ex ante how possible revenue surpluses (compared to plans) will be allocated. This rule had already been approved at the time of the 2005 survey but only entered into force in 2006, so that it is presented only now in terms of the fiscal rules index. In Lithuania, the deficit of the approved state budget shall be reduced by excess revenue of the current year. Nevertheless, even with these additions, revenue rules are so far only in place in six countries (DK, FI, FR, LT, LV, NL), and not all of them pre-established the allocation of higher-than-anticipated revenues to deficit and debt reduction.

New expenditure rules entered into force in Bulgaria and Lithuania. The limit for the general government in Bulgaria is to maintain an expenditure-to-GDP ratio of less than 40%. With a ratio of 37.8% in 2007, the limit was not yet binding. Lithuania links the expenditure ceiling to revenues. Specifically, it requires that if the arithmetic average of the general government operating balance, i.e. the general government balance, for the previous five years was negative, then the annual growth rate of the planned state budget appropriations may not exceed ½ of the average growth rate of the state budget revenue of the past five years.

France's new debt rule, adopted in 2005 and in force since 2008, applies to the social security. The rule pursues to keep unchanged the terms of "social debt" repayment. Therefore, any debt increase in the social security sub-sector should be matched by a revenue increase in order to avoid any term repayment extension.

Table II.4.1: **Target definitions by type of rule**

Budget Balance Rules	Golden rules	Balanced budget rules	Nominal ceiling	Ceiling as a % GDP	Rules in structural terms	Total
	5	10	7	1	3	26
Debt Rules	Debt ceiling in nominal terms	Debt ceiling as a % of GDP	Debt ceiling related to repaiment capacity	Other		Total
	5	3	8	2		18
Expenditure Rules	Nominal expenditure ceiling	Real expenditure Ceiling	Expenditure growth rate (nominal)	Expenditure growth rate (reall)	Other	Total
	5	2	4	3	3	17
Revenue rules	Tax burden as a % GDP	Rule related to tax rates	Allocation of extra revenues	Other		Total
	0	1	4	1		6

Source: Commission services.

Box II.4.3: Criteria used to calculate the index of strength of fiscal rules

A fiscal rule is considered strong if it is likely to be respected and may significantly influence the conduct of fiscal policy. Following the methodology applied in the *Public finances in EMU – 2006* report, the measurement of the strength of fiscal rules is based on five criteria:

(i) The statutory base of the rule: A rule enshrined in the constitution or in law is considered stronger than a rule based on a simple political agreement or commitment.

(ii) The nature of the body in charge of monitoring the respect of the rule: When the monitoring is carried out by an independent body that may send an early warning in case a risk of non-compliance is identified, the probability that rule is respected can be expected to be higher.

(iii) The nature of the body in charge of enforcement of the rule: Like in the previous criterion, the resort to a non-partisan institution to ensure that appropriate measures will be adopted in case of non-compliance is considered to promote the respect of the rule.

(iv) Enforcement mechanisms of the rule: The existence of automatic correction mechanisms and the possibility to impose them in case of deviation from the rule can be expected to foster compliance.

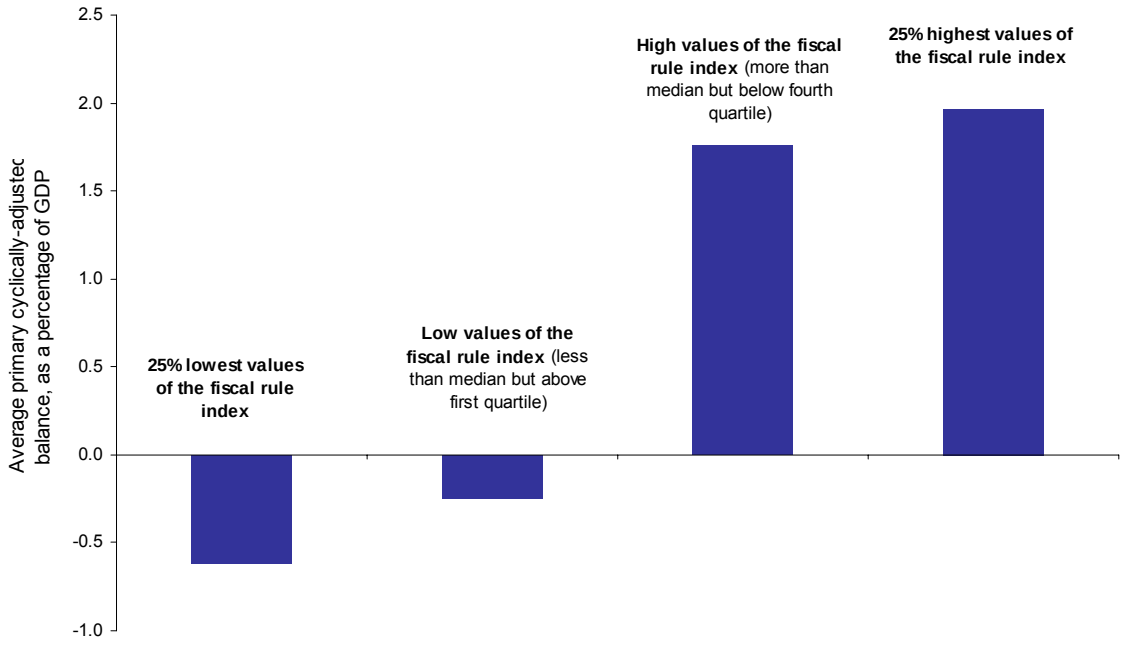
(v) Media visibility of the rule: The effectiveness of fiscal rules is considered to be higher when they may benefit from a large media visibility and non-compliance is likely to cause a public debate.

Since there is no theoretical prior on how to weigh the criteria, they were aggregated using 10,000 random weights with the median of the index reported here. This measurement of 'strength' of fiscal rules was combined with a measurement of the 'coverage' by weighting the rule with the percentage share of the general government finances covered by the rule. The index was standardised so that the average over the sample (1990-2008) is zero and the standard deviation is one (see the 2006 Public Finances in EMU for further details).

While the EU on average saw some improvements, the reported reforms appear to be more important in some of the new Member States allowing them to slightly overtake the euro area as group in terms of the fiscal rule index (see Graph II.4.4). The calculated index, however, also has some caveats that need to be recalled in light of such comparisons. It is based on self-reporting and may not yet reflect the actual experience with a fiscal rule when it has just entered into force. Moreover, the index cannot always capture how binding a rule is. For example, Bulgaria's debt rule foresees a ceiling of 60% of GDP which is far away from the current debt stock of about 18% of GDP in 2007. This is also the case for other new Member States' fiscal rules such as Latvia and Poland. ([67]) All in all, direct comparisons of the index between individual Member States or between groups of EU countries must be interpreted cautiously.

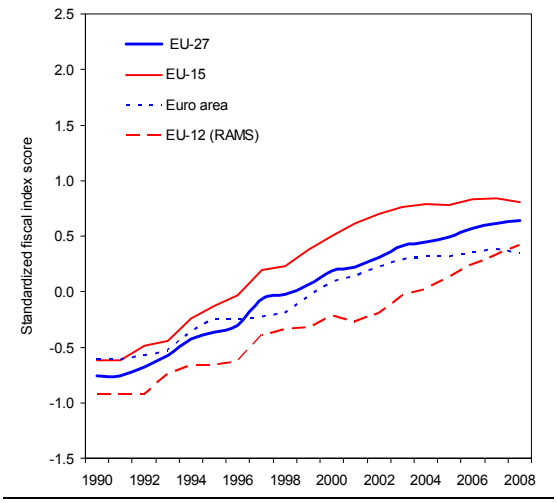
([67]) On top of that, some of these fiscal rules implemented in some of the new Member States are very often applied to the whole of the general government sector or to the central government plus the social security sub-sector (i.e., a very large coverage), which further increases the score of the fiscal rule index. Finally, the gradual incorporation of some Member States with no fiscal rules in the euro area pulls down the average index value for this group of countries .

Graph II.4.3: **Fiscal rule index and average primary cyclically-adjusted balance in the EU-27 in the period 2000-2008**



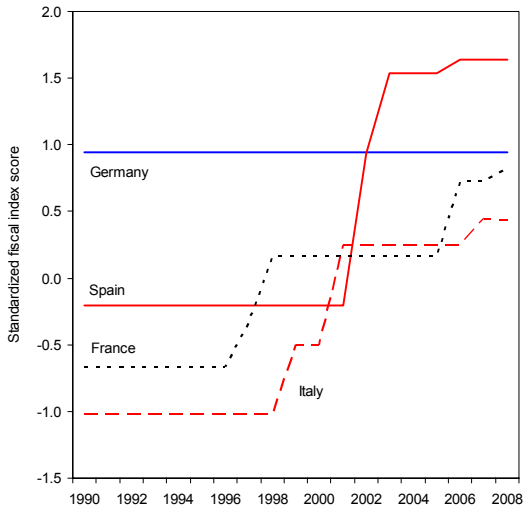
Source: Commission services.

Graph II.4.4: **Development of the fiscal rule index in the EU**



Source: Commission services.

Graph II.4.5: **Development of the fiscal rule index in selected EU Member States**



Source: Commission services.

The evolution of the index reflects in some cases the reform efforts implemented at the end of the 1990s with a view to joining the first bunch of countries adopting the single currency. In particular, this was the case of France and Italy. By contrast, Spain embarked upon a major fiscal framework reform after joining the euro and Germany did not introduce any significant change over the last twenty years (see Graph II.4.5).

Finally, in line with the results based on the 2005 dataset, statistical and econometric exercises suggest the existence of a link between numerical fiscal rules and budgetary outcomes. ([68]) Table II.4.2 reports the results of the econometric

([68]) See Public Finances in EMU 2006.

analysis linking the fiscal rule index and budgetary outcomes measured by the cyclically-adjusted primary balance (CAPB) in the EU27 Member States. The coefficient reflecting the influence of the fiscal rule index on the CAPB is positive and significant, which indicates that an increase in the value of the index (i.e. a larger coverage and/or stronger features of fiscal rules) leads, ceteris paribus, to lower deficits or higher surpluses.

Table II.4.2: **Influence of fiscal rules on the primary CAB (EU-27, 1990-2008)**

	Dependent variable:
Explanatory variables:	Cyclically-adjusted primary balance (CAPB)
Lagged output gap	-0.058 (-1.1)
Lagged CAPB	0.54 (9.6)***
Lagged debt ratio	0.04 (3.6)***
Fiscal rules index	0.48 (-2.7)**

(1)Estimation method: OLS with time and country-fixed effects. Heteroscedasticity robust and adjusted for 27 clusters standard errors. The "t" values are reported in parentheses. *, **, and *** denote, respectively, significance at the 10, 5 and 1 percent level. Coefficients for fixed-effects are not reported.
Source: Commission services.

4.3. INDEPENDENT FISCAL INSTITUTIONS

The 2008 update keeps the definition of independent public bodies in the field of fiscal policy unchanged with respect the previous survey. Thus, national fiscal agencies are defined as independent public bodies, other than the central bank, government or parliament that prepare macroeconomic forecasts for the budget, monitor fiscal performance and/or advise the government on fiscal policy matters. These institutions are primarily financed by public funds and are functionally independent vis-à-vis fiscal authorities. Courts of Auditors are included in the survey if their activities go beyond the accounting control and cover any of the tasks mentioned above. Similarly to fiscal rules, the 2008 questionnaire to update the previous survey was kept largely unchanged in order to have comparable and homogenous information.

4.3.1. Main results of the 2008 survey

As expected, the main results of the 2008 update provided no major changes compared to the previous survey (see Box II.4.4 for a brief overview of the prevailing situation in 2005).

In 2008, 27 independent bodies were implemented in 17 EU Member States. Only two countries set up two new bodies (SE and PT) while only minor changes to the existing institutions were introduced in DK and DE.

In most new Member States however, independent fiscal institutions are still the exception. An attempt to explain why fiscal institutions have so far been less popular in new Member States, despite their rapid catching up in other aspects of fiscal frameworks, has not yet been elaborated. A plausible hypothesis can be raised in this respect. The long history of fiscal institutions in most of old Member States and the few recent reforms and additions suggest that the introduction of these independent bodies usually takes more time than the implementation of other institutional arrangements such as fiscal rules or medium-term budgetary frameworks. Actually, establishing fiscal institutions requires sufficient financial and human resources and capabilities, in contrast to mostly legal changes needed for building up other aspects of the fiscal frameworks. Particularly, some of the small new Member States may have preferred to concentrate their human resources for monitoring fiscal policy making in the central bank, ministries of finance and academia leaving them thin-spread to add fiscal councils.

Whether in the future Member States will increase their reliance on these independent bodies will likely be impacted by the experiences in the old Member States and outside the EU as well as by country-specific circumstances, including resource constraints.

4.3.2. Main recent initiatives related to independent institutions in the EU Member States.

Sweden established a new fiscal institution with the aim to provide an independent evaluation of Swedish fiscal policy. The newly created Fiscal Policy Council, which took office on 1st August 2007, supplements the already existing fiscal institution (the National Institute of Economic Research) that prepares non-binding macroeconomic forecasts for the budget.

Box II.4.4: **Key findings in the 2005 survey on independent fiscal institutions**

In 2005, 25 independent public bodies were implemented across 17 EU Member States, of which 13 belonged to the former EU-15. Those countries having more than one independent institution were DE (4), AT (3) and ES and FR (2). The new Member States reporting the implementation of such an institution were EE, LT, HU and SI.

Overall, 19 institutions released analyses of budgetary developments while 15 issued normative recommendations related to the conduct of fiscal policy. Institutions providing macroeconomic and fiscal forecasts amounted to fifteen. However, among the latter only four Member States (BE, NL, AT and SI) relied on independent fiscal institutions to provide the macro forecasts for the budget preparation and medium-term fiscal planning. Finally, nine institutions carried out these three tasks simultaneously.

According to the survey, these institutions often look back on a long history which may partly explain that they are far more common among old Member States. In new Member States the role of fiscal institutions is often played by central banks, which are not covered under the definition used here. In general, these institutions enjoyed a high reputation and functional independence. Finally, the quality of their work is perceived to be above standards.

The creation of the Fiscal Policy Council, consisting of eight academics and policy experts, was mostly motivated by the desire to increase the transparency of fiscal policy making, thereby ensuring confidence in the fiscal policy framework. This is to be achieved by assessing whether the fiscal policy objectives, including long-run sustainability, the budget target, the expenditure ceiling and the consistency of fiscal policy with the cycle, are met. Additional tasks are to examine the clarity of government proposals and to review the economic forecasts and models used to generate them. To achieve these objectives, the Council prepares an annual report to the government and participates in the public policy debate.

Portugal created a special unit to support the parliament's budget committee, assess public finances and make them more transparent. The Unidade Técnica de Apoio Orçamental (UTA) started operations in November 2006 with responsibilities of assessing the macroeconomic scenarios underlying the budget as well as the budget itself. Moreover, it monitors the implementation of the budget (on a quarterly basis) and the SCP and analyses the budgetary impacts of legislative initiatives under discussions. It produces various reports for the respective tasks.

Finally, two countries (Denmark and Germany) brought minor reforms of their fiscal institutions over the period 2005-2008, however, without implications for the institutions' functions. Denmark merged the Danish Economic Council and the Environmental Assessment Institute DK into the Danish Economic Councils. Germany's Council of Economic Advisers (SVR) has been charged to annually produce an additional report on selected topics to be decided jointly by the government and the council, which could include fiscal issues.

4.4. MEDIUM–TERM BUDGETARY FRAMEWORKS

In line with the surveys on fiscal rules and institutions, the 2008 questionnaire on medium-term budgetary frameworks (MTBFs) hardly changed compared to the 2006 version, and the definition of MTBFs adopted in 2008 was the same as the previous survey. Finally, the approach used to compute an index measuring the quality of domestic budgetary frameworks remained also unchanged.

While the next two sub-sections describe the main changes identified in the 2008 update and the recalculation of the quality index, Box II.4.5

provides the most important findings based on the 2006 data. ([69])

4.4.1. Main descriptive results of the 2008 survey

Overall, medium-term budgetary frameworks (MTBFs) are those policy instruments that allow extending the horizon for fiscal policy making beyond the annual budgetary calendar. Although in all Member States the adoption of the annual budget is the key step in which crucial decisions on fiscal policy are taken, most fiscal policy measures have budgetary implications that go well beyond the yearly budgetary cycle. As a result, a single-year budgetary perspective provides a poor basis for a sound fiscal policy management. This is the main reason justifying that a majority of EU countries have currently adopted an MTBF for fiscal planning.

Barring five Member States (EL, CY, HU, LU and PT), all EU countries declared to have an MTBF in place in 2008. ([70]) This figure did not change compared to the 2006 survey, and no major revisions of the existing frameworks have been implemented either over the last three years. In general, changes have been small and limited to a few countries. Actually, only France has adopted some significant reforms. The main change in the last survey is the larger coverage of the sample, which now includes Bulgaria and Romania.

As a result, the time horizon and the institutional coverage of domestic MTBFs have remained largely unchanged. Most of medium-term frameworks continue to cover a three or four-year period while the whole of the general government is still by far the most common institutional sector targeted.

Likewise, the 2008 survey also showed limited progress in the area of institutional coordination, monitoring, corrective mechanisms and target revisions (see Graph II.4.6). Only France seems to have made some progress related to the required coordination among government layers when setting budgetary targets. However, since both Bulgaria and Romania operate with some coordination mechanisms, the overall picture on this particular aspect appears more favourable than in the 2006 survey results.

Regarding the implementation of a regular monitoring, France and Latvia reported to have implemented new procedures to better oversee budgetary developments. In contrast, no additional corrective mechanisms in case of non-compliance have been put in place since 2006.

Finally, most domestic MTBFs remain rolling and flexible frameworks (i.e., every year the time horizon is extended one additional year while targets for the remaining years can be revised). This includes also the MTBFs of Bulgaria and Romania. In this respect, the reform of the existing framework in France might be an exception. Although fiscal targets are not legally binding, according to the information provided by French authorities the reformed MTBF implies to set a fixed path for fiscal targets, which should not be revised during the time horizon of the framework unless major changes in the underlying macroeconomic assumptions materialise. ([71])

Overall, reform efforts as regards MTBFs have been slow. The revisions implemented since 2006 were, in most cases, relatively minor and contrast with the intentions of implementing new MTBFs or reforming the existing ones as expressed by a number of countries in their recent SCPs. As a result weaknesses in MTBFs are still broad based.

([69]) See the 2007 *Public finances in EMU* report or a comprehensive analysis of the 2006 survey.

([70]) Cyprus reported not to have a domestic MTBF in place. However, the 2007 Stability Programme of Cyprus announced the introduction of a MTBF from 2007 onwards with the objective to better controlling public sector employment growth and containing other current expenditures.

([71]) Specifically, with the expenditure targets being defined in real terms, significant deviations from the projected inflation developments would entail revisions of the nominal spending figures. However, since these targets are not legally binding, only the magnitude and frequency of the target revisions over the next years will allow assessing their constraining character.

Box II.4.5: **Key findings in the 2006 survey**

According to the 2006 survey, a majority of MTBFs covered the whole of the general government sector or a large part of it (e.g. central government plus social security) and had a three or four-year horizon. In most of them, every year the time horizon was extended one additional year with the option to revise budgetary plans for the remaining years (i.e., rolling and flexible MTBFs). Setting a fixed path for budgetary aggregates (e.g., public expenditure) was the exception practiced only in FI, SE and NL, and to a lesser extent in DK and the UK. In general, the level of detail provided by the budgetary projections was rather poor. In a large majority of cases, medium term budgetary projections only covered the main budgetary aggregates (i.e., budget balance and debt figures and total revenue and expenditure developments), while there was hardly any indication on the composition of government spending and receipts. A few countries can, however, be considered outstanding exceptions in this respect (e.g., SI, SE and the UK).

Most of domestic MTBFs exhibited a large number of weaknesses. In particular, scant monitoring and a lack of pre-defined correction mechanisms in case of non-compliance emerged as the main shortcomings. Specifically, MTBFs were not formally monitored in nearly 50% of EU countries whereas corrective measures that take force when targets are missed hardly existed. In the same vein, in only about half of EU Member States the medium-term frameworks and the annual budget preparation appeared relatively well linked while in the remaining countries this link was not clear or seemed weak. In general, the media had only shown a meagre interest in covering governments' compliance with their multiannual fiscal plans, which entail modest reputational costs. Finally, in a number of countries a lack of coordination among government tiers to ensure the respect of fiscal targets included in the MTBFs came out as a major drawback

4.4.2. Main changes in the quality index of domestic MTBFs

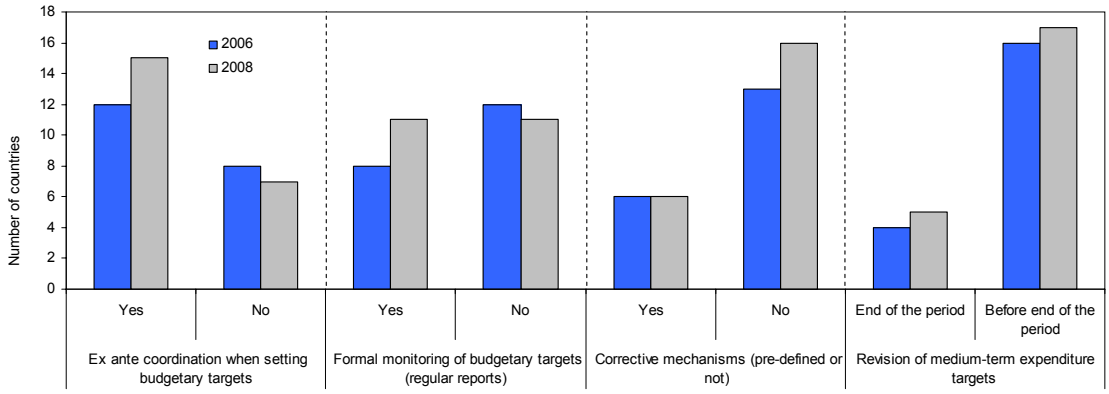
The index that encapsulates the main features of the existing medium-term frameworks in the EU countries was firstly calculated on the basis of the 2006 survey. This section shows the new values of this index according to the new survey conducted in 2008. This updating was done following the methodology outlined in the 2007 *Public finances in EMU* report, which is briefly summarised in Box II.4.6. ([72])

As the previous section stressed, no new MTBFs were implemented since 2006 and the reforms to the existing ones were generally rather minor except for the case of France. Consequently the country-specific values of the quality index of medium-term frameworks remained unchanged for almost all Member States. Only the index of France and to a lesser extent the one of Latvia reflected the improvements introduced since 2006. This is shown in Graph II.4.7. ([73])

([72]) In particular, when one country did not operate a domestic MTBF, the strength of its SCP in terms of multi-annual budgeting was taken into account to compute the index. However, while SCPs can be considered a specific type of an MTBF, they are not viewed to be totally on an equal footing with domestic MTBFs. Thus, for the calculation of the MTBF index, which measures the strength of Member States MTBFs, those countries that only use SCPs were given a lower rating in one of the dimensions considered for the index.

([73]) An unchanged index, however, does not necessarily imply that no changes occurred at all. For instance, Italy has recently improved its MTBF by including a detailed breakdown of revenues and expenditure components that allows identifying the fiscal strategy adopted to achieve fiscal targets. This may potentially improve the conduct and the monitoring of fiscal policy over the medium term. However, the breakdown of budgetary aggregates is not considered into the five dimensions of our MTBF index and, therefore, this change has no impact in its calculation. In cases where reforms have not entered into force, such as for Austria or Poland, they have also not yet been included in the index.

Graph II.4.6: **Coordination, monitoring, corrective mechanisms and target revisions in domestic MTBFs**



Source: Commission services.

Box II.4.6: Criteria used to calculate the quality index of domestic MTBFs

Similarly to fiscal rules, the information provided by the surveys were summarised into a composite index to assess the quality of MTBFs. The index originally developed in 2006 has now been reviewed and updated in the light of the 2008 questionnaire. Like the fiscal rules index, it is based on information reported by Member States, which only enter the index calculation when the specific aspects of the MTBF were already in force in July 2008. The index captures the quality of MTBFs through five criteria: ([1])

(i) Existence of a domestic MTFB.

(ii) Connectedness between the multi-annual budgetary targets and the preparation of the annual budget.

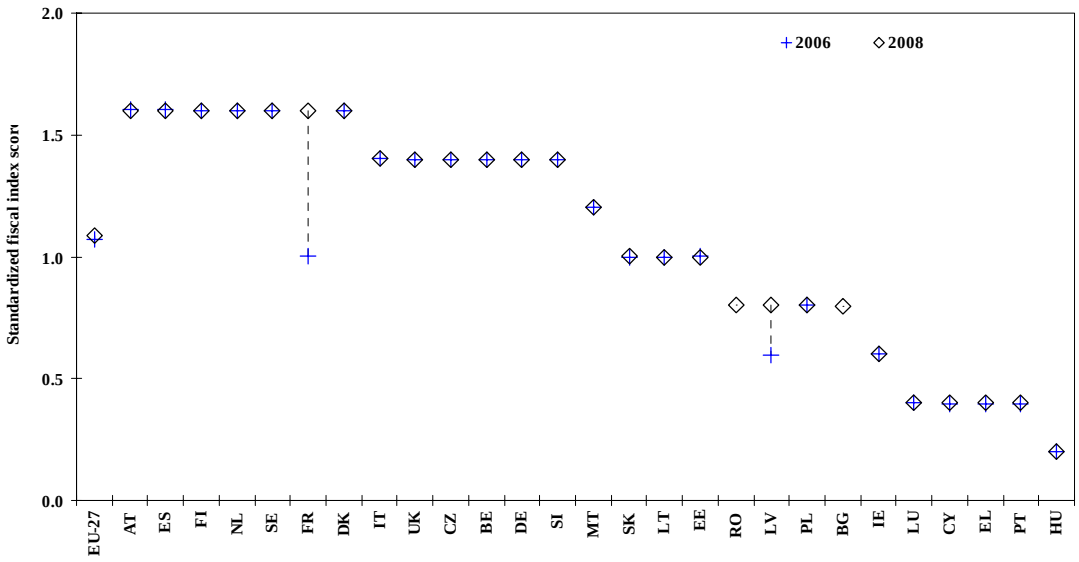
(iii) Involvement of national parliaments in the preparation of the medium-term budgetary plans.

(iv) Existence of coordination mechanisms between general government layers prior to setting the medium-term budgetary targets.

(v) Monitoring and enforcement mechanisms of multi-annual budgetary targets.

([1]) See the 2007 *Public finances in EMU* report for further details.

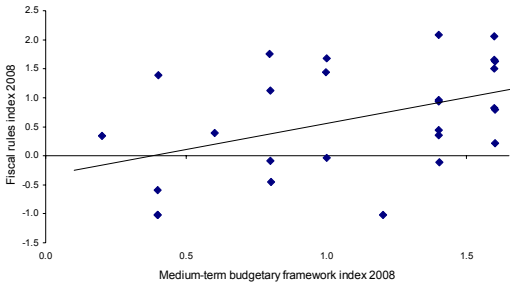
Graph II.4.7: **MTBF index scores and ranking in the EU27**



Source: Commission services.

Finally, although those countries with stronger MTBFs not necessarily also have strong fiscal rules, on average there is a positive relation between the quality of both fiscal arrangements as Graph II.4.8 shows.

Graph II.4.8: **Quality of medium-term budgetary frameworks and fiscal rules, 2008**



Source: Commission services.

4.5. CONCLUSIONS

Since the first surveys on fiscal frameworks conducted in 2005 and 2006, the number of EU Member States resorting to fiscal rules, independent institutions and MTBF has continuously increased.

The main changes experienced between 2005 and 2008 refer to fiscal rules. While few countries reformed existing rules, five countries, three of which are new Member States, introduced seven new fiscal rules. The use of revenue rules, which are particularly suited to deal with cyclicality of fiscal policy, remains scarce but the entering into force of revenue rules in France and Lithuania is a promising development. Another remarkable trend is the rising importance of fiscal rules that cover central and general governments. At the same time, budget balance rules continue to be by far the most popular type of rules in the EU. On the downside, scant independent monitoring and weak enforcement mechanisms remain the main shortcomings of current fiscal rules.

Fiscal institutions continue to be wide-spread in the EU-15 but are less common in new Member States. The creation of two new independent fiscal institutions in Sweden and Portugal was motivated by the need and desire to raise the transparency on fiscal policy making and thereby ensure the trust in medium-term policy decisions. While these institutions are responsible for assessing the underlying macroeconomic assumptions for the budget as well as monitor its execution and the adherence to medium-term budgetary plans, they do not provide binding macroeconomic forecasts for the budget. Actually, the use of fiscal council's

macroeconomic forecasts for the budget preparation is only effective in Austria, Belgium, the Netherlands and Slovenia. No new fiscal institutions have been formed in the new Member States, which largely rely on their independent central banks to also monitor fiscal policy and the Court of Auditors for a proper use of public funds.

Progress on MTBFs has been much slower than expected when judging the intentions for reforms expressed in recent SCPs. While several countries had foreseen framework reforms, only France adopted some significant changes. This explains why the quality index of domestic MTBF has remained unchanged in almost all EU Member States. As a result, the broad-based weaknesses in Member States' MTBFs identified in the 2006 survey still apply in 2008. These include poor monitoring mechanisms and lack of predefined measures in case budgetary developments depart from medium-term budgetary objectives.

ANNEX II

MORE DETAILS ON DISCRETIONARY MEASURES AND QUALITY OF PUBLIC FINANCE INDICATORS

AII.1. NOTES ON THE DATA COLLECTED IN THE FRAMEWORK OF THE OUTPUT GAP WORKING GROUP OF THE ECONOMIC POLICY COMMITTEE

In the framework of the Output Gap Working Group (OGWG) of the Economic Policy Committee a questionnaire was sent to the Member States inquiring into the estimated impact of discretionary fiscal measures on tax receipts. Annex table AII.1 summarises the information received on the availability of these estimates across EU countries for each broad tax category, the institutions in charge of elaborating these estimates and availability of data. Estimates on discretionary measures were made systematically available in nearly all EU countries and were in most cases the responsibility of ministries of finances. ([74]) In some cases data on measures concerning social security contribution is compiled by ministries of employment and social affairs (e.g., Austria, Belgium, Bulgaria, Czech Republic, Portugal and Slovakia) and by other ministries (e.g., ministry for health). In other countries, the data are complemented by data produced by other institutions (e.g. external research institutes in Germany and the National Central Bank in Belgium). In some countries with largely decentralised public spending, regional governments also compile data on the impact of discretionary measures (Belgium, Germany). Estimates are usually made public (although not yet in the case of Romania) and are either reported in ministry of finances publications or reported as part of legislative bills. In certain cases not all detailed information is made public (Bulgaria, Malta) nor is the information regularly published (Hungary and Romania). Furthermore, the data is recorded in fourteen out of twenty one cases on accrual or both accrual and cash basis, thus consistent with the ESA95 definition. Six countries only compile estimates on a cash basis only: Bulgaria, Cyprus, Estonia, Finland, Latvia, Romania. Estimates are usually made ex-ante in gross terms (i.e., without considering the impact of discretionary measures on tax bases) and only in few specific cases ex-post revisions are undertaken. The fact that the estimates provided by the Member States are in gross terms is only of minor importance given that the focus is on short-run variations of tax elasticities. Finally the information collected provides indication of the "no-policy change scenario" and, in particular, the consideration of price indexation mechanisms whenever relevant in building these scenarios. The "no-policy change scenario" definition used is as a matter of fact fairly general being defined in most cases as if no changes were undertaken in the tax system including often country-specific issues related to indexation mechanisms and country-specificities.

([74]) In some countries such estimates are not made regularly such as in Bulgaria, Hungary, Luxembourg.

Annex table AII.1: **Data collected on discretionary measures affecting tax elasticities**

	Time periods covered			Accounting	
	Indirect taxes	Direct taxes	Social security contribution	Cash and/or accrual	Net and/or gross
Austria	2000-08	2000-08	2000-08	Cash and accrual	Gross and net
Belgium	2001-07	2001-07	2004-08	Cash and accrual	Gross
Bulgaria	2004-08	2004-08	2004-08	Cash	Gross
Cyprus	2002-04	2002-04	2002-04	Cash	Gross
Czech Republic	1995-08	1995-08	1995-08	Cash and accrual	Gross
Denmark	2001-07	2001-07	N/A	Cash	Gross and net
Estonia	2006-09	2006-09	06-09	Cash	Gross and net
Spain	1999-08	1999-08	N/A	Cash and accrual	Gross and net
Finland	2001-08	2001-08	01-08	Cash	Gross
France	2001-07	2001-07	2001-07	Accrual	Gross
Germany	N/A	N/A	N/A	Cash and accrual	Gross and net
Italy	2001-07	2001-07	N/A	Cash and accrual	Gross
Lithuania	2001-07	2001-07	2001-07	Cash and accrual	Gross and net
Latvia	2002-07	2002-07	2002-07	Cash	Gross and net
Malta	2001-07	2001-07	2001-07	Accrual	Gross
Netherlands	Since 1991	Since 1991	Since 1991	Cash and accrual	Gross and net
Portugal	2002-08	2002-08	2002-08	Cash and accrual	Gross
Romania	2005-07	2005-07	2005-07	Cash	Gross
Sweden	2000-09	2000-09	2000-09	Accrual	Gross and net
Slovenia	2003-07	2003-07	2003-07	N/A	Gross
Slovakia	2004-09	2004-09	2004-09	Accrual	Net
UK	2001-12	2001-12	2001-12	Accrual	Net

Note: Information based on replies by Member States to questionnaire sent in June 2008. No information was received for non-listed countries including Greece, Ireland, Luxembourg, Poland. Luxembourg does not compile data on discretionary measures affecting tax elasticities.
Source: Commission services based on replies provided by Member States.

AII.2. PROPORTIONAL ADJUSTMENT METHOD ([75])

Assume the following strand of tax revenues corresponding to a given (unspecified) tax category:

T1,T2,...Tt

where *t* is the current year. Let the estimated tax revenue impact of discretionary measures in the years in which they occurred be

dm1,dm2,...dmt

and assume that the adjusted (for the impact of discretionary measures) series of tax revenues are equal to:

A1,A2,...At

Ideally tax revenues *A1-At* should only reflect the effect of (endogenous) evolution of tax bases in order to derive correct measures of tax elasticities reflecting the sensitivity of tax revenues to the tax bases. ([76]) In order to compare tax revenues across the years one would like to abstract from changes in tax structures, i.e., discretionary measures. Considering a specific year (*t*) as the base year, one would thus like to obtain tax revenues series as if this specific year's tax structure had been in operation for the entire period. Since this specific year is taken as the base, one can thus write that:

$At = Tt$

Tax revenue values for years *1* to *t-1* must then be corrected in order for these to be comparable to the tax revenue in year t. Under the proportional

([75]) Adapted from Barth and Hemphill (2000).

([76]) This is assuming that tax bases currently used are perfect proxies of the true tax bases. In practice this assumption can be severely challenged however, see Section II.2.1.

adjustment assumption, the series of adjusted revenues can be written as:

$$A_{t-1} = T_{t-1} * \left(\frac{T_t}{T_t - dm_t} \right)$$

In year t-2, the adjusted tax revenue should equally be written as:

$$A_{t-2} = T_{t-1} * \left(\frac{T_t}{T_t - dm_t} \right) * \left(\frac{T_{t-1}}{T_{t-1} - dm_{t-1}} \right)$$

More generally, each year the adjusted tax revenue can be written as:

$$A_j = T_j * \prod_{k=j+1}^{t} \left(\frac{T_k}{T_k - dm_k} \right) \qquad for\ all\ j < t$$

LIST OF INDICATORS USED FOR THE ILLUSTRATIVE CALCULATION OF QUALITY OF PUBLIC FINANCES COMPOSITE INDICATORS

Dimension	Variable	Description	Unit	Original data source
QPF1	Government expenditure	Total expenditure; general government; ESA 1995 and former definition - spring 2008 economic forecast - UUTG - UUTGF	% GDP	AMECO
QPF2	Cylically-adjusted primary balance (CAPB)	Structural balance of general government excluding interest - adjustment based on potential GDP - excessive deficit procedure - spring 2008 economic forecast - UBLGBPS	% GDP	AMECO
QPF2	Structural balance	Structural balance of general government - Adjustment based on potential GDP - Excessive deficit procedure - pring 2008 economic forecast - UBLGAPS	% GDP	AMECO
QPF2	Deviation of structural balance from MTO	Distance of the 2007 structural fiscal balance from the country-specific MTO	% GDP	Commission services
QPF2	Government debt	General government consolidated gross debt - Excessive deficit procedure - ESA 1995 and former definition (linked series) - UDGGL	% GDP	AMECO
QPF2	S1 2007 scenario	S1 = gap to the debt-stabilising primary balance + additional adjustment required to reach a debt target of 60% in 2050 + additional adjustment required to finance the increase in public expenditure up to 2050.	% GDP	Commission services
QPF2	S1 programme scenario	Sustainability indicator S1 under the 2007 SCP scenario	% GDP	Commission services
QPF3.1	Public investment	Gross fixed capital formation; general government - ESA 1995 and former definition merged - UIGGO - UIGGOF	% GDP	AMECO
QPF3.1	Public investment-to-public consumption	Gross fixed capital formation-to-Final consumption expenditure of general government	%	AMECO
QPF3.1	Productive' spending (Definition 1)	Public spending on transportation, R&D and education	% GDP	Eurostat and OECD
QPF3.1	Productive' spending (Definition 1)	Public spending on transportation, R&D and education	% primary government spending	Eurostat and OECD
QPF3.1	Productive' spending (Definition 2)	Public spending on transportation, R&D, education and health	% GDP	Eurostat and OECD
QPF3.1	Productive' spending (Definition 2)	Public spending on transportation, R&D, education and health	% primary government spending	Eurostat and OECD
QPF3.1	Productive' spending (Definition 3)	Public spending on transportation, R&D, education, health, public order and safety, and environmental protection	% GDP	Eurostat and OECD
QPF3.1	Productive' spending (Definition 3)	Public spending on transportation, R&D, education, health, public order and safety, and environmental protection	% primary government spending	Eurostat and OECD
QPF3.2	PISA	PISA total score	The mean performance of OECD students is set at 500 for the surveys.	OECD
QPF3.2	Edcuation attainment	Percentage of the population aged 25 to 64 having completed at least upper secondary education	% of the pop. aged 25-64	Eurostat
QPF3.2	Youth education attainment	Youth educational attainment	% of the pop. aged 20-24	Eurostat
QPF3.2	Early school leavers	Early school leavers: % of the population aged 18-24 with at most lower secondary education and not in further education or training	% of the pop. aged 18-24	Eurostat
QPF3.2	Quality of educational system	Quality of the educational system: the educational system in the country (1 = does not meet thte needs of a competitive economy, 7 = meets the needs of a competitive economy)	Score 1-7	WEF
QPF3.2	Quality of educational system	The educational system (0 = does not meet the needs of a competitive economy, 10 = meets the needs of a competitive economy)	Score 0-10	IMD
QPF3.3	Life expectancy	The mean number of years that a newborn child can expect to live if subjected throughout his life to the current mortality conditions (age specific probabilities of dying).	Number of years	Eurostat and OECD
QPF3.3	Mortality rate	The ratio of the number of deaths during the year to the number of inhabitants.	Number of deaths of 100 000 inhabitants	Eurostat
QPF3.3	Infant mortality	Ratio of the number of deaths of children under one year of age during the year to the number of live births in that year.	Deaths of children under one year of age per 1000 live births	Eurostat

Source:

(table continued)

Dimension	Variable	Description	Unit	Original data source
QPF3.4	Patents granted to residents	Number of patents granted to residents per 1000 000 population ("resident" filing refers to an application filed with the Office of or acting for the State in which the first named applicant in the application concerned has residence).	Per 1000 000 inhabitants	WIPO
QPF3.4	Triadic patents	Patents that at the same time are filed at the EPO and the Japanese Patent office (JPO) and granted by the USPTO.	Triadic patents per million inhabitants	Eurostat
QPF3.4	Patent applications	Total number of patent applications by milliard EUR of total R&D expenditure (GERD). Patent applications to the EPO by priority year at the national level.	Relative to gross domestic expenditure on R&D (GERD)	Eurostat
QPF3.4	Technological readiness	Index based on 8 subindices: (1) availability of latest technologies, (2) firm-level technology absorption, (3) laws relating to ICT, (4) FDI and technology transfer, (5) mobile telephone subscribers - hard data, (6) internet users - hard data, (7) personal computers - hard data, (8) broadband internet subscribers - hard data.	Score 1-7	WEF
QPF3.4	Innovation index	Index based on 8 subindices: (1) capacity for innovation, (2) quality of scientific research institutions, (3) company spending on R&D, (4) University- industry research collaboration, (5) government procurement of advanced technology products, (6) availability of scientists and engineers, (7) utility patents - hard data and (1.2) intellectual property protection.	Score 1-7	WEF
QPF3.4	Basic research index	Basic research (0 = does not enhance long-term economic development, 10 = does enhance long-term economic development)	Score 0-10	IMD
QPF3.4	Science graduates	New tertiary graduates in a calendar year from both public and private institutions completing graduate and post graduate studies compared to an age group that corresponds to the typical graduation age in most countries.	Tertiary graduates in science and technology per 1 000 of pop. aged 20-29 years.	Eurostat
QPF3.4	Science in schools	Science in schools (0 = is not sufficiently emphasized, 10 = is sufficiently emphasized)	Score 0-10	IMD
QPF3.5	Length of motorways	Length of motorways per 1000 km (scaled by country size)	Per 1000 km	Eurostat & CIA
QPF3.5	Length of railways	Length of railway tracks per 1000 km (scaled by country size)	Per 1000 km	Eurostat & CIA
QPF3.5	Fixed lines and mobile subscriptions	Fixed line and mobile phone subscribers	Units per 100 people	World Bank
QPF3.5	Internet users	Ratio of Internet users (ie. with access to the worldwide network) in the population	Users per 1000 people	IUT, WTD Report and database, and World Bank.
QPF3.5	Energy infrastructure	Energy infrastructure (0 = is not adequate and efficient, 10 = is adequate and efficient)	Score 0-10	IMD
QPF3.5	Index on maintenance and development	Maintenance and development of infrastructure (0 = are not adequately planned and financed, 10 = are adequately planned and financed)	Score 0-10	IMD
QPF3.5	Infrastructure index	Index based on 8 subindices: (1) quality of overall infrastructure, (2) quality of roads, (3) quality of railroad infrastructure, (4) quality of port infrastructure, (5) quality of air transport infrastructure, (6) available seat kilometers - hard data, (7) quality of electricity supply and (8) telephone lines - hard data.	Score 1-7	WEF
QPF3.6	Persons convicted	Persons convicted in percentage of offenses (total criminal offences)	% total offenses	European Sourcebook of Crime and Criminal Justice
QPF3.6	Burden of crime	Percentage of respondents victimised once or more in the year preceding the survey.	% of respondents victimised	EU ICS 2005
QPF3.6	Business cost of crime	The incidence of common crime and violence (e.g. street muggings, firms being looted) (1 = imposes significant costs on businesses, 7 = does not impose significant costs on businesses)	Score 1-7	WEF
QPF3.6	Fairness of justice	Justice is (0 = not fairly administered, 10 = fairly administered)	Score 0-10	IMD
QPF3.6	Organised crime	Organised crime (mafia-oriented racketeering, extortion) in your country (1 = imposes significant costs on businesses, 7 = does not impose significant costs on businesses)	Score 1-7	WEF
QPF3.6	Reliability of police services	Police services (1 = cannot be relied upon to protect businesses from criminals, 7 = can be relied upon to protect businesses from criminals)	Score 1-7	WEF
QPF3.6	Personal security and private property	Personal security and private property (0 = are not adequately protected, 10 = are adequately protected)	Score 0-10	IMD
QPF3.6	Persons killed or injured in road traffic accidents	Persons killed or injured in road traffic accidents	per 10.000 vehicles	WHO & UNECE
QPF3.6	Police satisfaction	Percentage of respondents satisfied with police controlling crime in local area.	% of respondents satisfied.	EU ICS 2005
QPF3.7	Bribing and corruption index	Bribing and corruption (0 = exist, 10 = do not exist)	Score 0-10	IMD
QPF3.7	Corruption perception index	The TI CPI focuses on corruption in the public sector and defines corruption as the abuse of public office for private gain.	Score 0-10	Transparency International
QPF3.7	Corruption impact on parliament	Impact of corruption on parliament/legislature (1: not at all corrupt; 5: extremely corrupt)	Score 1-5	Transparency International
QPF3.7	Public trust of politicians	Public trust in the financial honesty of politicians is (1 = very low, 7 = very high)	Score 1-7	WEF
QPF3.7	Diversion of public funds	Diversion of public funds to companies, individuals or groups due to corruption (1 = is common, 7 = never occurs)	Score 1-7	WEF
QPF3.7	Bureaucracy index	Bureaucracy (0 = hinders business activity, 10 = does not hinder business activity)	Score 0-10	IMD
QPF3.7	Wastefulness of public spending index	Public spending in the country (1 = is wasteful, 7 = provides necessary goods and services not provided by the market)	Score 1-7	WEF

Source:

(table continued)

Dimension	Variable	Description	Unit	Original data source
QPF4a	Share of indirect taxes	Share of indirect taxes in total general government revenues	% of total revenue	Eurostat, AMECO and OECD
QPF4a	Share of consumption taxes	Share of consumption taxes in total general government revenues	% of total revenue	Eurostat, AMECO and OECD
QPF4b	Inactivity trap (average wage)	Marginal effective tax rate of a single worker when moving from social assistance to work at a wage level equivalent to the wage of the average production worker (manufacturing sector)	% of average wage	European Commission and OECD
QPF4b	All-in average personal income tax and SSC rates (average wage)	All-in average personal income tax and SSC rates (single person at 100% of the average wage)	%	OECD
QPF4b	All-in marginal personal income tax and SSC rates (average wage)	All-in marginal personal income tax and SSC rates (single person at 100% of the average wage)	%	OECD
QPF4b	Average tax wedge on average wage earners (average wage)	Average tax wedge on average wage earners (single person without children, at 100% of average wage)	% of average wage	OECD
QPF4b	Net replacement rates (average wage)	Net replacement rates for unemployed single persons without children, at 100% of average wage	% of average wage	European Commission and OECD
QPF4b	Marginal tax wedge on average wage earners	Marginal tax wedge on average wage earners (single person without children, at 100% of average wage)	% of average wage	OECD
QPF4c	Inactivity trap (low wage)	Marginal effective tax rate of a single worker when moving from social assistance to work at a wage level equivalent to 67% of the wage of the average production worker (manufacturing sector)	% of low wage (67% of average wage)	European Commission and OECD
QPF4c	All-in average personal income tax and SSC rates (low wage)	All-in average personal income tax and SSC rates (single person at 67% of the average wage)	%	OECD
QPF4c	Low wage trap	Low wage trap: Tax rate on low wage earners (67%), single person without children	% gross earnings	Eurostat
QPF4c	Net replacement rates (low wage)	Net replacement rates for unemployed single persons without children, at 67% of average wage	% of average wage	European Commission and OECD
QPF4c	Average tax wedge on low wage earners	Average tax wedge on low wage earners (single person without children, at 67% of average wage)	% of average wage	OECD
QPF4c	Marginal tax wedge on low wage earners	Marginal tax wedge on low wage earners (single person without children, at 67% of average wage)	% of average wage	OECD
QPF4c	Unemployment trap (low wage)	Tax rate on low wage earners (67 % of average wage)	%	Eurostat
QPF4d	Corporate income tax rate	Combined central government and sub-central government (corporate income tax rate. Where a progressive (as opposed to flat) rate structure applies, the top marginal rate is shown.	%	OECD
QPF4d	Capital tax-to-labour tax rate	Total tax on capital-to-total tax on labour	%	Eurostat
QPF4d	Profit tax-to-income tax ratio	Taxes on the income or profits of corporations-to-tax on individual or household income	%	Eurostat
QPF4e	Number of tax payments	Number of payments for corporate income tax, value added tax or sales tax and labour taxes, including payroll taxes and social contributions based on a case study company representative for the country.	Numbers per year	World Bank
QPF4e	Hours per tax payments	Time to prepare, file and pay (or withhold) corporate income tax, value added tax or sales tax and labour taxes, including payroll taxes and social contributions based on a case study company representative for the country.	Hours per year	World Bank
QPF4e	Tax evasion (IMD survey)	Tax evasion (0 = hampers business activity, 10 = does not hamper business activity)	Score 0-10	IMD
QPF5	Fiscal rules index	Coverage and strength of total fiscal rules	Standardarised distribution - t-distribution; mean = 0, st.dev. = 1	ECFIN
QPF5	Expenditure rules index	Coverage and strength of expenditure rules	Standardarised distribution - t-distribution; mean = 0, st.dev. = 1	ECFIN
QPF5	MTBF index	Index measures the quality of institutions for medium-term budgetary planning based on five components: existence of a national MTBF; connectedness between multiannual targets and the annual budget; involvement of the national Parliament; existence of coordination mechanisms; monitoring and enforcement.	Score 0-2	ECFIN
QPF5	Budgetary procedures index	Overall index consisting of seven different dimensions of the budgetary processes: transparency; multi-annual planning horizon; centralisation of the budget process; the use of top-down budgeting techniques; prudent economic assumptions and reserves; performance budgeting; numerical fiscal rules.	Standardarised distribution - t-distribution; mean = 0, st.dev. = 1	ECFIN
QPF5	Public procurement transparency	Indicator that estimates the amount of procurement for which calls for competition have been published in the Official Journal of the European Communities and the TED database, as a percentage of the total value of public procurement.	% of the total value of public procurement.	Eurostat, DG MARKT
QPF5	Tranparency of government policy	Transparency of government policy is (0 = poor, 10 = satisfactory)	Score 0-10	IMD

Source:

Part III

The fiscal costs of financial crises: past evidence and implications for today's crisis

SUMMARY

What can be learned from the past for fiscal implications of today's financial crises? This question is at the heart of this section and is tackled by analysing empirically the fiscal costs and their determinants for 49 crises episodes with a focus on five case studies (Finland, Japan, Korea, Norway and Sweden). Even though those episodes were contained nationally or regionally, some transfers can nevertheless be made to today's global financial and economic crisis. What are the key findings and policy lessons?

Past financial crises have generally been very costly. Net direct fiscal outlays to rehabilitate the banking system averaged 13% of GDP but were much higher, over 50% of GDP, in some emerging market economies. These figures already account for the value recovered (until six years after the crisis broke out) from assets acquired by the public sector. Recovery rates were low at only 20% on average with few notable exceptions, such as Sweden. Increases in public debt ratios, the most comprehensive measure to capture fiscal implications from financial crises, went far beyond the direct costs attributable to tackling the financial sector problems and jumped on average by 20% of GDP during the crisis. Most of the ratcheting up of debt ratios occurred in the first two crisis years and was rooted in the expenditure side, including substantially higher interest payments for some emerging market economies. The process of rising debt ratios proved difficult to reverse. Even a decade after the start of the crisis, most governments ran public debt-to-GDP ratios above pre-crisis levels.

Which factors have contributed to the level of direct fiscal costs, i.e. outlays from rescuing and rehabilitating the financial sector? Lower direct fiscal costs and higher recovery rates were achieved notably, taking into account of the severity of the crisis, when the bank resolution strategy was implement swiftly, was transparent and received broad political support, backed by strong public institutions and legal frameworks, consistent in terms of fair and uniform treatment of market participants, and included a clear exit strategy. Within this broad framework, econometric regressions show that some individual measures have been associated with higher recovery ratios. This includes recapitalisation and liquidity support, presumably reflecting that they were extended to viable institutions that recovered after the crisis. Moreover, the regression results show that the use of asset management companies was linked to significantly higher recovery rates only when the government effectiveness, i.e. the quality of public services, the legal and judicial system, was strong.

Beyond the costs from rescuing banking systems, what has determined the overall fiscal costs of financial crises? To test whether one can take the statistical evidence that public debt ratios jumped far beyond the cost from crisis-related rescue measures at face value, an econometric analysis was carried out. It explicitly accounts also for other determinants of changes in public debt ratios, including the growth effect of the economy, evaluation effects and pre-crisis debt levels. The econometric evidence shows that when accounting for these factors, the largest part of the increase in public debt can indeed be attributed to the financial crises, with only a small fraction taking place irrespective of the crisis outburst. These implications from financial crises for the overall public finances were closely associated with the impact on the real economy.

Econometric analysis also shows that output gaps declined substantially during crises and that debt ratios increased substantially due to additional crisis-related budgetary outlays ensuing from the operation of automatic stabilisers. To some extent, increased discretionary fiscal stimulus to counter the economic downturns also added to the budgetary deterioration. However, the country case studies indicate that this was quite limited, since countries' fiscal space was frequently constrained due to rapidly weakening confidence in the public sector. In the few cases of relatively large expansionary fiscal activism, such as Sweden and Japan, there are many indications that the success of policies was rather limited. In the case of Sweden this was largely rooted in Ricardian consumers and in the case of Japan in the protracted restructuring of the financial system and inefficiencies in the fiscal stimulus packages and their delivery.

Against this background, what implications is the current financial crisis expected to have on EU Member States' public finances? There are considerable risks that rehabilitating the EU's banking system would require substantial public outlays. So far, public resources of about 44% of

GDP have been approved in support of the banking system of which, however, most are guarantees that may not be called upon. The amount of capital injections has been rather small so far (about 2½% of GDP) when compared with the IMF estimates for impaired assets of EUR 0.9 trillion. Assuming that capital injections were to be doubled (broadly in line with the upper-end estimates by the IMF for capital requirements in the EU) and applying to this and the total approved bank support measures conservative recovery rates in line with past crises would bring the estimates for net direct fiscal costs to 16½% of GDP across the EU, with much higher estimates for individual Member States. The estimated average bank rescue costs for the EU lie somewhat above those of past systemic crises.

The global nature of the current crisis has added to the risk factors for higher direct fiscal costs and reduced the policy options. This includes first the much larger sizes of banking systems in the EU today, than in past crises and consequently the larger size of impaired assets and recapitalisation needs. Second, recovery values of today's impaired assets may be much lower than of those in the past due to several factors. The complicated nature and high leverage of many financial assets may make them much more difficult to manage, unwind and recover than during past crisis when assets included predominantly real estate and other loans. Moreover, a protracted slowdown of the economy, compared to many V-shaped output developments in earlier crisis supported by sharp real depreciations of the currencies, is a risk factor to achieving higher recovery values. Also, the lesser availability of foreign and more generally private investors, given the global nature of the crisis, may suppress recovery values. And finally, the protracted implementation of a comprehensive strategy across Europe for the resolution of the banking system, the use of regulatory forbearance may add to the fiscal bill. In contrast to these risks factors, today's crisis includes only few aspects that allow a more optimistic view on containing fiscal implications. This regards foremost the generally stronger legal and judicial systems and the greater transparency and uniform applications of national bank resolution policies than in the past, even though in the EU significant differences in institutional strengths remain. Those could impact recovery rates.

And what are the lessons for the effectiveness of fiscal support of the economy beyond the resolution of the banking system? The likelihood for success of both policies is intertwined. Experience shows that without a resolute clean-up of bank balance sheets, the impact of fiscal policy can be muted as long as uncertainty and constraints to providing loans and stimulate private demand prevail. In practice, however, the adoption of the European Economic Recovery Plan (EERP) could not have awaited further progress in bank resolution as this may have risked negative feedback loops.

Other lessons on the effectiveness of fiscal support in the EU pertain primarily to the coordination and design of policies, their differentiation across Member States and the return to consolidation paths. Automatic stabilisers in the EU are sizable and letting them play fully can provide a significant contribution to buffering the economic impact of the crisis despite sharp deteriorations of public finances in countries with sufficient fiscal space. Discretionary measures are particularly effective if coordinated (as done under the EERP and by the G-20) and targeted to credit and liquidity-constrained households, in particular when monetary policy is getting less effective. These arguments are supported by the Commission services model simulations which show higher multipliers for both cases. Moreover, the support of public investment has the strongest long-term effect since it can close not only short-term demand gaps but can also strengthen the long-term growth potential. However, limits in absorption capacities could render this instrument eventually less effective.

However, the application of these broad principles for fiscal support of the economy needs to be differentiated across Member States, in particular with a view to maintaining long-term sustainability. Depending on the degree of fiscal space and macroeconomic imbalances, embarking on credible adjustment paths (exit strategies) with a view to ensuring debt sustainability and regaining market confidence may need to take precedence. This applies particularly to those countries exceptionally hard hit by the crisis and those with already high public debt levels where a slowdown in nominal GDP growth below nominal interest rates would ratchet up debt ratios. The expected sharp increases in public expenditure-to-

GDP ratios, in line with past crises episodes, in addition to long-term pressures on many Member States' public finances from rising age-related spending will require tough choices in the consolidation/exit strategies.

Strong fiscal frameworks, i.e. national fiscal rules and institutions, can provide the needed credibility and commitment to putting the fiscal houses back in order in such difficult circumstances. This is supported by past experiences which find that strong fiscal frameworks have been associated with successful fiscal consolidations. Exit strategies for EU Member States would thus benefit strongly from commitments to improving and/or adhering to existing fiscal rules and frameworks.

1. INTRODUCTION

The current financial crisis provides challenges of an unprecedented scale for public finances. Governments need to rehabilitate their banking systems and stabilise their economies while at the same time containing the strain on public finances with a view to keep them sustainable. So far policy makers in the EU and worldwide have deployed a wide range of instruments to restore the confidence in and rebuild the health of their financial systems. These comprise capital injections into banks, purchases of troubled assets as well as guarantees for depositors, some creditors and for newly issued debt instruments. Many of these measures have budgetary implications for public resources. However, it is too early to tally up the bill since the crisis is still unfolding and the ultimate costs will also greatly depend on future recovery values of public assets in banks and the degree to which public guarantees will be called upon. Both are intrinsically linked to the economic developments which are in turn the other channel that determines how greatly the crisis will impact public finances.

For the current crisis, this chapter attempts to draw lessons as regards the role and risks for public finances by reviewing past financial crises. Section III.2 summarises concepts to measure and analyse the fiscal costs of systemic banking crises, including not only the direct costs linked to rehabilitating the banking system, but also the budgetary implications from output shortfalls and fiscal stimulus operations. Section III.3 provides empirical evidence on the costliness of past financial crises and its determinants by reviewing the literature and performing statistical and regression analysis. Section III.4 takes a closer look at five crisis episodes in OECD countries allowing to explore in more detail the crisis responses and fiscal implications. Based on the empirical evidence and country experiences broad policy lessons from handling past financial crises are being drawn in Section III.5. The last two sections attempt to transfer these findings to the current crisis while accounting at the same time for the global scale of today's crisis. Section III.6 highlights similarities and differences to past crises as well as summarises and assesses crisis-related measures taken so far by EU Member States. Section III.7 concludes with some policy considerations for handling the crisis going forward.

2. KEY CONCEPTS FOR ANALYSING FINANCIAL CRISES AND THEIR FISCAL COSTS

2.1. BANKING CRISES

For the empirical analysis, what is considered to be a banking crisis needs to be defined and criteria established to measure their length. This study follows the definition by Laeven and Valencia (2008) for systemic banking crises ([77]) as episodes during which a country's corporate and financial sectors face great difficulties repaying contracts on time, experience a large number of defaults, non-performing loans increase sharply and most of the banking system capital is exhausted. The situation may be accompanied by falling assets prices, sharply rising real interest rates and a reversal of capital inflows. Thus, financial crises in this definition do not include banking stress limited to individual banks. However, banking crises may have coincided with and have been aggravated by episodes of currency and sovereign debt crises. Since Laeven and Valencia only define the starting points of banking crises but not their length, this study uses for the latter the information provided in Demirgüç-Kunt and Detragiache (2005) and Reinhart and Rogoff (2008b). ([78]) In case of missing or conflicting information in those sources, the end of the crisis was determined as the year when domestic credit growth bottomed out (see Annex Table III.1). ([79])

Financial crises occurred mostly in developing and emerging market economies, but the countries constituting today's EU-27 and the OECD were also hit. Laeven and Valencia (2008) report 122 systemic banking crises episodes between 1970 and 2007, excluding the on-going crises. Of these, 22 crises occurred in today's EU-27 and the OECD and lasted on average 4½ years. For the ensuing empirical analysis of this study, the focus is on a subset of 49 crises episodes, including the ones in EU (13 episodes) and OECD countries (9 episodes) as well as those other crises episodes for which detailed information on crises containment and crises resolution policies is available in the Laeven and Valencia database (27 episodes) (see Annex Table III.1 for more details). These comprise a number of emerging market economies, including e.g. the Asian crises countries, Argentina, Brazil and Russia. Their economic structures differed strongly from the EU-15, but bear many resemblances to the new Member States. Moreover, as regards the handling of their financial crises they serve as useful experiences for decisions to be made today. ([80]) The sample does not include the current financial crisis.

2.2. FISCAL COSTS

Fiscal implications of financial crises are frequently captured by the concept of direct fiscal costs that arise from rescue measures for the financial sector. These are in principle permanent changes in a government's net worth due to fiscal measures that are addressed directly at the financial system. They comprise mainly capital injections, purchases of troubled bank assets, pay-outs to depositors, payments when guarantees are called and subsidies. Some of these outlays may be recovered over time, e.g. through the sales of acquired equity and other assets in banks, so that the direct net fiscal costs could, in the long run, be substantially lower than the gross costs. Overall, the concept of direct net fiscal costs reflects the permanent increase in public debt (or the cumulative increase of fiscal deficits) where budget transfers are used to support the financial sector (see Hoelscher and Quintyn, 2003). ([81]) In

([77]) The terms "financial crisis" and "banking crisis" are used interchangeably here.

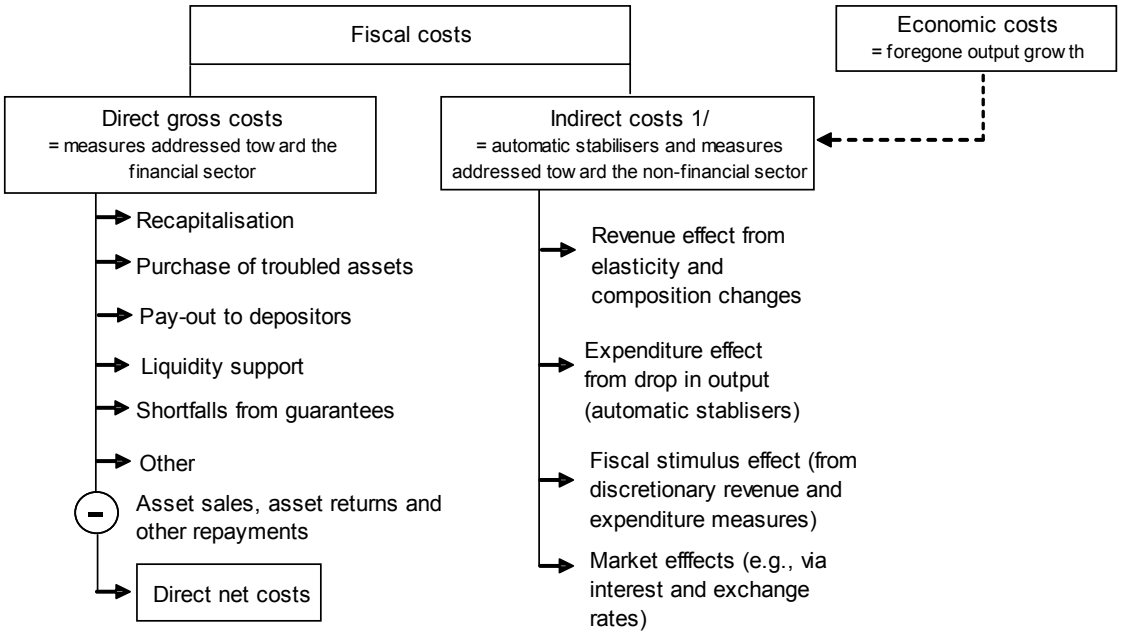
([78]) Reinhart and Rogoff (2008b) in turn draw on a number of previous studies to determine the length of the crises, including, among others, Caprio and Klingebiel (2003).

([79]) In absence of additional indications, the end of the banking crisis episode corresponds to the year in which the private credit-to-GDP ratio recovers. Since it often happens that the credit-to-GDP ratio starts falling only some years after the crisis has started, a credit ratio increasing after the start of the crisis does not imply classifying the episode as lasting one year only, except if the credit-to-GDP ratio grows continuously for at least three years without interruption.

([80]) A final reason for choosing a relatively wide sample is to allow for meaningful econometric analysis.

([81]) While direct fiscal costs show up immediately in a higher debt stock, not all measures impact the budget balance. In particular, as laid out in detail in Part II.1, government transactions, such as the injection of capital into banks and the purchase of troubled assets are recorded "below the line". Thus, they impact the public financial accounts and the level of gross debt but not the budget balance since the government acquires assets that are assumed, in principle,

Graph III.2.1: **Types of fiscal costs from financial crises**



Notes: 1/ Measured in percent of GDP.

Source: Commission services.

practice however, the literature may have overestimated net fiscal costs somewhat since the assumed cut-off rate for recovery values in some studies (e.g., five years after the crisis has started) may exclude in some cases periods of further recovery in fiscal costs. Moreover, gross outlays are typically based on budgeted figures rather than actual transactions (e.g., Laeven and Valencia, 2008). ([82]) Ideally outlays and recovery values should be discounted to reflect their time pattern and opportunity costs. For practical reasons, including insufficient information about the cash flows, this is generally not done in the literature, however. Thus, direct fiscal costs are often calculated as the sum of the annual costs, measured in percent of annual GDP (see e.g., Hoelscher and Quintyn, 2003), which is the concept followed in the rest of the paper.

An often neglected, but potentially large part of fiscal costs, have an indirect nature (Graph III.2.1). ([83]) Public finances may deteriorate substantially through the impact of financial crises on economic activity. On the one hand, the expenditure-to-GDP ratio is bound to rise from additional outlays on unemployment benefits during economic slowdowns and, more importantly, by the fact that the largest part of public spending (e.g., pensions and public wages) is pre-determined at least in the short run. On the other hand, revenues are closely linked with the economic activity and asset prices developments. Reflecting sharp drops in profits and asset prices as well as changes in the composition of economic activity, the nominal revenue shortfalls may go far

to generate an income stream equal to the acquisition costs (purchase price plus financing costs). Should this income stream eventually turn out to be lower than the government's costs to acquire it, this would ceteris paribus be reflected in worse budgetary positions since the government's consumption based on the expected returns would be higher than the actual returns from its investment.

([82]) This explains for example the large differences in the estimates for fiscal costs in Japan. While in previous studies they were estimated at 24% of GDP (e.g., Caprio et al. 2005), they have been revised downwards to 14% by Laeven and Valencia (2008). Spilimbergo et al. (2008) put the gross fiscal costs at only 9% of GDP when drawing on information from the Japan Deposit Insurance Corporation indicating, with hindsight, how much of the available funds were actually used.

([83]) The distinction made here is similar to the one by Eschenbach and Schuknecht (2002). Most other studies typically differentiate only between direct fiscal costs and economic (output) costs of financial crises.

beyond the "normal" automatic stabiliser effect cycle and thus lead to a drop in the revenue-to-GDP ratio. In addition, governments may take discretionary fiscal stimulus measures, thereby adding to fiscal costs even though some of the costs can be recovered through the stimulus effect on the economy. A final channel that may add to indirect fiscal costs implications are impacts from market reactions, such as higher interest rate premiums, that need to be paid because of a deteriorated fiscal position, or exchange rate effects. The sum of all direct and indirect costs of banking crises is reflected in changes in the level of debt following the crisis.

3. FISCAL COSTS OF FINANCIAL CRISES: THE EVIDENCE

In this study, several approaches to capturing and understanding fiscal costs from financial crises are pursued. The first approach looks at direct fiscal costs from bank rescue operations and their determinants. The second approach assesses developments in general and primary balances during the crisis, thereby including economic developments. The third and final approach is the most comprehensive and assesses the development of public debt-to-GDP ratios. In addition to the development of government balances, public debt also includes below the line operations and valuation effects, including from exchange rate developments.

3.1. DIRECT FISCAL COSTS AND THEIR DETERMINANTS

3.1.1. The size of direct fiscal costs: some statistical evidence

Direct fiscal costs have been substantial in many systemic financial crises. Measures aimed at rehabilitating their banking systems have cost governments on average 13% of GDP when accounting for recovery values (Table III.3.1). However, some countries paid a multiple of this bill (Graph III.3.1). At about 11% of GDP, on average, systemic banking crises have been only slightly less expensive in today's EU and OECD countries than in other parts of the world (Annex Table III.1). The Asian financial crisis and some prominent crisis episodes in emerging markets (such as Argentina, Mexico and Turkey) stand out for a "fiscal price tag" of more than double this. Across all crises episodes, only little of the initial gross outlays were recovered (18%). Notable exceptions across EU and OECD countries are Norway and Sweden.

While measures adopted to contain and rehabilitate the banking sectors have differed across countries, some measures have been more common than others (Table III.3.2 and Annex Table III.2). In the crisis containment phase about one third of countries issued blanket guarantees on deposits (and in most cases other liabilities) and over three quarters provided liquidity support. ([84]) Hardly any country resorted to freezing deposits or establishing bank holidays to buy extra time. In the crises resolution phase many countries applied regulatory forbearance ([85]) (68%) to provide banks some time to recover and most intervened on a large scale to ultimately to resolve the crises (90%). Such interventions included in most cases recapitalisations (71%), bank closures (71%), mergers (60%) and nationalisations (58%). These measures, as well as the use of bank restructuring agencies and asset management companies were more common across crises episodes in the EU and non EU-OECD countries than in the rest of the world. In a third of all countries did depositors have to bear losses; among OECD and EU countries this only included the crisis episodes in the Baltic countries in the 1990s. Overall, while many countries relied on a combination of policies these policy mixes have been rather diverse. Simple correlation coefficients across the measures are relatively low (Annex Table III.3) with the use of bank restructuring agencies, regulatory forbearance, nationalisations and mergers being the most common combination.

([84]) Whether liquidity support was provided was derived by Laeven and Valencia from the monetary authorities' balance sheet. If the ratio of claims by monetary authorities on deposit money banks (IMF International Financial Statistics (IFS) line 12E) to total deposits was at least 5% and had at least doubled with respect to the previous year during the period t to t+3, than it was considered as liquidity support.

([85]) Regulatory forbearance includes the suspension or less than full application of prudential regulations (e.g. for loan classification or loan loss provisioning) and, for example, the permission for banks to continue operations despite being technically insolvent (see Laeven and Valencia, 2008).

Table III.3.1: **Direct fiscal costs of banking crises 1/**

	Crisis length (years)	Total gross fiscal cost 2/ (% of GDP)	Total net fiscal cost 3/ (% of GDP)	Recovery ratio (% of gross fiscal cost)	Gross recapitalisation (% of GDP)	Net recapitalisation 4/ (% of GDP)	Recovery ratio from capital injections (% of capital injections)	Output loss (level estimate) 5/ (% of trend GDP)
EU-27 6/	4.2	6.6	5.5	23.9	2.8	2.4	12.1	18.4
EU-15 7/	4.0	7.3	5.6	53.9	5.2	4.2	19.7	44.9
OECD	3.9	11.4	11.8	29.7	8.5	7.9	20.1	20.2
OECD and EU	4.2	9.7	9.8	23.5	6.7	6.0	17.4	17.3
Other than EU and OECD	4.3	18.2	14.5	16.8	8.4	6.0	19.7	20.2
Big 5 industrial country-crises 8/	4.2	7.7	6.4	46.6	4.9	3.9	29.3	26.8
Big 8 emerging market-crises 9/	5.8	27.8	23.4	16.7	16.2	15.7	13.2	39.8
TOTAL	**4.3**	**14.8**	**13.0**	**17.8**	**7.8**	**6.0**	**20.0**	**19.3**

Notes: 1/ Based on 49 crises episodes. Country data are shown in Annex Table III.1.
2/ Gross fiscal costs are government outlays during the crisis.
3/ Gross fiscal costs minus recovery values during period t to t+5, where t is the first year of the crisis. Fewer data are available for net than for gross fiscal costs; thus, country group averages between gross and net are not fully comparable.
4/ Gross capital injections minus recovery during period t to t+5, where t is the first year of the crisis.
5/ Calculated as the cumulative deviation (from t to t+3) of real GDP level from trend real GDP level before the crisis. The level estimates shown here are higher.
6/ Includes crisis episodes in Bulgaria, Czech Republic, Estonia, Finland, Hungary, Latvia, Lithuania, Poland, Romania, Slovak Republic, Slovenia, Spain and Sweden.
7/ Includes crisis episodes in Finland, Spain and Sweden, but no fiscal costs are available for Spain.
8/ Includes crisis episodes in Finland, Norway, Sweden, Japan and Spain.
9/ Includes crisis episodes in Argentina (2001), Indonesia, Korea, Malaysia, Mexico (1994), Philippines, Thailand and Turkey (2000).
Source: Calculations based on the database from Laeven and Valencia (2008).

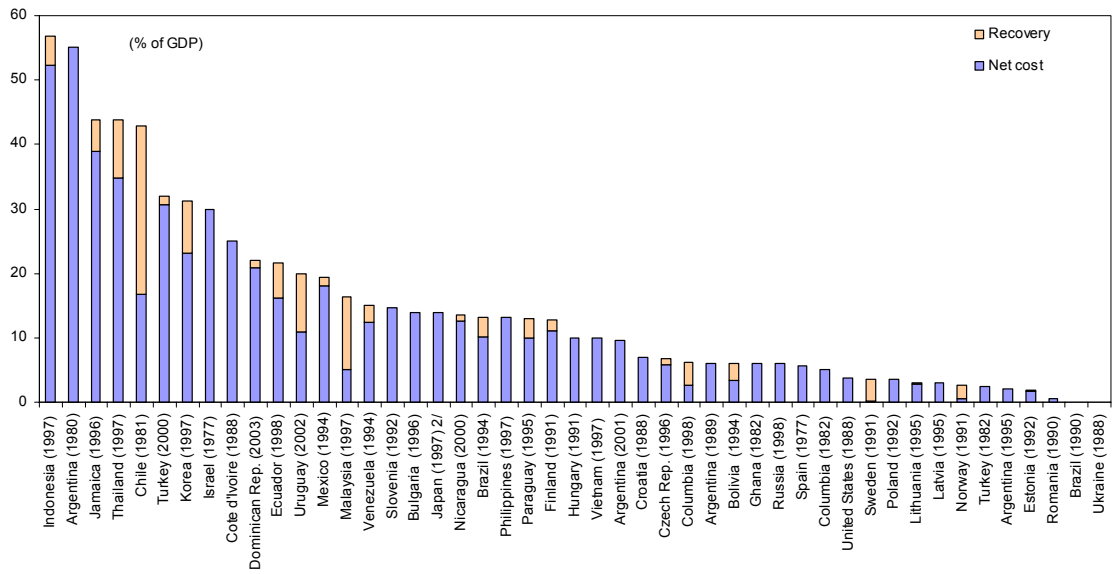
Using the data on net fiscal costs, a few policy measures seem to emerge as having been associated with higher costs. Table III.3.2 compares the simple averages of net fiscal costs when specific crises measures where used and when not. One needs to caution, however, about over-interpreting such bilateral correlations, since they do not account for the severity of the crisis and other factors. Keeping this in mind, the data seem to indicate that all policy responses implied sizeable positive net fiscal costs that were higher than when the measures were not used (last two rows of the table). Particularly blanket guarantees and liquidity support in the crisis containment phase seems to have added to the government bill (net direct fiscal costs averaged 17.4% and 13.5% of GDP when both policies were used compared to 9.6% and 7.4% of GDP when they were not used). Similarly, resorting to bank resolution through closures, nationalisations, mergers or sales to foreigner was associated with higher net direct fiscal costs than across crises episodes where such measures were not, or did not have, to be taken. For EU and OECD countries, in contrast to episodes in the rest of the world, the data seem to indicate also a particular costliness of using a deposit insurance system. Moreover, asset management companies generally do not appear to have operated very efficiently. ([86]) At first sight, this seems particularly to have been a problem in the EU and OECD countries (with the remarkable exception of Sweden; see Section III.4.3 for more details). However, the data need to be interpreted with caution since only Norway and Latvia did not resort to the use of AMCs (thus, the average net fiscal costs for EU and OECD countries without AMCs in Table III.3.2 is based only on those two observations). Causes for these inefficiencies are explored later in this study and are found to relate, in addition to the depth of the crisis, to the institutional strength of governments.

The argument that bigger bank rescue operations have helped to contain the impact on the real economy is not supported empirically. Econometric studies by Honohan and Klingebiel (2003) and Claessens et al. (2005) cannot find a trade-off between direct fiscal costs from resolving the banking system and output losses). ([87]) In fact, higher fiscal outlays may have rather contributed to the delay of economic recovery (a finding also supported by Boyd et al. 2005). This is also reflected in a simple bi-variate plot between both variables (Graph III.3.2).

([86]) Laeven and Valencia (2008) also point out the potential inefficiencies in the use of bank restructuring agencies and asset management companies. This is explored in more detail in Klingebiel (2000).

([87]) Data for output losses are from Laeven and Valencia (2008). See Box III.3.1 and Annex III.1 for details on measuring output costs.

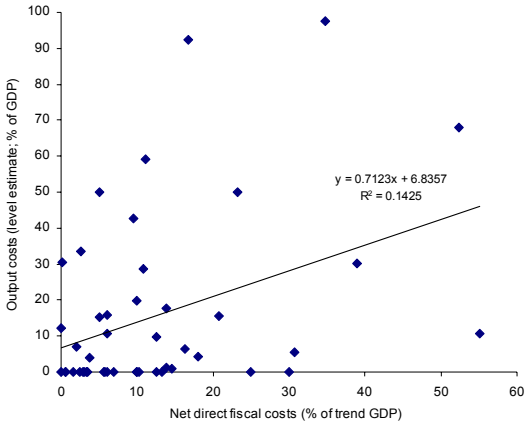
Graph III.3.1: **Gross and net fiscal costs from systemic banking crises (1970-2007) 1/**



Notes: 1/ Gross fiscal costs are government outlays during the crisis. Recovery values are for the period t to t+5, where t is the first year of the crisis. No data on recovery values are available for Spain, Hungary, Israel, Poland, Romania, Slovenia and Turkey (1982). For the US net fiscal costs are from Spilimbergo et al. (2008).
2/ For Japan, revised Laeeven and Valencia data on gross fiscal costs are 14% of GDP while they were previously estimated at 24% of GDP (e.g., Caprio et al. 2005). Spilimbergo et al. (2008) put the gross costs at only 9.1% of GDP of which 4.7% of GDP were recovered until 2008 (in contrast to the shorter recovery period assumed (until 2002) in the Laeven and Valencia database).
Source: Data from Laeven and Valencia (2008).

It indicates that instead of a trade-off that there is rather a weak positive correlation between both variables. In contrast to earlier econometric studies, the graph uses net fiscal costs, i.e. it accounts for the recovery values that a swifter economic turnaround may have supported. Again, these findings need to be treated with caution as the direction of causality is not clear. The severity of the economic crisis, as reflected in the output losses, may have also impacted on the degree to which governments had to intervene in the banking sector.

Graph III.3.2: **Net fiscal costs and output costs of financial crises (1970-2007)**



Notes: Net fiscal costs are government outlays during the crisis minus recovery values during period t to t+5, where t is the first year of the crisis. Gross fiscal costs are used for Spain, Hungary, Israel, Poland, Romania, Slovenia and Turkey (1982). For the United States, net fiscal costs are from Spilimbergo et al. (2008). Output losses are calculated as the cumulative deviation (from t to t+3) of real GDP level from average trend real GDP before the crisis.
Source: Data from Laeven and Valencia (2008).

Table III.3.2: **Crisis measures and direct fiscal costs 1/**

	Containment phase				Resolution phase										
						Large-scale government intervention									
	Deposit freeze	Bank holiday	Blanket guaran-tee 2/	Liquidity support 3/	For-bearance 4/	Overall large-scale govt. inter-vention	Bank closures	Nationa-lisations	Mergers	Sales to forei-gners	Bank restruc-turing agency	Asset manage-ment company	Recapital-isation	Deposit insur-ance	Losses imposed on deposi-tors
Frequency of measures (% of crises episode in which the policy measure was used)															
EU and OECD 5/	0.0	0.0	50.0	66.7	66.7	100.0	66.7	83.3	72.7	66.7	70.0	75.0	83.3	66.7	25.0
Other countries	19.2	15.4	19.2	80.8	69.2	84.6	73.1	46.2	53.8	50.0	44.0	53.8	65.4	42.3	38.5
Total	13.2	10.5	28.9	76.3	68.4	89.5	71.1	57.9	59.5	54.5	51.4	60.5	71.1	50.0	34.2
Net direct fiscal costs (% of GDP) 5/															
EU and OECD countries															
With measure	na	na	16.2	12.4	10.7	10.4	10.2	11.6	13.1	17.6	10.4	11.5	11.9	14.6	2.5
Without measure	10.4	10.4	4.6	6.4	9.9	na	8.4	4.4	6.6	2.5	11.8	1.8	2.9	1.9	12.4
Other countries															
With measure	8.5	10.7	21.5	13.9	13.9	14.5	14.8	17.0	15.3	18.5	12.4	14.2	12.5	12.3	13.0
Without measure	14.1	13.5	11.0	7.6	11.1	5.3	7.8	9.7	9.9	6.9	12.1	10.5	14.0	13.6	13.1
Total															
With measure	8.5	10.7	17.4	13.5	12.9	13.0	13.4	13.9	14.5	18.2	11.6	13.5	12.3	13.3	11.2
Without measure	12.8	12.4	9.6	7.1	10.7	5.3	8.8	9.0	9.3	5.6	12.6	10.3	12.0	11.2	13.1

Notes: 1/ Includes only measures to restore the confidence and health of the banking sector. Fiscal stimulus measures are not considered here. Based on 49 crises episodes.
2/ Whether liquidity support was provided was derived by Laeven and Valencia from the monetary authorities' balance sheet. If the ratio of claims by monetary authorities on deposit money banks to total deposits was at least 5% and had at least doubled with respect to the previous year during the period t to t+3, than it was considered as liquidity support.
3/ Regulatory forbearance includes the suspension or less than full application of prudential regulations (e.g. for loan classification or loan loss provisioning) and, e.g. the permission for banks to continue operations despite being technically insolvent (see Laeven and Valencia, 2008).
4/ Indicates whether or not there was large-scale government intervention in banks, such as nationalisations, closures, mergers, sales and recapitalisations of large banks during the years t to t+3.
5/ For several new Member States no net fiscal costs are available.
Source: Calculations based on data by Laeven and Valencia (2008).

3.1.2. The determinants of direct fiscal costs: some econometric evidence

The broad picture derived from the purely descriptive analysis is confirmed by earlier econometric studies on what has determined the level of direct fiscal costs. In their seminal papers, Honohan and Klingebiel (2003) and Claessens, Klingebiel and Laeven (2005) regress gross direct fiscal costs on a set of crises resolution and other explanatory variables, including variables to capture the depth of the crises (real interest rates and changes in equity prices). ([88]) Honohan and Klingebiel (2003) conclude, based on their estimates for 40 banking crises episodes, that "unlimited deposit guarantees, open-ended liquidity support, repeated recapitalisation, debtor bail-outs and regulatory forbearance all tend to add significantly and sizeably to costs." ([89]) Claessens, Klingebiel and Laeven (2005) confirm that "the size of fiscal costs is related to the extent to which countries adopt accommodative policies, in particular explicit government guarantees on financial institutions' liabilities and forbearance". Furthermore, they find that the development level or quality of institutions was associated with lower fiscal outlays. ([90])

However, a few problems are inherent to these studies. First, they use gross rather than net direct fiscal outlays as cost measures since those data were available over a wider set of countries. Second, the crises episodes do not focus entirely on systemic crises but also include some individual bank failures (e.g., in Australia, 1989-92 and France 1994-95).

Third, policy measures are included as 0-1 variables, thus they do not allow differentiating the specific characteristics and the timing of each policy measures by country.

([88]) The estimations are based on the database on banking crises in the paper from Caprio and Klingebiel (1996) and later updated by Caprio et al. (2005).

([89]) Honohan and Klingebiel (2003) distinguish between fewer crises measures than the ones listed in Table III.3.2. They focus on blanket guarantees, extensive liquidity support, repeated recapitalisation, public debt relief for borrowers and two types of forbearance ((i) if insolvent banks were permitted to continue operating and (ii) if other prudential regulations were suspended or not fully applied).

([90]) They measure the development of institutions through three variables (i) a quality of institutions index (from Kaufmann et al., 1999), (ii) a corruption measure (from La Porta et al., 1998) and a judicial efficiency index (from La Porta et al., 1998).

Box III.3.1: **How to measures output costs?**

Alternative methods to estimate output losses have been used in the literature. One widespread method calculates output losses as the difference between trend *growth* before the crisis and actual GDP until a few years after the crisis or until the time when annual output growth returned to its trend. An alternative method sums up the deviations in the *levels*, rather than growth rates, of actual GDP from its trend during the crisis and put them in relation to the initial GDP level (e.g. Hoggarth et al., 2001, Boyd et al., 2005 and Laeven and Valencia, 2008). The authors using this method argue that the growth rate method underestimates the output losses because it does not recognise the reduction in the output level in the previous years (see for more details on the two approaches Annex III.1).

The latest banking crisis database from Laeven and Valencia (2008) uses the level method, but the approach is prone to two sources of overestimation. First, it assumes that output losses related to financial crises are cumulative. Put differently, this approach assumes that the output loss during the crisis is never fully recovered and that, after the crisis, (i.e. when output growth resumes) output starts growing from lower levels, ignoring potential post-crisis catching-up processes. One important reason for the existence of a post-crisis catching-up could be that during severe crises old capital may be scrapped and replaced by new capital vintages which may echoed over long-run growth paths (see e.g. Boucekkine et al., 1997). A second source for overestimating the output loss is the use of a pre-crisis trend used (by Laeven and Valencia, 2008). This approach does not capture the potential structural adjustments triggered by the crisis.

An alternative method is therefore to capture output losses through regression analysis. This approach is explained and applied in Box III.3.2.

Fourth, the regression estimates only partly account for the severity of the crises which may have impacted the policy choice and fiscal costs. And finally and most importantly, one needs to be cautious in drawing conclusions on the efficiency and usefulness of crises resolution measures without knowing the counterfactual, i.e. what would have happened if those measures had not been employed.

Thus, an alternative approach to identify factors that impact the costs of bank rescue measures is to analyse the determinants of recovery rates. Recovery rates are defined here as the amount recovered between the start of the crisis and t+5 in percent of gross fiscal outlays. Data are again from the Laeven and Valencia (2008) database. In regression estimates using these recovery rates as dependent variable the IMF (2008a) finds four factors of significance. First, advanced economies (measured by per capita GDP) had higher recovery rates while, second, transition economies (measured by a dummy) had lower rates. Third, when countries experienced a simultaneous banking and exchange rate crisis, the recovery values were significantly lower. This may largely reflects the inability of foreign currency-debtors (often without foreign-currency income) to repay their debt. And fourth, fiscal space has mattered for recovery rates. Countries with a stronger fiscal balance at the outset of the crisis, which the authors interpret as a proxy for the quality of public management, had higher recovery rates. Gross fiscal costs, one measure for the depth of the crisis, and possibly the amount of impaired assets that the public sector had to deal with, were not significantly linked to recovery rates.

In the regression analysis on the determinants of recovery rates undertaken in this study, the strength of institutions and the use of certain bank resolution policies are found to also play an important role. Estimations results, using the recovery rates reported by Laeven and Valencia (2008) for 32 crises episodes (see Annex Table III.3.1) are reported in Table III.3.3. Given

Table III.3.3: **The determinants of the fiscal recovery rate**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
log (GDP per capita in PPP terms)	0.106** (0.045)	0.01 (0.050)						
Government effectiveness		0.169*** (0.052)						0.146** (0.054)
Asset management company				0.051 (0.088)	-0.041 (0.094)			
Budgetary balance (average t-3 to t-1; % of GDP)			2.374** (1.092)					0.561 (1.114)
Recapitalisation						0.185* (0.094)		0.030 (0.090)
Liquidity support							0.217** (0.887)	0.192** (0.078)
Government effectiveness (X) asset management					0.224** (0.106)			
Constant	-0.733* (0.386)	0.899 (0.425)	0.23*** (0.045)	0.148** (0.069)	0.148** (0.065)	0.040 (0.081)	0.022 (0.075)	-0.001 (0.092)
Number of observations	38	38	34	36	36	36	36	32
R-squared	0.14	0.34	0.13	0.01	0.13	0.10	0.15	0.47

Notes: 1/ Dependent variable is the recovery rate defined as =(gross fiscal cost - net fiscal cost) / gross fiscal cost, with the gross and net fiscal costs taken from Laeven and Valencia (2008).
2/ Robust standard errors in parentheses * significant at 10%; ** significant at 5%; *** significant at 1%.
Source: Commission services.

the limited number of observations the significance of each potential determinant is first investigated separately. The main findings are:

The result displayed in Column (1) suggests that the fiscal recovery rate is positively and significantly correlated with the level of GDP per capita. This result, in line with the IMF findings, could in fact reflect the fact that richer countries also have stronger institutions and governance to tackle the challenges raised by financial crises.

Column (2) uses in addition as explanatory variable a measure of institutional quality. The index from the World Bank Worldwide Governance Indicators measures government effectiveness with a higher value indicating higher effectiveness. ([91]) The coefficient estimated for this indicator is positive and significant while the level of GDP per capita does not appear to matter anymore, reflecting the earlier interpretation that GDP per capita can be viewed here as a proxy for the quality of institutions here. Overall, the quality of the institutional setting tends to favour policy resolution strategies yielding higher recovery rates.

As an indicator of fiscal space at the outset of the crisis or a proxy for the quality of managing public resources, the average budget balance over the three pre-crises years in Column (3) is used. Like the first two variables it is positively linked to recovery rates.

Columns (4) and (5) explore whether the use of asset management companies have impacted recovery rates. Column (4) includes a dummy variable taking a value equal to one when a country has set up asset management companies to deal with impaired assets and zero otherwise. Column (5) also attempts to account for the institutional setting that may have influenced the functioning of asset management companies. ([92]) It therefore includes a dummy variable that was created by splitting countries in two groups depending on whether their government effectiveness indicator was higher or lower than the sample average. This dummy variable was then interacted with the variable indicating whether a country had set up an asset management company. Estimation results show that the use of asset management companies per se has, but not significantly, increased recovery rates. However, when they operated in a strong institutional

([91]) To check the robustness of the findings, alternatively the Corruption Perception Index by Transparency International is used, which yielded results similar to those reported here.

([92]) See Section 4 for a brief review on country experiences with asset management companies, which indicates that strong legal and judicial systems are pre-conditions for their successful operation.

environment they were associated with significantly higher recovery rates.

Whether the use of other bank resolutions policies has impacted recovery rates is also tested. Only recapitalisations and liquidity support are found to be associated with greater shares in recovering initial fiscal outlays (Columns (6) and (7)). Other measures, with data taken from the Laeven and Valencia database, such as blanket guarantees, regulatory forbearance, mergers and bank closures, were not significant in the regression. Even though these results need to be interpreted with caution, it is not surprising to find that the injection of public capital and liquidity are linked to higher recovery rates. Both are policy tools with the most direct potential return for the public and could reflect the choice to support of viable financial institutions. ([93])

In Column (8) the significant variables from Columns (1) to (7) are considered together in order to check the robustness of the results. Results should be considered with caution, however, given the low number of observations and potential multi-collinearity between some of the explanatory variables. Nevertheless, it is worth noting that the government effectiveness indicator stands out as one of the most important factors favouring higher fiscal recovery rates. This result suggests that the fiscal implications of bank rescue operations have differed across countries depending on the quality of the institutional settings. Among the various financial crisis policy action variables, the use of liquidity support appears to be the most robust in light of controlling for other potential determinants.

3.2. COMPREHENSIVE ESTIMATES OF FISCAL COSTS

More comprehensive approaches for assessing the impact of banking crises on public finances look at the evolution of budget balances and debt. Direct fiscal costs exclude the additional impact of financial crises on public finance that is not directly linked to crisis containment and resolution measures. Tracking the budget balance after the inception of crises, however, permits to obtain a more comprehensive measure of public finance developments. But below-the-line operations are excluded in the budget balance. Since such operations can be substantial during crises, notably due to additional measures carried out by the government to support the banking sector (below-the-line direct fiscal costs), the development in the debt-to-GDP ratio is the most comprehensive measure of the fiscal implications of the crisis. It also includes below-the-line operations among in the stock-flow adjustment.

3.2.1. Changes in public balance and debt-ratios: statistical evidence

On average, crises countries ran annual budget deficits of about 4% of GDP for the length of the crisis (4-5 years) (Table III.3.4). Except for those countries where large and unsustainable fiscal positions contributed to the outbreak of the crisis (e.g., Russia), this meant a significant deterioration of about 2% of GDP per year compared to pre-crises times. During the big industrial crises episodes the slumps in budgetary positions were sharpest at 5 percentage points on average with the largest deteriorations in Finland and Sweden. The latter figures indicate that severe banking crises have had significant fiscal implications even when the net direct bail-out costs of the banking system were limited. In most cases, fiscal positions started to improve somewhat after the third crisis year, partly due to the recovery of output and partly due to fiscal consolidation efforts, but balances remained firmly negative and higher than pre-crises ratios (Graph III.3.3). Thus, crises experiences show that it may take quite long to overcome the shock to general fiscal positions.

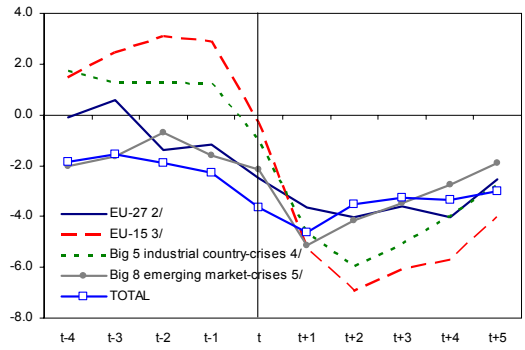
([93]) Whether the occurrence of a currency crisis and the level of the output loss (as an indicator for the depth of the crisis) have impacted the recovery rate was also explored, but neither of these variables displayed significant coefficients.

Table III.3.4: **General government balances during banking crises (% of GDP) 1/**

General government balance (% of GDP)	*Before crisis*		*During crisis*	
	Average balance (t-3 to t-1)	Balance in t-1	Average balance (t to t+2)	Average balance (t to end of crisis)
EU-27 2/	-0.8	-1.2	-3.2	-3.1
EU-15 3/	2.8	2.9	-4.2	-4.6
OECD	-1.4	-2.5	-4.9	-5.0
OECD and EU	-1.9	-2.3	-4.0	-4.1
Other than EU and OECD	-1.9	-2.2	-3.7	-3.9
Big 5 industrial country-crises 4/	1.2	1.2	-3.8	-4.3
Big 8 emerging market-crises 5/	-1.0	-1.6	-3.8	-3.6
TOTAL	**-1.9**	**-2.3**	**-3.9**	**-4.0**

Notes: 1/ Based on 49 crises episodes as shown in Annex Table III.1. Unweighted averages. t = start of crisis.
2/ Includes crisis episodes in Bulgaria, Czech Republic, Estonia, Finland, Hungary, Latvia, Lithuania, Poland, Romania, Slovak Republic, Slovenia, Spain and Sweden. For new Member States data from 1991.
3/ Includes crisis episodes in Finland, Spain and Sweden.
4/ Includes crisis episodes in Finland, Norway, Sweden, Japan and Spain.
5/ Includes crisis episodes in Argentina (2001), Indonesia, Korea, Malaysia, Mexico (1994), Philippines, Thailand and Turkey (2000).
Source: Calculations based on IMF International Financial Statistics and AMECO.

Graph III.3.3: **General government balances during banking crises (% of GDP) 1/**



Notes: 1/ Based on 49 crises episodes as shown in Annex Table III.1. Unweighted averages. t = start of crisis.
2/ Includes crisis episodes in Bulgaria, Czech Republic, Estonia, Finland, Hungary, Latvia, Lithuania, Poland, Romania, Slovak Republic, Slovenia, Spain and Sweden. For new Member States data from 1991.
3/ Includes crisis episodes in Finland, Spain and Sweden.
4/ Includes crisis episodes in Finland, Norway, Sweden, Japan and Spain.
5/ Includes crisis episodes in Argentina (2001), Indonesia, Korea, Malaysia, Mexico (1994), Philippines, Thailand and Turkey (2000).
Source: Calculations based on IMF International Financial Statistics and AMECO.

Most of the deterioration in the general balances came through the expenditure side. While across all crises episodes the increase in the expenditure-to-GDP ratio was only 1.1% of GDP ([94]) (Table III.3.5), it was much higher for the big five industrial countries crises episodes (Finland, Japan, Norway, Spain and Sweden) averaging more than 6% of GDP. This reflects on the one hand the larger government sectors and more extensive social security systems in those countries ("the numerator effect"), but on the other hand also the sharp drop in output ("the denominator effect"). Revenue ratios were on average less affected by the crises (Table III.3.5) even though the Nordic and Asian crisis countries experienced significant deteriorations due to sharp drops in tax elasticities (Graph III.3.4; see also Box I.1.3 in Part I.1). ([95])

For many emerging market countries much of the expenditure deterioration was driven by higher interest payments. Thus, despite large general budget deficits, on average countries in the sample used here ran small primary surpluses during the crises episodes (Graph III.3.5 and Table III.3.6). This was mostly the case for emerging market economies, which either faced fiscal constraints or pursued a relatively tight fiscal stance to regain confidence in the currency and economy. For example, Argentina's interest expenses jumped from less then 3% of GDP on average before the 2000 crisis to more than 8% of GDP after the crisis; other prominent examples are Mexico and Turkey. ([96]) In contrast, in industrial countries and EU transition economies the primary balances not only worsened by 2% of GDP during the crisis, but also turned into a small deficit (Graph III.3.6).

([94]) An alternative method is to compare the average expenditure-to-GDP ratio in the three pre-crisis years and the average post crisis ratio (for three years or the full crisis duration). The increase is then found to be higher at 2¾-3% of GDP reflecting the jump in ratios in t or t+1 and the only gradual reduction over time.

([95]) For more country-specific details, see the case studies in Section III.4.

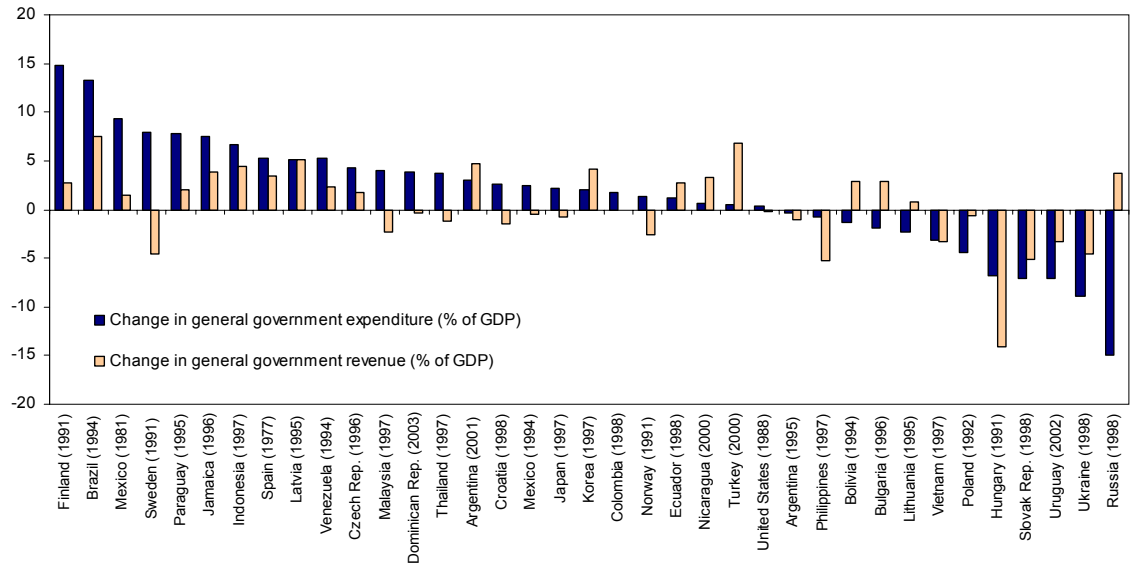
([96]) On the other hand, some of the Asian crises countries (e.g., Malaysia and Korea) did not experience sharp increases in interest payments given their relatively tight fiscal policies and low levels of debt. Detailed data on Korea, the Philippines and Thailand are however not available. Thus, comparing the data on the general budget balances for the "Big-8 emerging market crises" (Table III.3.4) with the primary budget balance for the same country group (Table III.3.6) is difficult.

Table III.3.5: **Implications of crises for general government expenditure and revenue ratios (% of GDP) 1/**

General government expenditure and revenue (% of GDP)	*Expenditure*			*Revenue*		
	t-1	End of crisis	Change (t-1 to end of crisis)	t-1	End of crisis	Change (t-1 to end of crisis)
	A	B	C=B-A	D	E	F=E-D
EU-27 2/	42.7	43.8	1.1	41.0	40.1	-0.9
EU-15 3/	42.4	51.7	9.4	45.4	45.9	0.6
OECD	38.7	41.0	2.3	36.4	35.8	-0.6
OECD and EU	36.4	38.3	1.9	33.8	34.1	0.3
Other than EU and OECD	27.3	27.9	0.6	25.2	25.6	0.4
Big 5 industrial country-crises 4/	42.2	48.5	6.3	43.5	43.1	-0.3
Big 8 emerging market-crises 5/	23.2	25.9	2.7	21.3	22.6	1.4
TOTAL	32.5	33.5	1.1	30.1	30.4	0.3

Notes: 1/ Based on 49 crises episodes as shown in Annex Table III.1. Unweighted averages. t = start of crisis.
2/ Includes crisis episodes in Bulgaria, Czech Republic, Estonia, Finland, Hungary, Latvia, Lithuania, Poland, Romania, Slovak Republic, Slovenia, Spain and Sweden. For new Member States data from 1991.
3/ Includes crisis episodes in Finland, Spain and Sweden.
4/ Includes crisis episodes in Finland, Norway, Sweden, Japan and Spain.
5/ Includes crisis episodes in Argentina (2001), Indonesia, Korea, Malaysia, Mexico (1994), Philippines, Thailand and Turkey (2000).
Source: Calculations based on IMF International Financial Statistics and AMECO.

Graph III.3.4: **Change in general government expenditure and revenue during banking crises (% of GDP) 1/**



Notes: 1/ Change in expenditure (revenue)-to-GDP ratio between t-1 (year before the start of the crisis) and end of crisis (see Annex Table III.1 for crisis dates).
Source: Calculations based on IMF International Financial Statistics.

Identifying how much of the change in the primary balance was driven by discretionary measures and how much by economic developments is difficult. The use of cyclically-adjusted primary balances can be problematic in times of crisis as neither tax elasticities can assumed to be constant nor the output gaps easily determined. Subject to these caveats Table III.3.7 shows a breakdown of the changes in the primary balances into the "normal" automatic stabilisers effects and other effects. The cyclical component (automatic stabiliser effect) was calculated as the product of the average expenditure-to-GDP ratio in the three pre-crisis years (serving as a proxy for the budget sensitivity to output changes) and the output gap. ([97]) The

([97]) The output gap was calculated as the deviation of real GDP from its trend using a Hodrick-Prescott filter for 1970-2007 (and from 1995 for transition economies) (see Box III.3.2 for details). Using s long sample, also including post crisis years, is preferable to calculating a pre-crisis trend since the latter may be biased due to a pre-crisis overheating period and a later permanent downward adjustment in

calculation seems to indicate that the biggest share in the deterioration of the primary balance in emerging markets resulted from output effects and stimulus measures were rather contained. For EU and OECD countries the calculations seem to indicate the opposite. However, one should caution about attributing the large share in "other factors" to discretionary measures. They also include direct crisis implications through falls in tax elasticities and changes in the composition of tax bases. Most importantly, expenditure plans consistent with pre-crisis GDP growth rates would result in a deterioration of the cyclically-adjusted primary balances, as the protracted slowdown associated with the crisis is reflected in a downward revision of potential output. In some countries, also unemployment-related spending surged much more than under a "standard" average budget elasticity.

Table III.3.6: **Primary general government balances during banking crises (% of GDP) 1/**

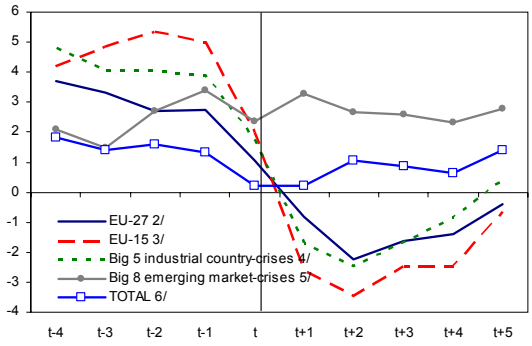
Table III.3.6: Average primary gen. budget balance before and after crisis

Primary general government balance (% of GDP)	*Before crisis*		*During crisis*	
	Average balance (t-3 to t-1)	Average balance (t-1)	Average balance (t to t+2)	Average balance (t to end of crisis)
EU-27 2/	1.9	2.7	-0.7	-0.9
EU-15 3/	5.1	5.0	-1.4	-1.6
OECD	2.7	2.5	-0.1	-0.4
OECD and EU	2.0	2.1	0.2	-0.2
Other than EU and OECD	0.6	0.7	0.7	0.5
Big 5 industrial country-crises 4/	4.0	3.9	-0.8	-1.2
Big 8 emerging market-crises 5/	2.7	3.4	2.8	2.8
TOTAL 6/	**1.2**	**1.3**	**0.5**	**0.2**

Notes: 1/ Based on 49 crises episodes as shown in Annex Table III.1. Unweighted averages. t = start of crisis.
2/ Includes crisis episodes in Bulgaria, Czech Republic, Estonia, Finland, Hungary, Latvia, Lithuania, Poland, Romania, Slovak Republic, Slovenia, Spain and Sweden. For new Member States data from 1991.
3/ Includes crisis episodes in Finland, Spain and Sweden.
4/ Includes crisis episodes in Finland, Norway, Sweden, Japan and Spain.
5/ Includes crisis episodes in Argentina (2001), Indonesia, Korea, Malaysia, Mexico (1994), Philippines, Thailand and Turkey (2000).
6/ Fewer data are available than for general govt. balances causing some deviations.
Sources: Calculations based on IMF International Financial Statistics and AMECO.

The most comprehensive indicator for measuring the impact of financial crises on public finances are changes in gross public debt-to-GDP ratios. Across all crises episodes for which data are available, the increase was 18% of GDP from the year before the crisis to the end of the crisis. Country differences were significant, ranging from an increase of more than 40% of GDP in Finland, Indonesia and Japan to small drops in debt ratios in a few countries (Latvia and Ecuador). On average, the increases in debt ratios were remarkably similar for industrial and emerging market countries. Moreover, none of the country groups managed to bring the debt-to-GDP ratio down to its pre-crisis level even eight years after the financial sector ran into systemic problems indicating that financial crises typically have long-lasting fiscal implications (Graph III.3.7).

Graph III.3.5: **Selected crises episodes: Developments in primary general government balances (% of GDP) 1/**



Notes: 1/ Based on 49 crises episodes as shown in Annex Table III.1. Unweighted averages. t = start of crisis.
2/ Includes crisis episodes in Bulgaria, Czech Republic, Estonia, Finland, Hungary, Latvia, Lithuania, Poland, Romania, Slovak Republic, Slovenia, Spain and Sweden. For new Member States data from 1991.
3/ Includes crisis episodes in Finland, Spain and Sweden.
4/ Includes crisis episodes in Finland, Norway, Sweden, Japan and Spain.
5/ Includes crisis episodes in Argentina (2001), Indonesia, Korea, Malaysia, Mexico (1994), Philippines, Thailand and Turkey (2000).
6/ Fewer data are available than for general govt. balances causing some deviations.
Source: Calculations based on IMF International Financial Statistics and AMECO.

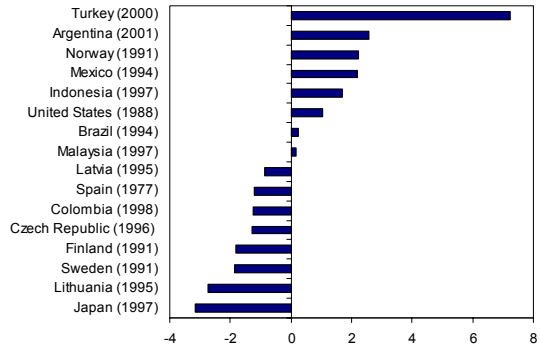
potential output. When calculating Table III.3.7 using the budget elasticities for OECD countries from Girouard and André (2005), the results are similar to the ones shown here.

Table III.3.7: **Breakdown of changes in primary budgetary balance /1**

	Automatic stabilisation 2/			Other effects 3/			Total change in primary balance		
	t	t+1	t+2	t	t+1	t+2	t	t+1	t+2
EU-27 4/	-0.1	-0.4	0.2	-1.5	-1.5	-1.6	-1.7	-1.9	-1.4
EU-15 5/	-1.0	-0.6	-0.5	-2.0	-4.0	-0.3	-3.0	-4.6	-0.8
OECD	0.2	-0.9	-0.4	-1.9	0.0	-0.5	-1.7	-0.9	-0.9
OECD and EU	0.2	-0.6	0.1	-1.3	-0.2	-0.5	-1.1	-0.8	-0.4
Other than EU and OECD	-0.6	-0.7	0.6	-0.4	1.3	1.2	-1.0	0.6	1.8
Big 5 industrial country-crises 6/	-0.5	-0.5	-0.5	-1.7	-2.9	-0.3	-2.1	-3.4	-0.8
Big 8 emerging market-crises 7/	0.4	-2.1	0.5	-1.4	3.0	-1.2	-1.0	0.9	-0.6
TOTAL	**-0.1**	**-0.6**	**0.3**	**-0.9**	**0.6**	**0.5**	**-1.1**	**0.0**	**0.8**

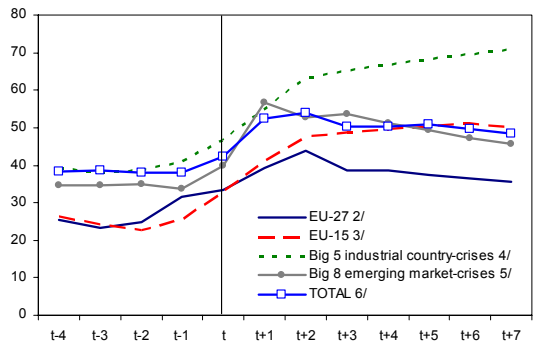
Notes: 1/ Unweighted country averages. t = start of the crisis.
2/ Calculated as the change in the output gap multiplied by the expenditure-to-GDP ratio (used as a proxy of the semi-elasticities of the budget balance).
3/ Calculated as the residual of the total change in the primary balance and the effect from automatic stabilisers.
4/ Includes crisis episodes in Bulgaria, Czech Republic, Finland, Hungary, Latvia, Lithuania, Poland, Romania, Slovak Republic, Spain and Sweden. For new Member States data only from 1991.
5/ Includes crisis episodes in Finland, Spain and Sweden.
6/ Includes crisis episodes in Finland, Norway, Sweden, Japan and Spain.
7/ In principle includes Argentina (2001), Indonesia, Malaysia, Mexico (1994), Turkey (2000), Philippines and Thailand. But data for the last three are missing.
Source: Calculations based on IMF International Financial Statistics and AMECO.

Graph III.3.6: **Selected crises episodes: Primary general government balances during crisis (% of GDP) /1**



Notes: 1/ Average primary balance during crisis.
Source: Calculations based on IMF International Financial Statistics and AMECO

Graph III.3.7: **Gross public debt in crises episodes (% of GDP) 1/**



Notes: 1/ Unweighted country averages. t = start of the crisis.
2/ Includes crisis episodes in Czech Republic, Finland, Hungary, Latvia, Poland, Romania, Slovak Republic, Spain and Sweden. For new Member States data only from 1991.
3/ Includes crisis episodes in Finland, Spain and Sweden.
4/ Includes crisis episodes in Finland, Norway, Sweden, Japan and Spain.
5/ In principle includes Argentina (2001), Indonesia, Malaysia, Mexico (1994), Turkey (2000), Philippines and Thailand. But data for the last three are missing.
6/ Excludes Nicaragua which in 2003 (t+4) received a public debt relief.
Source: Calculations based on IMF International Financial Statistics and AMECO.

Changes in the public-debt ratio reflect not only changes in fiscal balances but also macroeconomic developments. The variation in the debt-to-GDP ratio can be broken down into the change in the primary deficit and the "snow-ball effect" from interest expenditure, real GDP growth and inflation. Moreover, the debt ratio is affected by adjustments in the stock of debt, which can include "below the line" operations (e.g., through interventions in the financial sector) and valuation effects (e.g., from exchange rate variations).

Table III.3.8 attempts to compare the role that these different factors have played in past crises episodes. Most striking is that a number of countries have inflated away large parts of their debt. This included mostly emerging market and transition economies. ([98]) Remarkable also is that of the countries hit by the Asian crises only Indonesia resorted to this policy. ([99]) It also had a much slower real economic recovery and a much more drawn-out and costly bank restructuring process than the other four Asian crises countries. Column G in Table III.3.8 gives an estimate of the stock-flow adjustment (calculated as the residual). This figure should in principle include the below-the-line operations from restructuring the banking system. A comparison with the bottom-up estimates of gross fiscal outlays based on the Laeven and Valencia (2008) database indicate that the latter are dwarfed in some case by other stock-flow adjustments. These include mostly valuation effects from sharp exchange rate depreciations on foreign currency-denominated debt. ([100]) However, where those occurred they were largely cancelled out through high inflation (either from the pass-through effect or loose monetary policy).

([98]) Spain during its 1970s banking crisis also conducted an inflationary policy (the change in the GDP deflator averaged 18% per annum during 1977-80) but the snow-ball effect on debt was rather limited given the low public debt-to-GDP ratio.

([99]) The Philippines and Thailand are not shown in the table here due to lack of data on primary balances, but their average inflation rates during the crisis were much lower than in Indonesia at annually 6.5% and 2.7% respectively (measured as the change in the GDP deflator).

([100]) For example, for Turkey the stock-flow adjustment was massive. This reflects that about one third of public debt was denominated in foreign currency and the Turkish lira lost 50% of its value against the U.S. dollar in 2001 resulting in the public debt-to-GDP ratio jumping in one year by 35% of GDP. In contrast, in Malaysia public external debt was as low as 5% of GDP before the crisis, so that the 30% depreciation of the ringgit in 1998 had only a relatively small impact on the debt ratio.

Table III.3.8: **Change in gross public debt during crises episodes 1/**

(In % of GDP)	Public debt before the crisis (t-1)	Change in public debt-to-GDP ratio (t-1 to end of crisis)	Contributions to change in the ratio between t-1 and end of crisis 2/						*Memo-randum item:*
			Primary balance	Total	Snow-ball effect			Stock-flow adjustment	Gross direct fiscal costs
					Of which:				
					interest exp.	*growth effect*	*inflation effect*		
		A	B	C=D+E+F	D	E	F	G=A-B-C	H
Colombia (1998)	26.9	9.9	2.5	-2.9	6.3	1.4	-10.6	10.3	6.3
Croatia (1998)	26.7	12.6	12.8	0.1	5.3	-1.5	-3.7	-0.4	6.9
Czech Republic (1996)	12.5	0.6	2.6	-0.3	2.1	-0.4	-1.9	-1.7	6.8
Ecuador (1998)	6.2	-1.4	-14.5	24.4	23.6	-0.1	0.9	-11.3	21.7
Finland (1991)	14.0	43.8	7.3	10.1	12.9	1.3	-4.1	26.3	12.8
Hungary (1991)	66.3	18.0	4.2	-72.3	31.6	6.3	-110.2	86.1	10.0
Indonesia (1997) 7/	35.0	42.0	-10.1	-113.1	22.4	-0.4	-135.1	165.2	56.8
Jamaica (1996)	90.9	12.5	-45.7	17.6	70.1	-3.0	-49.6	40.6	43.9
Japan (1997)	100.5	51.2	19.0	27.6	20.0	-3.8	11.4	38.6	14.0
Korea (1997) 8/	5.9	10.7	-15.0	16.0	18.7	-4.1	1.4	9.7	31.2
Latvia (1995) 9/	14.7	-0.5	4.4	0.7	4.8	-0.2	-4.0	-5.6	3.0
Malaysia (1997)	35.2	7.9	-0.9	6.9	15.1	-7.5	-0.7	2.0	16.4
Mexico (1994)	25.0	22.9	-8.7	-8.8	26.1	-1.8	-33.1	40.4	19.3
Nicaragua (2000)	191.3	6.4	-1.6	-64.8	14.4	-35.5	-43.7	72.8	13.6
Norway (1991)	28.9	11.3	-6.7	8.4	9.7	-3.1	1.7	9.6	2.7
Slovak Republic (1998)	33.8	9.6	12.6	1.6	15.5	-6.0	-8.0	-4.5	…
Spain (1977)	11.8	4.6	4.9	-8.3	1.6	-0.9	-9.0	8.1	5.6
Sweden (1991)	50.1	22.0	7.4	11.0	21.8	-0.4	-10.4	3.5	3.6
Turkey (2000)	48.8	18.6	-29.0	-34.2	71.2	-6.5	-98.8	81.7	32.0
Ukraine (1998)	29.9	17.1	-1.6	-21.2	8.0	-1.9	-27.3	39.9	0.0
United States (1988)	58.5	7.0	-4.2	11.3	20.2	-5.6	-3.3	0.0	3.7
Uruguay (2002)	39.1	77.3	-6.8	-31.8	19.3	-13.6	-37.5	115.9	20.0
EU-27 3/	31.5	9.0	6.0	-11.3	12.9	-0.3	-23.9	14.3	5.8
EU-15 4/	25.3	23.5	6.5	4.3	12.1	0.0	-7.9	12.6	7.3
OECD	47.7	22.1	-4.8	2.4	28.6	-3.6	-20.4	34.1	20.0
OECD and EU	38.0	18.4	-0.5	-2.9	19.3	-1.9	-20.3	24.8	12.9
Other than EU and OECD	33.6	15.7	1.0	-2.7	17.1	-1.5	-15.8	20.9	11.1
Big 5 industrial country-crises 5/	53.5	20.5	-7.3	-20.5	20.5	-6.9	-34.1	48.3	20.6
Big 8 emerging market-crises 6/	41.1	26.6	6.4	9.8	13.2	-1.4	-2.1	17.2	7.7
TOTAL	**43.3**	**18.4**	**-3.0**	**-10.1**	**20.0**	**-4.0**	**-26.2**	**33.1**	**15.7**

Notes: 1/ Unweighted country averages. t is the year when the crisis began.
2/ The change in the gross public debt ratio can be decomposed as follows:

$$\frac{D_t}{Y_t} - \frac{D_{t-1}}{Y_{t-1}} = \frac{PD_t}{Y_t} + \left(\frac{D_{t-1}}{Y_{t-1}} * \frac{i_t - y_t}{1 + y_t} \right) + \frac{SF_t}{Y_t}$$

where t is a time subscript; D, PD, Y and SF are the stock of government debt, the primary deficit, nominal GDP and the stock-flow adjustment respectively, and i and y represent the average cost of debt and nominal GDP growth. In the table, the latter is
3/ Includes Czech Republic, Hungary, Latvia, Slovak Republic and Sweden.
4/ Includes only Finland, Spain and Sweden.
5/ Includes Finland, Sweden, Norway, Japan and Spain.
6/ In principle includes Indonesia, Korea, Malaysia, Mexico (1994), Turkey (2000), Argentina (2001), Philippines and Thailand. But data for the last three are lacking.
7/ Debt data for Indonesia estimated from IMF staff report.
8/ Interest expenditure for Korea estimated as average of Indonesia and Malaysia.
9/ For Latvia initial debt stock is in t not t-1.
Source: Calculations based on IMF International Financial Statistics and AMECO.

3.2.2. Comprehensive measures of fiscal costs of financial crises: econometric evidence

Econometric analysis helps to isolate debt changes fully attributable to banking crises. Looking at the evolution of debt following crises provides information on the overall fiscal cost. However, a rigorous assessment needs to control for debt developments that, although taking place after the crisis, are independent or only indirectly related to it. Carrying out such analysis requires estimating debt development determinants via regression analysis. Equation (1) tests whether the annual change in the public debt-to-GDP ratio was impacted by the occurrence of financial crisis in addition to changes in the debt ratio of the previous year, the level of the debt-to-GDP ratio and the output gap. The idea is that fiscal balances exhibit a degree of inertia, and that fiscal authorities follow a debt-stabilisation motive (hence, debt is an explanatory factor) and an

output-stabilisation motive (the output gap features among the explanatory variables). ([101]) These are standard determinants used in fiscal reaction functions, which have become a common tool to assess the determinants of budgetary outcomes (e.g., Gali and Perotti, 2003). To obtain a variable that reflects choices by fiscal authorities rather than mechanical changes in the denominator of the debt-to-GDP ratio, debt ratios are purged from the effect of nominal growth. ([102]) Results are displayed in Table III.3.9.

The analysis confirms that in financial crisis years, public debt accelerated significantly on top of what would have been explained by standard determinants. Table III.3.9 displays the results, which are in line with expectations. The positive impact of the lagged change in debt reflects the persistence of budgetary outcomes; the negative sign of the output gap indicates that output falling below potential leads to a deteriorating budgetary position, notably due to the operation of automatic stabilisers; the lagged debt stock tends to reduce the growth in debt in line with the debt-stabilisation motive of fiscal authorities. The coefficient of the financial crisis dummy variable measures the average additional debt increase due to the presence of a banking crisis. Results in column (1) indicate that for EU and OECD countries, the impact effect of banking crises on the gross public debt was 1.7% of GDP per annum, while the long-term effect was about 4% of GDP. ([103]) This additional change in debt is interpreted as the joint combination of direct fiscal costs to deal with the crisis, the discretionary crisis-driven stimulus, higher interest expenditure and the budgetary deterioration associated with reduction in potential output. ([104])

The bulk of the effect of the financial crisis on debt variation takes place during the first two years. To analyse in what crisis years the impact is strongest, Column (2) adds dummy variables for each financial crisis year from t to t+5. The results show that most of the additional debt increase happens over the first two years of the crises, a result very much in line with the evidence provided in Graph III.3.7 and also reported in Reinhart and Rogoff (2008c).

([101]) The output gap coefficient reflects both the operation of automatic stabilisers and discretionary changes in primary balances.

([102]) The change in the public debt-to-GDP ratio here has been adjusted for a proxy of the snow-ball effect equal to $\frac{D_{t-1}}{Y_{t-1}} * \frac{y_t}{1+y_t}$ with y_t being the nominal GDP growth rate. This expression does not take into account interest rate levels given that no comprehensive data was available for interest payment across the sample of countries considered here. The adjusted change in the debt-to-GDP ratio is roughly equivalent to the change in the general balance plus the stock-flow adjustment or the change in gross public debt (see equation in footnote 2/ of Table III.3.8).

([103]) The long-term effect being obtained as $\beta_4/(1-\beta_1)$ (see equation (1)), i.e., the impact effect is multiplied by the average duration of the adjustment of the change in debt to the banking crisis shock, $1/(1-\beta_1)$.

([104]) As it is customary in the estimation of fiscal reaction functions, the empirical specification controls for the output gap but not for potential output, the idea being that expenditure ratios adjust to changes in potential output. During banking crises, however, changes in potential could be substantial. In light of inertia in nominal expenditure to adjust to changing potential, budgetary deteriorations could follow.

Table III.3.9: **The impact of financial crises on public debt**

	EU and OECD countries 1/ 2/		Emerging market countries 1/ 2/ 3/	
	(1)	(2)	(3)	(4)
ΔDebt (t-1)	0.590***	0.597***	0.459***	0.444***
	(0.057)	(0.055)	(0.027)	(0.027)
Debt (t-1)	-0.011*	-0.009	-0.070**	-0.042
	(0.007)	(0.008)	(0.032)	(0.031)
Output gap, t	-0.262***	-0.281***	-0.323	-0.284
	(0.068)	(0.071)	(0.362)	(0.319)
Financial crisis (for all years of crisis)	1.700***		5.01***	
	(0.551)		(2.291)	
Financial crisis, t		2.841***		11.12
		(0.848)		(7.503)
Financial crisis, t+1		4.051**		14.206**
		(2.034)		(6.984)
Financial crisis, t+2		-0.755		-1.848
		(1.112)		(2.709)
Financial crisis, t+3		0.768		3.973
		(1.106)		(2.478)
Financial crisis, t+4		0.098		-1.640
		(1.247)		(2.077)
Financial crisis, t+5		1.089		-1.804
		(0.788)		(2.929)
Constant	1.822***	1.812***	9.133**	7.141***
	(0.494)	(0.488)	(2.129)	(1.989)
Number of observations	702	702	285	285
R-squared	0.72	0.73	0.68	0.72

Notes: 1/ The dependent variable is the change in the public debt-to-GDP ratio adjusted for a proxy of the snow-ball effect (calculated as the nominal GDP growth rate times the public debt-to-GDP ratio in t-1; see footnote (22)). The adjusted change in the debt ratio is roughly equivalent to the change in the general balance plus the stock-flow adjustment (see equation in footnote 2/ of Table III.3.8).
2/ Robust standard errors in parentheses * significant at 10%; ** significant at 5%; *** significant at 1%.
3/ Countries covered include Albania, Belarus, Brazil, Chile, Hong Kong, Colombia, Croatia, Egypt, Indonesia, Israel, Malaysia, Morocco, Philippines, Serbia and Montenegro, Singapore, South Africa, Thailand, Tunisia, Ukraine, Uruguay.
Source: Commission services.

Results concerning emerging economies are more difficult to obtain because of data limitations. Estimations presented in Column (3) of Table III.3.9 for a sample of emerging economies ([105]) seem to indicate that the impact of the financial crisis on the change in debt is higher than for EU and OECD countries. Results indicate that on average the increase in public debt-to-GDP ratio is equal to 5 percentage points for this country group. However, this difference in results to EU-OECD countries may largely be influenced by the sample size and the specific countries considered. ([106]) Column (4) of Table III.3.9 shows that in the case of emerging economies, the bulk of the impact of the financial crisis is also, as in the case of developed countries, very much focused at the beginning of the crisis.

Additional fiscal costs of financial crises materialise via output losses. The analysis so far neglects the fact that part of the deterioration in the output gap itself is due to the crisis. However, as shown in Annex III.1, crisis-related output losses have been estimated to be substantial. Regression analysis on the impact of financial crises on output can determine the significance of the crises and try to circumvent some of the caveats linked to the determination of output losses using deviations from trend values. The estimation results indicate that banking crises led to a substantial increase in debt by reducing output below potential (see Box III.3.2).

([105]) These countries are Albania, Belarus, Brazil, Chile, Hong Kong, Rep. of China, Colombia, Croatia, Egypt, Indonesia, Israel, Malaysia, Morocco, Philippines, Serbia and Montenegro, Singapore, South Africa, Thailand, Tunisia, Ukraine, Uruguay.

([106]) A Wald test of the difference in coefficients for the financial crisis variable between the group of industrialised countries considered in Column (1) and (2) and the group of emerging economies considered in Column (3) was performed suggesting that the difference in coefficients estimated for these two country groups was not significant.

Box III.3.2: **Econometric estimation of the impact of a financial crisis on the output gap**

An econometric analysis can substantiate the findings on the costliness, in terms of output losses of financial crises. Simple descriptive statistics, such as the average output loss during crisis episodes, may be biased by not accounting for normal cyclical output fluctuations. Moreover, the output losses based on the level estimates may be upward biased because they are based on the assumption that the output loss during the crisis is never fully recovered and because they use the pre-crisis output trend as the benchmark. The impact of banking crises on potential output however, manifests itself very gradually and possibly over a long time horizon. This in turn poses difficulties for estimating by how much banking crises affect public finances via changes in potential output and how much goes into the actual output level. The present exercise thus considers the impact of financial crises on the output gap using as explanatory variable a country-specific dummy equal to one for each year that a country suffers from a financial crisis. These estimates are thus confined to the duration of financial crises. (1) Moreover, the output gap is regressed on its lagged values, reflecting the persistent nature of output fluctuations as shown in equation (1):

$$Ouput\ gap_{i,t} = \omega_0 + \omega_1 Ouput\ gap_{i,t-1} + \omega_2 Ouput\ gap_{i,t-2} + \omega_3 Financial\ crisis_{i,t} + \varepsilon_{i,t} \qquad (2)$$

with $\varepsilon_{it} = \mu_i + \lambda_{it}$

The regression variables can be described as follows. The Financial crisisi,t variable takes the value one for financial crises. εi,t is the error term which can be decomposed into two components (i) a country-specific effect μi which reflects country-specific features mentioned above and that may affect the output gap and is assumed to be time invariant and (ii) an error term λi,t that is assumed to display i.i.d. properties and thus reflect pure random shocks to the output gap value. (2) The output gap is taken from the ECFIN-Ameco database or the OECD Economic Outlook when available. Both use production function approaches. Since these data only cover EU and OECD countries, for the analysis here an alternative measure of the output gap is calculated for all countries based on real GDP data from the IMF World Economic Outlook database when considering emerging market economies. (3) A Hodrick-Prescott filter is used to decompose real GDP into a trend and a cyclical component for the whole sample; thus using all available information, also after the occurrence of a crisis.

The estimation results (Table 1) confirm the toll that financial crises have taken on real output, in particular for industrial countries. Column (1) provides the results of the estimation for OECD and EU countries. The first two lagged values of the output gap display significant coefficients reflecting the persistent nature of output gap fluctuations. The coefficient of the financial crisis

(1) Although it is beyond the scope of the analysis to provide a quantification of the impact of financial crises on potential growth over the long run, the estimates needs to be considered as lower bounds, since the cumulated impact of potential output deterioration may be non-negligible.

(2) Country and time-fixed effects were included in the regression using dummy variables. The test of null hypothesis concerning the coefficients estimated on the time-fixed effects was also always rejected while the null hypothesis on the coefficients concerning the country-fixed effects could not be rejected. Therefore, country dummies were not included in the regression. The existence of panel unit root test on the output gap was also tested using the approach described in Im et al. (2003). Independently of the specification used, the null of panel unit root for the output gap was always rejected.

(3) The output gap approaches based on the production function approach and the trend calculations provided rather similar estimates with an average correlation coefficient of 0.64.

(Continued on the next page)

Box (continued)

dummy variable is significant and displays the expected negative sign. This coefficient indicates that, on average, the output gap decline can be as high as 1% of potential GDP per year during a systemic financial crisis, while the full impact is about double (the full impact being obtained by dividing the short-term impact coefficient by one minus the sum of the autoregressior coefficients). When considering also emerging market countries in Column (2), the basic findings are confirmed but the influence of systemic financial crisis is found to be slightly smaller at 0.8% annually of potential GDP. ([1]) The difference is however not statistically significant as confirmed in Columns (3) to (4) which include interaction dummies between the occurrence of a financia crisis and country groups (industrialised and emerging economies). The results suggest that there is no statistically significant difference in the impact of financial crisis on output gap between these different two country groups. ([2])

Table 1: The impact of financial crises on output

	OECD and EU countries	All countries		
	(1)	(2)	(3)	(4)
Output gap (t-1)	0.882***	0.471***	0.473***	0.472***
	(0.048)	(0.036)	(0.036)	(0.036)
Output gap (t-2)	-0.295***	-0.386***	-0.386***	-0.386***
	(0.044)	(0.036)	(0.035)	(0.035)
Financial crisis	-1.042***	-0.771***	-0.616**	-0.776**
	(0.267)	(0.209)	(0.271)	(0.340)
Financial crisis & currency crisis				
Financial crisis, differential effect for developing economies			-0.162	
			(0.384)	
Financial crisis, differential effect for non-EU economies				0.097
				(0.406)
Constant	1.215***	-0.178	-0.108	-0.095
	(0.468)	(0.854)	(0.379)	(0.378)
Number of observations	909	2205	2205	2205
R-squared	0.68	0.38	0.37	0.37

Notes: 1/ Output gap is the dependent variable. Regressions include crisis and non-crisis countries. Sample period is 1970-2007.
2/ Robust standard errors in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%
Source: Commission services.

([1]) To test whether the difference is due to the different features of OECD/EU-countries and other countries or due to data availability (on output gap), regressions were performed on exactly the same sample of countries using alternatively the production function and the HP methods to calculate the output gap. Results did not appear to be very different in both cases suggesting that the differences between estimations in (1) and (3) are essentially due to the sample of countries considered.

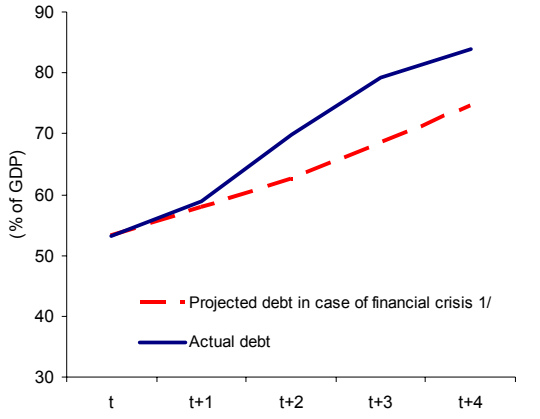
([2]) It was also tested whether twin crises–i.e. currency and financial crises–have increased output losses. When including a currency crisis dummy, the estimates suggest that, while the occurrence of a currency crisis deteriorated the output gap this effect is not statistically significant. The crisis dummy was taken from Laeven and Valencia (2008) and defined as periods with a nominal currency depreciation of at least 30% (against the U.S. dollar) that is also at least a 10% increase in the rate of depreciation to the previous year. The surprising lack of significance may, however, be attributed to the fact of multi-collinearity between the financial crisis dummy and the one for twin crises since more than half of financial crises used in the sample here coincided with currency crises. In the empirical literature currency crises are associated with significant short-term output losses.

Econometric estimates permit to simulate public debt developments resulting purely from the crisis. Existing analyses simply look at debt changes after crises to assess the overall public finance impact of banking crises. A more rigorous assessment can be obtained from the previous regressions analysis in that it permits to simulate public debt developments due to the crisis isolating the remaining determinants of debt changes. For that purpose, the estimated direct impact of crises on changes in public debt (Table III.3.9, column 1) is combined with the estimated indirect impact via the deterioration in the output gap (Box III.3.2, Table 1) to obtain a measure of the average additional change in debt attributable to the crisis (see Annex III.2 for further details). The average developments in the public debt-to-GDP ratio attributable to banking crises can thus be simulated and compared with actual ones. Graph III.3.8 reports results for OECD and EU countries that

have experienced long enough financial crises (i.e., here of a duration of at least four years, a minimum length necessary for a meaningful comparison of debt projections with actual debt levels after the outbreak of crises).

Results suggest that the largest part of the increase in public debt-to-GDP ratio that materialised after the start of banking crises was indeed caused by the crisis itself. Graph III.3.8 is based on actual and projected data for Finland, Sweden, the US and Japan up to 5 years from the start of the crisis. The projections show that the public debt-to-GDP ratio would increase by 5.3 percentage points per year. For the sample of EU and OECD countries this would imply an estimated increase of the public debt-to-GDP ratio from 53% of GDP, i.e. the initial average debt level for countries in this sample when they experienced a financial crisis, to about 74% in t+4, i.e. about 21 percentage points rise. Actual debt developments showed a bigger increase of about 30% of GDP during the first four years for these four countries. This indicates that the estimated impact of the financial crises on the debt level in these countries explains approximately 70% of the debt increase during the whole duration of the crisis.

Graph III.3.8: **Debt projections during a financial crisis for EU-OECD countries**



Notes: 1/ See text and Annex III.2 for the technical details of the simulations.
Source: Commission services.

It must be noted however that the estimates here are based on annual average figures which may underestimate the overall increase in debt due to the crisis given that the bulk of this increase took place the first two years of a financial crisis as shown in Table III.3.9 while the projections reported in Graph III.3.8 assume that this increase is linear starting from the initial debt level. The annual average change in debt can be further decomposed into the direct impact of the crisis on debt and the impact via the output gap deterioration (details are presented in Annex III.2). Results show that approximately two-thirds of the debt increase linked to the financial crisis impinges on the direct debt effect, i.e. debt outlays linked to the deterioration of budgetary balance *plus* stock flow adjustments, while one-third is linked to the effect of the output gap deterioration.

4. CASE STUDIES

A more detailed look at five crises episodes substantiates the above findings on the fiscal implications from financial crisis. We focus here on the Nordic crises countries (Finland, Norway, Sweden) and the cases of Japan and Korea because they are particularly instructive for today's EU-27. Experience in these countries shows that the interplay of the crisis resolution costs with the fiscal deterioration caused by the output losses were massive. ([107]) This may lead countries to quickly hit their fiscal space constraints and complicate restoring confidence in the economy. From the crises experience it also follows that fiscal stimulus measures loose part of their effectiveness when employed before the banking system has been resolved. However, since deciding on and implementing a banking resolution strategy has in practice often proved politically more trying than agreeing on fiscal policy support for the economy, both approaches have been applied in parallel. While this has partly contributed to softening the economic consequences of financial crises, this has also raised the crises' fiscal costs.

4.1. JAPAN

The prime example is Japan. The health of the banking system had deteriorated steadily since the bursting of the real estate price and stock market bubble in 1990. As it was not forcefully addressed by the authorities it turned into a full-blown crisis in 1997 when several large financial institutions failed. While a comprehensive financial sector restructuring responses followed, including capital injections and mergers, and lending resumed by 2000, it took until end-2005, thus 15 years after the first distress in the system had emerged before the Bank of Japan considered the crisis resolved. ([108])

Against the backdrop of the lingering problems in the financial sector, fiscal stimulus measures in Japan were apparently not very successful in re-starting economic growth. The Japanese government launched a series of fiscal packages starting from 1992, which included various tax cuts (with an ill-timed and temporary reversal in 1997) and expenditure programmes, including for public works (Table III.4.1). Overall the stimulus amounted to about 27% of GDP between 1992-2000 while real GDP growth averaged just 1%. ([109]) On top of the sizeable discretionary measures, the Japanese government's delayed action in restructuring the banking system also resulted in one the highest restructuring bills among all crises episodes in today's EU and OECD countries since 1970. At 14% of (net of recovery values) this was surpassed only by the Korean, Mexican and Turkish banking crises.([110]) In combination with the faltering economy this led gross public debt to surge from 69% of GDP in 1990 to over 180% in 2008, the highest rate in the industrial world today. When accounting for Japan's large stock of financial assets however, its debt position is less precarious.

The role of fiscal policy for Japan's recovery has been widely analysed. Most work concludes that fiscal policy was not very effective as reflected in rather low short-term and long-term multipliers (e.g., Ihori et al., 2003, Ihori and Nakamoto, 2005, OECD, 2000, Bayoumi, 2000). In this context, studies find that Japanese consumers were relatively Ricardian, i.e. increased their savings rates in anticipation of future tax increases, explaining the difficulty to jump start consumption. The ineffectiveness has in part been attributed to the erratic path of fiscal policy (e.g. the large fiscal package in 1995 that initiated a recovery was quickly reversed by the strong fiscal contraction in 1997; see e.g., Bayoumi, 2000). On the other hand, a few economists have challenged

([107]) The brief cases presented here focus predominantly on the fiscal policy responses to the crisis. More details on country-specific approaches resolving the banking systems can be found in Section III.5.1.

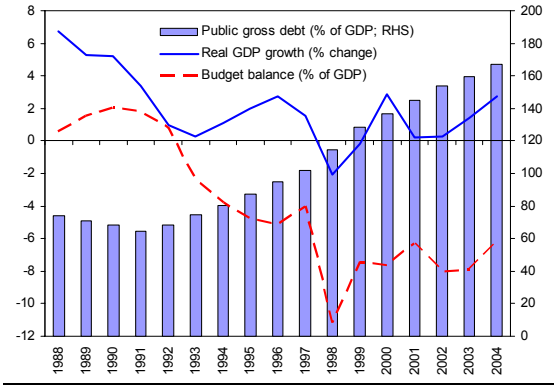
([108]) Banks had achieved the target set by the government in the "Program for Financial Revival" of halving the non-performing loans ratio from its level at the end of March 2002. Moreover, the blanket deposit guarantee was removed in April 2005 (Bank of Japan, Annual Review 2006).

([109]) Japan's fiscal packages are summarised for example in OECD (2000) and IMF (2000, 2001).

([110]) Laeven and Valencia (2008) estimate the net direct fiscal costs at 13.9% of GDP while Spilimbergo et al. (2008) estimate them to be much lower at 5.3% of GDP. The former use recovery values until t+5, the latter until 2008 (thus, t+11). This indicates that over the long run, Japan managed to recoup much of its initial fiscal outlays for the banking sector. However, to put the net outlays into perspective to other crisis episodes, we need comparable data using a consistent methodology. Thus, we use for all countries the Laeven and Valencia figures on net direct fiscal costs.

this view and argued that Japanese fiscal policy had indeed significant expansionary effects (as reflected in positive long-term multipliers) and hence contributed to avoiding an even bigger economic slump. They also argue that the surge in public debt was mostly due to the recession-caused slowdown in revenue growth (e.g., Kuttner and Posen, 2001, 2002).

Graph III.4.1: **Japan – Key fiscal variables during the crisis**



Source: European Commission, Ameco.

Table III.4.1: **Japan – Fiscal packages, 1992-93 (% of GDP, project cost basis)**

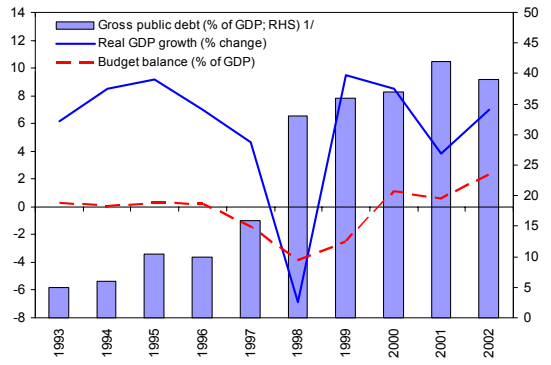
		Social infrastructure investment					
	Total	General public works	Building and equipment	Public works by local govts.	Total	Tax cuts	Other
28-Aug-92	2.2	0.7	0.1	0.4	1.3	0.0	0.9
13-Apr-93	2.7	0.8	0.2	0.5	1.6	0.0	1.1
16-Sep-93	1.3	0.2	0.0	0.1	0.4	0.0	0.9
08-Feb-94	3.1	0.7	0.1	0.1	0.9	1.2	1.0
14-Apr-95	0.9	0.0	0.0	0.0	0.2	0.0	0.7
20-Sep-95	2.6	0.8	0.2	0.2	1.3	0.0	1.3
24-Apr-98	3.3	0.9	0.3	0.3	1.5	0.9	0.9
16-Nov-98	4.7	1.1	0.4	0.0	1.6	1.2	1.9
11-Nov-99	3.6	0.9	0.3	0.0	1.4	0.0	2.3
19-Oct-00	2.2	0.5	na	0.0	1.0	0.0	1.2
16-Nov-01	0.2	0.0	0.0	0.0	0.1	0.0	0.1
01-Feb-02	0.5	0.0	0.0	0.5	0.5	0.0	0.0
30-Jan-03	0.7	0.3	na	0.2	0.6	0.0	0.2
Total	**28.2**	**7.0**	**1.7**	**2.2**	**12.5**	**3.3**	**12.4**

Source: OECD Economic Survey, Japan, February 2004.

4.2. KOREA

The 1997 Korean experience included policies and outcomes which contrast the Japanese experience. Korea focused on the resolution of the financial sector and resorted only to small discretionary fiscal stimulus measures. Its relatively small budget deterioration of 4% of GDP (1998 compared to 1996) given the sharp downturn of the economy (-6.7 % GDP growth in 1998, Graph III.4.2) was only to a small extent driven by additional spending on the social safety (estimated at about 1½% of GDP; see Chopra et al., 2001). The economy rebounded quickly thereafter helped by the sharp depreciation of the currency and the budget returned into a surplus position only two years after the crisis. While the conditionality of the IMF-supported programme to Korea had initially foreseen a pro-cyclical tightening to restore confidence in the currency, the conditionality was later adjusted when the GDP slump during the crisis turned out much sharper than expected. This gave greater room for automatic stabilisers and an extension of the small social safety (Ghosh et al., 2002, Lane et al., 1999). Nevertheless, fiscal policy remained very cautious and the deterioration of budget balances limited. This approach is generally perceived to have served Korea well to swiftly overcome its crisis in light of the immense banking resolution cost of 23% of GDP that it had to shoulder (Spilimbergo et al., 2008).

Graph III.4.2: **Korea – Key fiscal variables during the crisis**



Notes: Estimates based on IMF Staff Report.
Source: IMF International Financial Statistics and IMF Staff Report Korea, 2002.

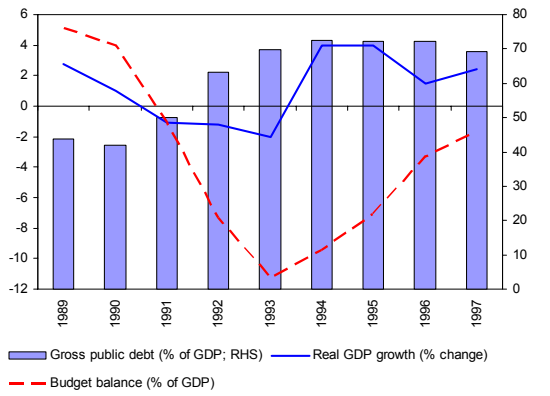
4.3. SWEDEN

Sweden is typically considered the poster child of resolving a banking crisis. The banking crisis first emerged in 1990 when the economy went into recession and the asset price bubble burst. It developed into a systemic crisis in autumn 1992 when Sweden also had to abandon its peg to the ECU. As detailed in Section III.5.1 the government quickly and comprehensively restructured the banking system which allowed the initial fiscal

outlays of 3.6 % of GDP to be nearly fully recovered. Nevertheless, the output loss was huge (30% of trend GDP level as estimated by Laeven and Valencia, 2008) and therefore during the crisis, fiscal policy was initially intended to mend the sharp GDP drop (Graph III.4.3). This included not only letting automatic stabilisers work but adding a discretionary fiscal stimulus estimated at about 4% of GDP over three years, mostly through tax cuts (2.4 % of GDP). Consequently, the budget balance deteriorated rapidly from a surplus of 4.0% of GDP in 1990 to a deficit of 7.3 % in 1992 while public debt surged from 42% of GDP to 62 % (Table III.4.2). Since these runaway deficits were perceived not to be sustainable, they were followed by a fiscal consolidation package which started with expenditure cuts already in 1993, although the overall fiscal stimulus was still somewhat expansionary. Nevertheless, just through the impact of the worsening economy the headline deficit widened another 4 % of GDP from 1992 to 1993 (the primary balance deteriorated by 3½% of GDP). The automatic worsening occurred not only on the expenditure side where social spending soared by 4% of GDP but also on the revenue side where receipts plummeted by 4% of GDP (excluding tax cut effects) reflecting the sharp drop of tax elasticities due to, among other factors, the burst of the real estate bubble (see Box I.1.3 for more details on the development of tax elasticities during crises).

However, there is no consensus on whether the Swedish expansionary fiscal policy has helped smoothening or rather aggravated output losses. Giavazzi and Pagano (1996) argue that budgetary policies in 1991-93 may have had non-Keynesian effects, i.e. private agents perceived the large fiscal deterioration as permanent, thus expecting a future increase in the tax burden, and therefore reduced consumption and investment. Other authors (Agell, 1996 and Barrot, 1995) however, interpret the change in consumption rather as an adjustment to the high unemployment environment (with the unemployment rate jumping from 1.6 % in 1990 to 8.2 % in 1993).

Graph III.4.3: **Sweden - Key fiscal variables during the crisis 1/**



Notes: 1/ ESA95 data since 1995; before old definition.
Source: European Commission, Ameco.

Table III.4.2: **Sweden - Key fiscal indicators (% of GDP) 1/**

	1989	1990	1991	1992	1993	1994	1995
General government balance	**5.1**	**4.0**	**-1.1**	**-7.3**	**-11.3**	**-9.4**	**-7.1**
Primary government balance	10.2	8.8	3.8	-2.2	-5.6	-3.2	-0.7
Cyclically adjusted primary balance	8.3	7.5	4.2	-0.5	-2.3	-1.1	0.5
Gross public debt	43.6	42.0	50.1	63.3	69.9	72.4	72.1
Public expenditure	**57.1**	**58.1**	**59.2**	**64.7**	**66.7**	**63.6**	**61.0**
o/w: Interest	5.1	4.8	4.9	5.1	5.7	6.2	6.5
Public consumption	26.2	27.4	28.1	29.2	28.8	27.8	26.6
Social benefits	18.9	19.1	20.1	22.2	23.2	22.9	21.3
Public investment	3.9	3.8	3.6	3.6	3.7	4.0	3.8
Total revenue	**62.3**	**62.1**	**58.2**	**57.4**	**55.4**	**54.2**	**53.9**
o/w: Direct taxes	13.3	13.5	12.6	11.8	11.2	11.6	12.4
Indirect taxes	15.4	16.4	16.8	15.4	14.4	13.6	13.1
Social security contributions	14.5	14.9	14.6	13.9	13.2	13.1	13.4
Discretionary policy							
Based on cyclically adjusted data	1.2	-0.8	-3.3	-4.6	-1.8	1.2	1.6
Measures as reported by MoF 2/	...	...	-2.8	-1.0	-0.1	...	...
Expenditure	...	...	1.5	0.7	-0.7	...	...
Revenue	...	...	-1.3	-0.3	-0.8	...	...

Notes: 1/ Data are based on former definition since ESA 95 data are only available since 1993.
2/ Data reported by Eschenbach and Schuknecht (2002).
Source: Commission services and Eschenbach and Schuknecht (2002).

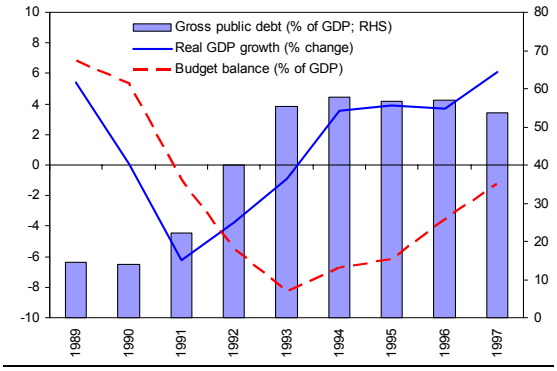
4.4. FINLAND

Compared to Sweden, Finland hit its fiscal space limits much earlier and is an example that fiscal consolidation may need to accompany the resolution of a financial crisis. Finland's root causes of the crisis were similar to those in Sweden but the crisis impacted the economy much harder as the build-up of imbalances had been larger and the downturn was exacerbated by the loss of trade with the Soviet Union. The collapse of real activity translated instantly into a sharp deterioration of the fiscal balance (from 1990-1993, the headline government balance worsened by 14% of GDP) and a near quadrupling of the debt ratio in three years (Graph III.4.4). Since this

development undermined confidence (reflected in pressure on the exchange rate and spreads) the government early on reacted to the worsening budget balance and the sustainability concerns with consolidation policies. The government which took office in 1991 implemented an austerity package that comprised annual budget savings of 6% of GDP over four years, compared with the initially projected expenditure levels. Most immediate spending cuts came in education and health (the former was cut by 7% in real terms during 1992-94; the latter dropped by 12% from 1991-1994) as well as public investment (the public investment-to-GDP ratio fell by 1 % of GDP) (OECD Economic Surveys). ([111]) At the same, time tax reforms helped to stabilize and even add 3% to the revenue-to-GDP ratio during the crisis, which stands in sharp contrast to Sweden (Table III.4.3). Nevertheless, the consolidation measures were dwarfed by the continuing deterioration of the deficit from automatic stabilisers on the expenditure side. ([112])

Finland's fiscal austerity package has generally been viewed as the appropriate response to the crisis despite the sharp output losses. ([113]) A temporary fiscal stimulus may not have helped to dampen the output costs since econometric studies on consumption behaviour indicate that Finnish consumers were Ricardian (Brunila, 1996). The need for a more cautious fiscal policy was also driven by the much more costly resolution of the banking crises than in Sweden which amounted to 11% of GDP. The higher direct fiscal costs are largely explained by the higher imbalances in Finland's banking system while the Finnish crisis resolution featured some of the same "best practices" as Sweden's, such as broad political support and the use of an efficient bank restructuring agency and asset management companies. However, the use of regulatory forbearance in Finland, in contrast to Sweden, may have drawn out the crisis resolution and added to the bill.

Graph III.4.4: **Finland – Key fiscal variables during the crisis**



Source: European Commission, Ameco.

Table III.4.3: **Finland – Key fiscal indicators (% of GDP)**

	1989	1990	1991	1992	1993	1994	1995
General government balance	**6.8**	**5.4**	**-1.0**	**-5.5**	**-8.3**	**-6.7**	**-6.2**
Primary government balance	8.2	6.7	0.9	-2.9	-3.9	-2.6	-2.2
Cyclically adjusted primary balance	4.8	4.1	2.1	0.5	0.2	0.4	-0.3
Gross public debt	14.4	14.0	22.2	40.0	55.3	57.8	56.7
Public expenditure	**44.4**	**47.9**	**56.7**	**62.3**	**64.7**	**63.9**	**61.6**
o/w: Interest	1.4	1.4	1.9	2.5	4.5	5.0	5.1
Public consumption	20.0	21.7	24.7	25.3	24.2	23.5	22.8
Social benefits	13.3	14.6	18.2	22.2	23.7	23.7	21.9
Public investment	3.1	3.5	3.7	3.5	2.8	3.0	2.7
Total revenue	**51.2**	**53.3**	**55.8**	**56.8**	**56.4**	**57.1**	**55.4**
o/w: Direct taxes	16.6	17.3	17.4	16.5	15.6	17.2	17.3
Indirect taxes	13.2	13.4	12.9	12.3	12.2	12.9	12.9
Social security contributions	11.3	12.6	13.4	14.4	14.9	15.8	14.7
Discretionary policy (Based on cyclically adjusted data)	-0.2	-0.7	-2.0	-1.6	-0.3	0.3	-0.7

Source: European Commission, Ameco.

4.5. NORWAY

In contrast to the other two Nordic crises countries, Norway had greater fiscal space during the crisis which it used for fiscal stimulus. Problems emerged in Norwegian banks already from 1987 when the sharp drop in oil prices slowed the economy and the asset price bubble burst. While the government intervened in some small banks, risks continued to build up in the rest of the sector and resulted 1991 in a systemic crisis, when the largest three banks ran into trouble. At that time the government intervened promptly and

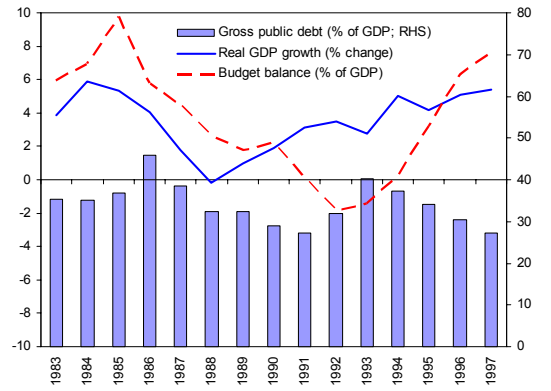
([111]) Over the medium term however, education and training provision were increased significantly contributing to the adjustment of the economy and its strong economic performance.

([112]) The sharp drop of tax elasticities during the crises in Finland and Sweden is illustrated in the note by Barrios "The short and medium-term evolution of tax elasticities in the EU" (ECFIN/C2/D6; 5 January 2009).

([113]) For example, in "Three assessments of Finland's economic crisis and economic policy" published in 1993 by the Bank of Finland, two authors (Bordes and Currie) supported the government's fiscal adjustment measures while one (Söderström) cautioned that fiscal consolidation should await a recovery in output and employment.

comprehensively,([114]) so that over time it fully recovered its initial fiscal outlays. The containment of direct fiscal costs was helped by the much weaker real output losses during the Norwegian crisis since the economy recovered during the crisis supported by rising oil prices and the early depreciation of the currency in 1986. With rather low gross public debt (29% of GDP) and a significant net financial asset position (40% of GDP) at the outset of the crisis the government was in a position to pursue active countercyclical fiscal policy (Graph III.4.5). Norway's cyclically-adjusted primary fiscal deficit widened by 4½% of GDP between 1989 and 1992 (Table III.4.4). After a minor fiscal tightening in 1993, the Norwegian government embarked on a consolidation programme with the brunt of expenditure restraint to be borne by transfers to households (OECD, 1995). The adjustment was, however, much more modest than the efforts by Sweden and Finland given the relatively large fiscal space and the much better economic performance.

Graph III.4.5: **Norway – Key fiscal variables during the crisis**



Source: European Commission Ameco, OECD Economic Outlook and IMF International Financial Statistics

Table III.4.4: **Norway – Key fiscal indicators (% of GDP)**

	1989	1990	1991	1992	1993	1994	1995
General government balance	**1.8**	**2.2**	**0.1**	**-1.9**	**-1.4**	**0.3**	**3.2**
Primary government balance	5.3	5.7	3.3	1.4	1.9	3.3	6.0
Cyclically adjusted primary balance 1/	-3.4	-5.1	-7.7	-9.5	-9.1	-7.2	-5.5
Gross public debt	32.3	28.9	27.3	31.9	40.2	37.3	34.2
Public expenditure	**51.4**	**53.3**	**54.5**	**55.7**	**54.6**	**53.7**	**50.9**
o/w: Interest	3.6	3.5	3.2	3.2	3.3	3.1	2.8
Public consumption	20.7	21.2	21.8	22.7	22.5	22.2	21.6
Social benefits	15.1	15.5	16.0	16.6	16.5	16.0	15.4
Public investment	3.9	3.5	3.7	3.8	3.3	3.2	3.2
Total revenue	**53.2**	**55.5**	**54.6**	**53.9**	**53.2**	**54.0**	**54.2**
o/w: Direct taxes	15.1	15.8	15.2	14.7	14.9	15.6	16.1
Indirect taxes	15.4	15.1	15.4	15.5	15.8	16.3	16.0
Social security contributions	11.0	10.9	10.8	11.0	10.1	10.1	9.8
Discretionary policy (Based on cyclically adjusted data)	**-0.7**	**-1.7**	**-2.6**	**-1.8**	**0.3**	**1.9**	**1.7**

Notes: 1/ OECD data.
Source: European Commission Ameco, OECD Economic Outlook and IMF International Financial Statistics.

([114]) A few principles of the bank resolution strategy deviated from that of Finland and Sweden. In particular, Norway did neither issue a blanket guarantee nor install an asset management company (see e.g. Drees and Pazarbasioglu, 1998). Moreover, Norway's ownership in banks after the crises was higher and it took more time to divest (at a profit).

5. GENERAL LESSONS FROM HANDLING BANKING CRISES FOR FISCAL COSTS

Drawing on the statistical, econometric and country-specific experiences allows deriving some broad conclusions as regards fiscal costs from banking crises and their determinants. These lessons refer to the fiscal implications of government interventions in the financial sector as well as the broader fiscal consequences from economic developments. To what degree these lessons are useful for the current financial and economic crisis, will be discussed in Section III.6, since the past experiences were with individual country or regional crisis episodes rather than of a global nature.

5.1. BANK RESCUE OPERATIONS AND DIRECT FISCAL COSTS

While there is no cook-book recipe for what constitutes good crisis resolution policies, some general principles of good practices have emerged. ([115]) They comprise two building blocks. First, strong governance elements are key to allow for a quick, comprehensive, transparent and consistent response. And second, the strategy needs to include specific policies for the three phases of a banking crisis: containment, resolution and exit. Delays in all three phases can be costly. Stepping in late to contain the crisis may aggravate liquidity problems; letting insolvent banks operate for too long before resolving or restructuring them may amass additional costs due to moral hazard; and lacking a clear strategy on how to withdraw public support after the crisis may distort competition and investment in the banking system and thus prolong the negative consequences of financial crises. In addition, policies also need to be compatible with the infrastructure, capacity and authority of the agency in charge of banking resolution as well as the macroeconomic constraints.

A crucial factor to applying a resolution strategy resolutely is strong governance, including political will and broad political support. The cases of all three Nordic countries are good examples. In Sweden all main political parties agreed on a framework of crisis resolution which was promoted by sharing information with the opposition and having it represented in the newly created Bank Support Authority that managed the crisis (Ingves and Lind, 1996, 2008; Andersson and Viotti, 1999 and Jonung, 2009). In contrast, one reason why the Bulgarian crisis resolution turned into one of the most expensive among transition economies is the lack of political will and commitment to restructure banks in the early 1990s. This changed only with the introduction of the currency board after the currency crisis in 1997 (see Bonin and Wachtel, 2004). Similar arguments have been made for the high crisis resolutions costs in other transition and emerging market economies.

Moreover, transparency and consistency play an important role to regain confidence. This includes transparency on the authorities' resolution strategy and banks' financial situation. Again Sweden's policies provide examples. The Swedish authorities explained to the banks and the public how to determine which banks to save (Heikenstein, 1998). In this process, they forced banks to value their assets conservatively and correct the picture of their financial situation. The transparency on the financial system and the resolution strategy helped Swedish banks restore credit lines from abroad after senior officials had met with foreign bankers. In contrast, in 1997 crises in the Philippines and Indonesia the IMF and World Bank raised concerns about the transparency of the bank restructuring process (Economist Intelligence Unit, 1999, 2000). Both countries achieved only relatively low recovery rates, also when compared to Korea and Thailand.

In addition to strong governance, the specific measures taken in the three crises phases matter for the costliness of crises responses. In the crisis containment phase restoring confidence is the first order. Liquidity support and blanket guarantees are the main options to stop depositor and creditor runs when other measures, such as access to higher credit lines from foreign banks and political statements fail to keep panic at bay. At the same

([115]) The following section draws largely on findings by the IMF and World Bank in dealing with systemic banking crises. For more details, see for example, Hoelscher and Quintyn (2003), Frydl and Quintyn (2000), Lindgren et al. (1999), Ingves and Hoelscher (2005), and Rojas-Suares and Weisbrod (1996).

time the above empirical evidence suggested they were also among the most expensive measures even though liquidity support seems to have fostered recovery rates. Thus, in the absence of alternatives can policymakers still impact how bank rescue operations become? Experience suggests that it is not the use of blanket guarantees and liquidity support per se that is costly, but how also how the resolution and exit phases are dealt with, as shown below.

The aim of the resolution phase is to restore the profitability and solvency of the banking system. In principle it consists of three components, according to Hoelscher and Quintyn (2003):

The first part is to identify which banks are viable but undercapitalized and which are non-viable and insolvent. As long as the financial crisis unfolds and impacts also the real economy such an assessment is very challenging and may need to be revised over time as more banks are found to be in trouble. Therefore, applying rather strict evaluation criteria in a systemic crisis may give the authorities early on a conservative picture of the potential needs for intervention. This was the case, for example in Norway and Sweden, while, in contrast, in Japan recognizing the extent of losses on non-performing assets and therefore the size of the undercapitalization of the banking system was delayed for nearly a decade as loose loan classification standards resulted de facto in an extended period of regulatory forbearance. ([116]) This contributed to the rather high fiscal costs for resolving the Japanese banking crisis. A similar argument on delaying the diagnosis and resolution has been made for the US Savings and Loan crisis. When problems emerged in the 1980s regulations (such as capital requirements and accounting standards) were loosened merely postponing the ultimate clean-up of the thrift industry (Spilimbergo et al., 2008). For that crisis overall net fiscal costs were contained at about 2½% of GDP but recovery rates of initial fiscal outlays were rather low at about one third.

The second component of the resolution phase is to intervene (liquidate or merge) in those banks identified as insolvent and recapitalize and restructure the viable banks (through private and/or public funds). To keep fiscal costs low, private contributions should be sought first but may not be available in a systemic crisis. While many technical options are available for this process and their pros and cons should be weighted on a country-by-country basis, the resolution process should follow the principle of equal and fair treatment, particularly as regards burden sharing, with shareholders typically to cover losses to the fullest extent possible. Thus, restructuring policies should be applied to all banks on a uniform basis. ([117]) Indonesia's bank restructuring went through an intense stop-and-go process in part because of problems to build consensus on how to treat well-connected banks and the IMF-supported program was held up pending a satisfactory resolution of the private bank recapitalisation scheme. This is considered to have immensely added to overall fiscal costs (Enoch et al., 2002a).

A third component of the crisis resolution phase is the management of nonperforming assets. This is not only intrinsically linked to the amount of capital needed to re-establish solvency, but also to assure liquidity and medium-term viability. Banks can either manage those assets themselves or sell them to private or public asset managers. This can involve separating a bank into a good and bad bank, with the bad bank having to be sufficiently funded through private or public capital. In a systemic crisis, it is likely that much (most) funding needs to be provided by the public sector. Bad bank assets may then be bundled into a centralised public asset management company (AMC) that specialises on restructuring and recovering debt or disposing of assets. While the use of AMCs is advocated strongly by some also in the current crisis (e.g., Gros, 2009; Hall and Woodward, 2009; Sachs, 2009; Strauss-Kahn, 2009), ([118]) experience shows that it is not a

([116]) For banking crises in transition economies, the Bulgarian case is exemplary for how postponing the decisions to resolve banks can increase fiscal costs (Enoch et al., 2002b).

([117]) For more details on options of bank restructuring see, for example, Enoch et al. (2002a) and Dziobek (1998).

([118]) Arguments in favour of asset management companies include the division of labour between rebuilding a bank and managing impaired assets, facilitating the market to value banks by separating the bad assets, strengthening of credit discipline by separating the bad loans from the credit officers who initiated them, economies of scale in the management of bad assets as well as enhanced bargaining

panacea (Table III.5.1). ([119]) It worked well, for example in Sweden which was, however, helped by the fact that it had to handle mostly a portfolio of real estate rather than a more complicated financial portfolio structure (Woo, 2002). Also, the Korean AMC operated efficiently and resolved two thirds of its non-performing assets within four years after the crisis and recovered all of its outlays by 2008 (Myung-Bak, 2009). On the other hand, progress in Mexico (1994), Indonesia, the Philippines and Thailand was much slower (Becker, 2004). This was linked to the late set-up of the ACM in Thailand (four years after the outbreak of the crisis) and deficiencies in the legal and judicial framework in the other aforementioned countries as well as the transfer of politically connected loans that were difficult to resolve (Calomiris et al., 2005). This conclusion is corroborated by econometric estimates (Section III.3) which find that higher recovery rates are associated with the use of asset management companies only in the case of efficient governments (as proxied by the World Bank government effectiveness indicator and the Transparency International corruption perception index). Another difficulty for operating AMCs was the sheer size of their portfolios, which in the Asian crisis countries ranged between 15% and 40% of GDP compared to about 9% of GDP in Sweden and Finland (Giorgianni, 2001). Norway, on the other hand, achieved a high recovery rate by letting banks manage their problematic assets. Thus, a decision on the usefulness of an asset management company would need to be made on a country-by-country basis. ([120])

Since all government intervention in the crisis should be temporary, in the exit phase, it should be unwound in a coherent and transparent manner. The exit strategy should be an inherent part of a governments' overall crisis management framework and communicated early to help guide decisions by depositors and private investors. This includes the (partial) withdrawal of guarantees as a first step. In practice they were withdrawn on average after 4¼ years. The exit phase also includes disposing acquired assets as well as reducing and ultimately full withdrawing liquidity support. The timing for selling nationalized banks should consider not only the expected net direct return but also implicit costs from government intervention, such as reduced competition in the financial sector. But decisions have often also reflected political considerations. Norway, for example, which intervened in its largest three banks accounting for more than half of total banking assets, sold the first two banks within four and nine years while maintaining a 34% share in the third until today to avoid that the banking system was fully foreign-owned (Bergo, 2003, Sandal, 2004 and Vale, 2004).

In summary, a few lessons can be drawn on the link between handling systemic crises and their direct fiscal expenses. How costly the crisis management process becomes for the government depends ultimately on the depth of the crisis and how accurately and quickly bank losses are assessed and acted upon by the government. Experience and econometric estimates have shown that not fully realising bank losses upfront, thus allowing for regulatory forbearance, may buy banks some time but also postpones the needed clean-up of the banking sector and ultimately increases the fiscal costs of financial crises. Government intervention may then become more expensive since moral hazard may induce banks to take on extra risks and borrowers to strategically default. Acting resolutely requires broad-based political support and a transparent and consistent crisis resolution strategy with clear objectives (including for the end of government interventions) and a timeline, which, however,

power through collecting multiple claims on debtors and special powers for government AMCs to expedite loan resolutions (Woo, 2002 and Klingebiel, 2000). However, they are also associated with disadvantages, such as weakening the knowledge base about the loan and the credit discipline by separating them from the originating bank, difficulty in pricing the transferred assets, political interference (in the valuation and management of assets), the lack of expertise in running an asset management company and the costs implied in operating it, including through hiring of external experts (Woo, 2002 and Bergo, 2003).

([119]) See Klingebiel (2000), Woo (2002) and Ingves et al. (2004) for a review of AMCs in the resolution of banking crises and Ingves and Lind (1997) for the functioning of the Swedish AMC.

([120]) Bank restructuring and corporate debt restructuring are closely linked if distress in the corporate sector was either a cause or consequence of the crisis. Successful corporate debt restructuring would contribute to higher recovery values of banks' assets. For a discussion on the methods (out-of-court processes, including through asset management companies, versus a bankruptcy regime) see for example Stone (2000) and Woo (2002).

Table III.5.1: **Experience with "bad banks" (Asset Management Companies) during banking crises 1/**

Crisis episode	Type of asset management company				Direct fiscal costs (% of GDP)			Transferred assets bigger than 10% of GDP?	Generally considered a success?
	Centra-lised	De-centra-lised	Rapid disposal	Restruc-turing	Gross fiscal costs	Net fiscal costs	Recovery rate (%)		
OECD countries									
Czech Republic (1996)	X		X		6.8	5.8	14.7	..	..
Finland (1991)		X		X	12.8	11.1	13.3	N	Y
Japan (1997) 2/	X				14.0	13.8	1.4	N	N
Korea (1997)	X		X	X	31.2	23.2	25.6	Y	Y
Mexico (1994)	X	X	X		19.3	18.0	6.7	Y	N
Spain (1977)	X		X		..	..	..	N	Y
Sweden (1991)		X		X	3.6	0.2	94.4	N	Y
United States (1988)	X		X		3.7	..	..	N	Y
Other									
Ghana (1982)	X			X	6.0	6.0	0.0	N	N
Indonesia (1997)	X			X	56.8	52.3	7.9	Y	N
Malaysia (1997)	X		X	X	16.4	5.1	68.9	..	Y
Philippines (1981)	X		X		..	..	..	Y	N
Philippines (1997)	X				13.2	13.2	0.0	Y	N
Thailand (1997)	X			X	43.8	34.8	20.5	Y	N
Lithuania (1995)	X		X		3.1	2.9	6.5	..	N

Notes: 1/ Start of systemic crises in brackets. Other countries using AMCs include Bulgaria (1996), Columbia (1982, 1998), Croatia (1998), Estonia (1992), Dominican Republic (2003), Ecuador (1998), Jamaica (1996), Nicaragua (2000), Russia (1998) and Vietnam (1997).
2/ Spilimbergo (2008) put the gross fiscal costs for Japan at 9.1% of GDP and net fiscal costs at 4.3% of GDP considering a recovery period until 2007.
Source: Data from Laeven and Valencia (2008), other information from Klingebiel (2000), Enoch at al. (2002a) and IMF country reports.

may need to be adjusted flexibly as the crisis unfolds. Within this broad framework, individual measures, such as recapitalisation, liquidity support and the use of asset management companies, when combined with high government effectiveness, have been associated in econometric regressions with higher recovery rates.

5.2. BROAD PRINCIPLES ON THE ROLE OF FISCAL POLICY SUPPORT

As for bank resolution practices, history provides some broad lessons on the role that fiscal policy can play during recessions. These relate to three questions: (i) what has been the greatest source of fiscal support in past recessions, (ii) under what conditions have discretionary measures been successful and (iii) which type of discretionary stimulus has had the greatest effect. The following provides brief responses to these questions based on the literature as recently summarised by the IMF, European Commission and OECD. ([121]) These findings draw largely on experiences with fiscal stimulus measures during cyclical downturns rather than recessions accompanied by financial crises, however. Thus, the latter pose even greater requirements for fiscal policy to have the intended effects. In particular, as the Japanese experience has shown, as long as the underlying banking sector problem is not resolved, the fiscal stimulus effect is likely to be muted. This point, which has recently been stressed as an issue handling the current crisis, ([122]) will be picked up again in Section III.6.

In past economic downturns more countercyclical support has been provided by automatic stabilisers than by discretionary measures. This conclusion is drawn by the IMF (2008a) when analysing a set of 41 advanced and emerging market economies between 1992 and 2007. ([123]) While the IMF analysis does not account specifically for financial crises episodes, its finding is broadly corroborated by the crises country data analysed in the previous

([121]) For recent IMF work see Spilimbergo et al. (2008), IMF (2008a), European Commission (2008c) and OECD (2009a).

([122]) For example, Blanchard (2009) and Spilimbergo et al. (2008).

([123]) Deroose, Larch and Schaechter (2008) in their analysis on fiscal policy in the euro area also highlight the importance of automatic stabilisers and show that in some years their stabilising effect has even overcompensated for a pro-cyclical discretionary stance.

sections. From Table III.3.7, it followed that in emerging market countries during crisis episodes the majority of the budgetary deterioration was driven by the output effect. For industrial countries the data were at first sight in the opposite direction. However, when considering the sharp economic downturns during these episodes, accounting for the methodological problems when estimating the changes in the cyclically-adjusted balances and considering the country-specific bottom-up information on fiscal measures, one can conclude that discretionary policy has not been the pre-dominant factor driving the development of budgetary balances. For example, for Sweden the Ministry of Finance estimates the fiscal measures carried out between 1991-93 at 3.9% of GDP, ([124]) while the change in the cyclically-adjusted primary balance adds up to a 9.9% of GDP. This signals the potential huge size of overestimating the discretionary effects from a top-down approach.

Moreover, discretionary fiscal policy has rarely exhibited the intended counter-cyclical effect. It has typically been found to have been pro-cyclical over the business cycle in developing and emerging market economies (e.g., Manasse, 2006) and largely pro-cyclical in good times in industrial countries (e.g., Alesina and Tabellini, 2005 and Turrini, 2008). Explanations for pro-cyclicality include difficulties in timely and correctly identifying the cyclical position, implementation lags and political economy arguments that create a deficit bias in good times. This argument is, however, less relevant for a protracted economic downturn.

Based on these findings a number of factors have emerged that should be in place for counter-cyclical fiscal stimulus to be successful in terms of output smoothing. The first set of criteria includes the well-known "three Ts" (i) timely so as to quickly support economic activity in the period of falling private demand, (ii) temporary so as to avoid a permanent deterioration in budgetary positions and that consumers behave in a Ricardian way by reacting to higher budget deficits with higher private savings and (iii) targeted so as to maximise the stabilisation impact in light of limited budgetary resources. ([125])

Empirical estimates (regression and model based) provide some indication on the "pecking order" of fiscal policy instruments with regard to their impact of real GDP growth, but the uncertainty range is broad and varies across countries. ([126]) Nevertheless, on average, short-run multipliers have been found to be largest for public expenditure with no significant difference for public investment and consumption (e.g. Roeger and int' Veld, 2009 and Freedman et al., 2009). The Commission services simulations with the QUEST model put short-term multipliers, in normal (non-crisis) times, for both a temporary increase in public investment and public consumption at around 1.0 and 0.9 for the EU. Short-term multipliers for government transfers are much lower, however, at about 0.3. Tax cuts have generally been associated with lower short-term multipliers, due to leakages into higher private savings. Commission model simulations put the short-term multipliers at around 0.3 for a temporary reduction in labour taxes and 0.5 for a drop in consumption taxes.

In addition to these general principles, the following six issues matter, which are particularly relevant for a protracted global economic crisis.

First, fiscal policy is more effective if accommodated by monetary policy. Model simulations show that when nominal interest rates are kept unchanged for one year, and real interest rates are allowed to fall, fiscal multipliers tend to be even higher. In the QUEST model the multiplier for a government consumption shock rises to 1.4 (from 1.0) and for a labour tax reduction to 0.7 (from 0.3) (Roeger and in 't Veld (2009).

Second, when the effectiveness of monetary policy is limited due to a high share of credit-constrained households, such as during the current crisis, fiscal policy becomes particularly powerful. Using the European Commission's QUEST model, Roeger and in't Veld (2009) show that a 1% of GDP global

([124]) Based on data by Eschenbach and Schuknecht (2002); see Table III.4.2.

([125]) See for example European Commission (2008c).

([126]) For a recent survey on multiplier estimates, see OECD (2009).

fiscal impulse through a reduction in labour taxes for one year raises GDP in the EU by 0.5% in a model with credit-constrained households compared to 0.3% in a model without (and also raises the multiplier for a government consumption shock slightly from 0.94 to 0.99).

Third, fiscal policy stimulus is less effective in open economies as a large share of demand falls on imported goods. This is the reason why in the current crisis the European Commission called for a coordinated approach.

Fourth, in the current crisis the uncertainty about which fiscal policy measures are most promising is higher than usual. This goes beyond the even under "normal times" broad range and ranking of multipliers. First attempts to model some of the current crisis aspects, such as the higher share of credit-constrained households, tend to confirm however the preference for targeted expenditure-based over revenue-based stimulus measures (Roeger and in't Veld, 2009). Nevertheless, others assess the uncertainty as significant and therefore propose the use of a wide range of stimulus measures as a way of risk diversification (IMF, 2009). This may call for the use of a wide range of stimulus measures as a way of risk diversification (IMF, 2009). However, with such an approach one clearly faces a potential trade-off between "wasting public resources" by not choosing the most effective measure and not doing enough to stimulate the economy resulting in negative feedback loops.

Fifth, the size of fiscal multipliers not only varies by instrument but also with the degree of market rigidities, with lower rigidities implying lower multipliers (e.g., Galí et al., 2007; Furlanetto and Seneca, 2009).

Last but not least, to achieve an impact with fiscal stimulus measures countries need to have sufficiently large fiscal space as measured in medium-term market access for public financing. ([127]) When fiscal space is missing however, also fiscal consolidation need not necessarily be contractionary as it contributes to restoring confidence and ensuring long-term sustainability. ([128]) Event and regression analysis by the IMF (2008a) indicates that in countries with high debt levels fiscal stimulus in downturns has had negative impacts on output reflecting the concerns about sustainability. A recent study by the IMF (2009b) indicates that "fiscal policy stimulus in economies that have low levels of public debt has a higher impact on the strength of the recovery relative to economies that have higher levels of public debt." The estimated threshold debt level is about 60% of GDP but with a very wide uncertainty margin. ([129])

([127]) Assessing whether market access for public financing may be endangered can be based on a range of factors beyond sovereign bond spreads. These include the public debt-to-GDP ratio, indicators on long-term debt sustainability contingent liabilities in the financial sector, potential medium-term tax shortfalls, the current account balance and non-discretionary spending.

([128]) That fiscal consolidation can be expansionary was first argued by Giavazzi and Pagano (1990) and evidenced for the cases of Denmark (1983-86) and Ireland (1987-89). Similarly, the authors argued that expansionary fiscal policy during Sweden's financial crises had non-Keynesian effects. More work has since been conducted (see for a review Hemming et al., 2002) with unclear findings on whether the size, the composition or both matter for fiscal consolidations to be expansionary. Fiscal space, however, seems to consistently matter. Despite many caveats raised by critiques of these studies, such as selection bias of countries analysed, endogeneity problems (rapid growth recovery may have brought about the fiscal consolidation rather than vice versa) and the lack of consistently accounting for exchange rate effects, experiences seems to suggest that under certain circumstances fiscal tightening need not always be contractionary.

([129]) The 90% confidence interval around the public debt-to-GDP ratio, when the impact of fiscal policy could worsen economic recovery, ranges from about 15-130% of GDP.

6. THE CURRENT CRISIS, POLICY RESPONSES AND FISCAL IMPLICATIONS FOR EU MEMBER STATES

What can be learnt from the past from today's crisis for EU Member States' potential fiscal costs? The first part of this section summarises the policy responses in the EU, including the banking resolution measures and fiscal stimulus packages. The second part compares the characteristics of today's crisis with those of the past, discusses whether and which policy lessons from the past could be transferred to today's situation and provides a preliminary outlook on the risks for public finances in the EU.

6.1. WHAT HAVE SO FAR BEEN THE POLICY RESPONSES BY EU MEMBER STATES?

6.1.1. Measures to stabilise the financial system

In October 2008, the EU heads of states and governments agreed to implement national rescue packages for the EU banking sector, which aimed at safeguarding financial stability, restoring the normal functioning of wholesale credit markets and underpinning the supply of credit to the real economy. They agreed to implement a co-ordinated rescue plan for the EU banking sector, comprising a set of broadly similar but separate national plans. While the national plans are consistent in terms of their menu of main components (i.e., measures relating to recapitalisation, asset exchanges/purchases and lending guarantees), the more detailed design and implementation of national plans was left to individual Member States. For example, features of the rescue plans can vary along the following dimensions: (i) coverage of the schemes both in terms of financial instruments/markets and institutions considered, (ii) eligibility criteria for both the financial instruments/markets and institutions to access the schemes, (iii) mechanism for the implementation of the scheme; e.g. creation of a special vehicle, form of the capital injection etc, and (iv) pricing aspects, conditionality and exit strategy.

State guarantees and liquidity support were the most widespread measures in the first phase. In addition, EU Member States have announced increases in the minimum level of deposit guarantees (Deposit Guarantee Schemes). Quickly, EU governments moved into capital injection operations. Beginning 2009, and in view of a slowdown in credit to the real economy, asset relief interventions have been seen as an additional component to the existing rescue packages announced by EU Member States. Indeed, by removing the high uncertainty related to asset valuations through direct relief measures, it is expected that confidence in the banking sector can be restored and normal bank lending to the real economy will resume.

As of mid-May 2009, 23 schemes have been approved: eleven guarantee schemes, five recapitalisation schemes, five schemes combining several measures and one fund for the acquisition of financial assets and one liquidity scheme (see Table III.6.1). Finland, Ireland, Latvia and the Netherlands have notified to the Commission guarantee schemes only while France, Denmark, Italy, Portugal and Sweden notified guarantee schemes in the first place and shortly thereafter also recapitalisation schemes. Slovenia added a liquidity support scheme as a complement of its guarantee. Another group of Member States which includes Austria, Germany, Hungary, Greece, and the United Kingdom opted for designing schemes combining several measures from the start (guarantee, recapitalization, other forms of equity interventions, etc). Finally, Spain notified first a fund for the acquisition of financial assets. In addition to the general schemes, several Member States have adopted ad hoc individual interventions in favour of certain financial institutions.

More recently, Member States have announced impaired asset relief measures. Belgium, the Netherlands, France and Denmark have taken measures on an ad hoc basis. The United Kingdom, Ireland and Germany have announced a national scheme although their specific design varies across countries.

Since the beginning of May, the Commission also started the process of extending existing schemes (after the first six month period of approval).

In aggregate figures, about EUR 310 billion has been committed (as approved by the Commission)

for re-capitalisation of banks. Of this amount, about EUR 170 billion has been injected. This amounts to about 2.6% and 1.5% of EU GDP respectively. More than EUR 2,900 billion has been committed to guarantees on bank borrowing, of which about EUR 920 billion is reported as having been allocated. ([130]) This amounts to about 24.7% and 7.8% of EU GDP respectively (Table III.6.1).

These EU-wide figures conceal considerable differences among Member States. These differences reflect a range of factors, including (a) the relative size of banking sectors, (b) the relative reliance of banks on wholesale funding, (c) policy preferences and (d) differences in timing of implementation.

The role of the European Commission during the financial crisis has not only been to support financial stability by giving legal certainty to the measures taken by EU Member States in rapid circumstances. It has also been to contribute to maintaining a level playing field and ensure that national measures would not simply export problems to other Member States. The Commission has adopted three major guidance documents on measures taken in response to the financial crisis: Banking Communication of 13 October 2008, Recapitalisation Communication of 5 December 2008 and the Communication on the treatment of impaired assets of 25 February 2009. These Communications explain how stat aid rules will be applied in the exceptional circumstances of the current crisis.

As of mid-May 2009, the assessment of the effectiveness of the financial support measures against their three main objectives, i.e. to safeguard stability in the banking sector, to restore the normal functioning of wholesale credit markets and to underpin lending to the real economy, is not straightforward. Many factors are at play in the evolution of the EU financial sector, making it difficult to isolate the impact of the measures from other factors. Moreover, the implementation of the measures in many Member States has been spread over time. Nevertheless, a first tentative assessment of the effectiveness of the support measures would indicate that the measures have averted a meltdown in the EU banking sector. Overall, the situation in financial markets has eased somewhat in the first quarter of 2009. There are encouraging signs of improvement in interbank, money and corporate bond market developments, although the high level of risk premiums in many financial markets cautions about the operating environment of the financial institutions. The latter is likely to remain challenging, in particular in respect of credit losses linked to the loan portfolio of the banks due to the negative growth development in 2008/09.

([130]) Figures on guarantees effectively granted are very provisional because of a lack of reporting by Member States.

Table III.6.1: **EU public interventions in the banking sector as of end-March 2009 (in % of GDP) 1/**

	Capital injections		Guarantees on bank liabilities		Relief of impaired asset		Liquidity and bank funding support		Total for all approved measures	Total effective for all measures	Desposit guarantee scheme (in € unless otherwise indicated)
	Total approved measures	Effective capital injections	Total approved measures	Guarantees granted	Total approved measures	Effective asset relief	Total approved measures	Effective liquidity interventions			
Austria	5.0	1.7	27.3	5.1	0.4	0.4	27.3	1.5	60.1	8.7	100%
Belgium	4.2	5.7	70.8	16.3	5.7	5.0	NA	NR	74.6	35.3	100 000
Bulgaria	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	50 000
Cyprus	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100 000
Czech Republic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	50 000
Denmark	6.1	0.3	253.0	NR	0.0	0.0	NA	NR	243.8	0.5	100%
Estonia	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	50 000
Finland	0.0	0.0	27.7	0.0	0.0	0.0	0.0	0.0	27.7	0.0	50 000
France	1.2	0.8	16.6	3.1	2.3	0.3	0.0	0.0	20.2	4.2	70 000
Germany	4.2	1.6	18.6	7.3	3.6	0.4	0.0	NR	26.4	6.3	100%
Greece	2.0	0.0	6.1	0.4	0.0	0.0	3.3	1.7	11.4	2.2	100%
Hungary	1.1	0.1	5.9	0.0	0.0	0.0	0.0	0.0	7.0	0.1	100%
Ireland	5.1	2.1	225.2	225.2	0.0	0.0	0.0	0.0	230.3	227.3	100%
Italy	1.3	0.0	NA	0.0	0.0	0.0	0.0	0.0	1.2	0.0	ca. 103 000
Latvia	1.4	0.0	10.9	2.8	0.0	0.0	10.9	6.1	23.1	8.9	50 000
Lithuania	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100 000
Luxembourg	6.9	7.9	12.4	NR	0.0	0.0	0.0	0.0	19.3	18.5	100 000
Malta	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100 000
The Netherlands	7.9	7.9	34.3	5.7	0.0	4.9	0.0	5.8	42.2	24.4	100 000
Poland	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	50 000
Portugal	2.4	0.0	12.5	3.0	0.0	0.0	0.0	0.0	14.9	3.0	100 000
Romania	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	50 000
Slovakia	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100%
Slovenia	0.0	0.0	32.8	0.0	0.0	0.0	0.0	0.0	32.8	0.0	100%
Spain	0.0	0.0	9.3	2.8	0.0	0.0	2.8	1.8	12.1	4.6	100 000
Sweden	1.6	0.2	48.5	8.8	0.0	0.0	0.1	0.0	50.2	8.9	50 000
United-Kingdom	3.5	2.6	21.7	9.5	0.0	0.0	25.1	18.7	50.3	30.8	ca. 57 000
Total EU	2.6	1.5	24.7	7.8	12.0	0.5	4.3	3.0	43.6	12.8	
Total euro area	2.6	1.4	20.6	8.3	12.0	0.7	1.3	0.7	36.5	11.1	

Notes: NA - Not available indicates that the amount is not available in the state aid decision.
NR - Not reported indicates that the amount was not reported by the Member State in its reply to the EFC questionnaire.
1/ Data, as of 8 May 2009, are provisional. Ratios are based on projected 2009 GDP figures from the Commission services' spring 2009 forecast.
Source: Commission services.

6.1.2. Measures to foster the economic recovery

By end-April 2009, EU fiscal governments had adopted fiscal stimulus packages amounting to 1.8% for 2009 and 2010. ([131]) They are part of the European Economic Recovery Plan (EERP) endorsed in December 2008 by the European Council (see for more details Part I.1). The 1.8% of GDP measures have been estimated as a bottom-up calculation of announced discretionary measures with a budgetary impact (Table III.6.2). They are relatively evenly split up between revenue and expenditure measures. ([132]) Across Member States, there are some who have not resorted at all to stimulus packages given their limited fiscal space and market pressures, while a few others plan to implement stimulus measures amounting to more than 3% of GDP (see for more details Part I.1 of this report).

Table III.6.2: **Fiscal stimulus measures in the EU (2009-10) (% of GDP)**

		EU-27	Euro area
Total	2009	1.1	1.1
	2010	0.7	0.8
Revenue	2009	0.6	0.5
	2010	0.4	0.5
Expenditure	2009	0.5	0.5
	2010	0.3	0.3
Public investment	2009	0.3	0.3
	2010	0.1	0.0

Notes: 1/ Figures for 2010 include permanent measures taking effect in 2009 plus measures taking effect in 2010.
2/ Weighted country averages.
Source: Commission services.

While the policy packages broadly follow the three "Ts" principles, in some areas they could have been strengthened. As regards the timeliness, there were initially concerns that under the projected growth path the impact could take effect relatively late in the cycle. But with the materialisation of the downward risks to the projections this is now no

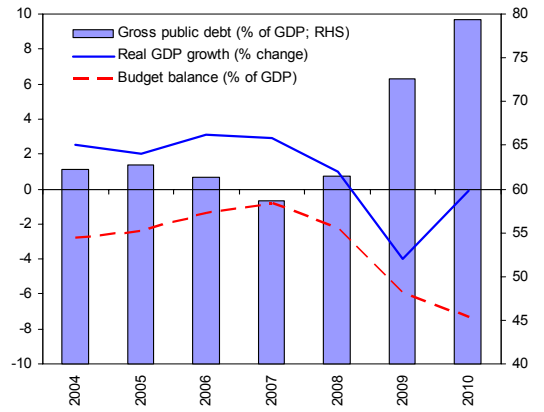
([131]) The estimates for 2010 include permanent measures taking effect in 2009 plus the net effect of measures taking effect in 2010.

([132]) Extra-budgetary measures with an immediate impact on debt amount to about 0.3% of GDP for 2009-10. This includes, for example capital injections into state-owned banks for the purpose of increasing the lending to the private sector (though not part of bank rehabilitation measures). Guarantees to the private sector, other than the financial sector, are estimated at 0.2% for the same period. They impact the budget balance and debt only when they are called.

longer an issue. As regards the targets of measures, to a large extent in EU Member States they have been geared toward mitigating factors that are constraining private consumption and investment through decreases in income and wealth, credit constraints and uncertainty. As regards the temporariness, it is assured for the majority of measures (e.g., those regarding higher public investment and revenue measures for which the date of policy reversal has been announced). However, there remains a risk that especially some of the revenue measures, accounting for 1% of GDP, become entrenched.

In addition to the discretionary measures, automatic stabilisers are projected to support the economy by another 3.2% of GDP. This would worsen the general government balance in the EU and the euro area by about 5% of GDP between 2010 and 2008 (Table III.6.3 and Graph III.6.1), based on a projected decline in real GDP by 4% in 2009 and a stagnation of -0.1% in 2010 (European Commission, spring forecast 2009). Thus, roughly one third of the deterioration in the fiscal balance is due to discretionary measures and the rest largely due to automatic stabilisers (over the short term interest payments are expected to increase only slightly for the euro area). In addition to budgetary measures, EU governments have taken a number of non-budgetary measures (not directly targeted at the financial sector) with the aim to support the economy. They include guarantees for the private sector to facilitate access to bank loans (which may have eventual budgetary consequences, however), accelerated reimbursement of VAT and measures to support export companies.

Graph III.6.1: **EU Member States – Key fiscal indicators**



Source: Commission services' spring forecast, May 2009.

Table III.6.3: **EU Member States – Key fiscal indicators**

	2007	2008	2009	2010	Change 2007-2010
	(In % of GDP unless indicated otherwise)				
General government balance	-0.8	-2.3	-6.0	-7.3	-6.5
Public expenditure	45.7	46.8	50.1	51.1	5.4
Total revenue	44.9	44.5	44.1	43.8	-1.1
Primary government balance	1.9	0.4	-3.2	-4.3	-6.2
Cyclically adjusted primary balance	0.6	-0.5	-1.8	-2.5	-3.1
Gross public debt	58.7	61.5	72.6	79.4	20.7
Memorandum items:					
Real GDP growth (% change)	2.9	1.0	-4.0	-0.1	-3.0
Output gap (% of potentail output)	2.6	2.0	-2.9	-3.7	-6.3

Source: Commission services' spring forecast, May 2009.

6.2. KEY CHARACTERISTICS OF THE CURRENT CRISIS: HOW DOES IT COMPARE TO PAST CRISES?

Some similarities of today's crisis with earlier financial crises are notable. Among economists a consensus seems to emerge on the many parallels including the root causes of the crisis. ([133]) These include the build-up of a bubble in asset prices (housing and equity) fuelled by an insufficiently managed financial liberalisation. While financial liberalisation took a different form in today's crisis than in the past, the impacts were very similar. In contrast to capital account liberalisation or loosening of banking regulations, in the run-up to today's crisis financial innovation occurred through the complex bundling and spreading of debt. But

([133]) See, for example, Reinhart and Rogoff (2008 a,b,c), Bordo (2008) and International Monetary Fund (2009b).

both types of financial liberalisation resulted in a build-up of excessive risk.

However, the global nature and severity of today's crisis is unprecedented. Never have financial markets been so closely integrated at the outbreak of a crisis and, except for the Great Depression, the shockwave has never emanated from the largest world economy. By end-2008, more than two thirds of the world's largest economies (measured in per cent of world GDP) were experiencing a systemic banking crisis, as reflected in the issuance of blanket guarantees, the injection of public capital into their banking systems and IMF-supported programs (see Section III.6.1 for more details on the rehabilitation measures taken in the EU Member States). At the same time, the economic outlook for the advanced economies has been the bleakest since World War II (Graph III.6.2). ([134])

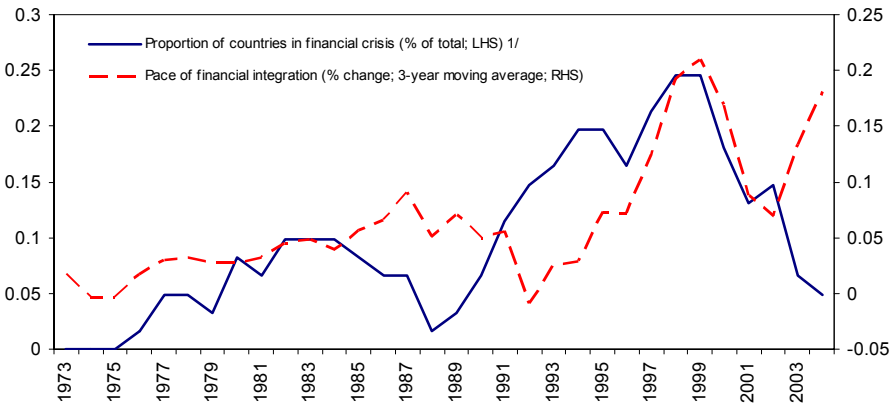
But past crises experience does not necessarily link globalisation with more costly financial crises. On the one hand, closer financial and real integration appears to be associated with a greater prevalence of financial crises (Box III.6.1). There is an increasing literature on the potential spillover effects of banking and equity market turmoil, in a world of more closely integrated good, services and capital markets (e.g., Kaminsky and Reinhart, 2000; van Rijckeghem and Weder, 2001). In fact, with tighter global economic and financial integration, financial crises have become more frequent (e.g., Reinhart and Rogoff, 2008a). This has also implied higher fiscal losses for the world as a whole. On the other hand, however, the fiscal costs for individual countries to rehabilitate their banking systems do not seem to have significantly increased with greater globalisation (Box III.6.1).

([134]) While some parallels to the Great Depression can be drawn, the current crisis distinguishes itself from that period particularly as regards the monetary and fiscal policy stimulus and the better macroeconomic starting positions (IMF, 2009b).

Box III.6.1: Financial crises in the global economy

One major striking aspect of the current financial crisis is its global and fast-spreading nature. Contagion has already been experienced in the past (often coupled with currency crises) and was found to be linked to more closely integrated goods, services and capital markets (e.g. Kaminsky and Reinhart, 2000 and van Rijckeghem and Weder, 2001). However, the diffusion of the current financial crisis to countries that initially looked relatively immune from the US subprime mortgage market failures has taken place at an unprecedented pace (e.g. Frank et al., 2008). This may partly be explained by the large degree of financial integration. In fact, with tighter global economic and financial integration, the spreading of financial crises has become more prevalent. Reinhart and Rogoff (2008a) provide descriptive evidence on this, by plotting a measure of the frequency of financial crises against a measure of international capital flows since the 19th century and observe that the two variables are highly correlated. However, part of the apparent correlation is driven by the two world wars during which capital flows collapsed and financial crises were not accounted for. In order to check whether the relationship between globalisation and financial crises holds independently of major shocks through wars, it may be more appropriate to consider a shorter time span. This is done in Graph 1 below, which suggests that the pace of economic and financial integration and the share of countries in crisis have been correlated over the period 1973-2004. The measure of global financial integration makes use of the data provided by Milesi-Ferretti and Lane (2007a) and combines information on capital, FDI and trade flows across countries.

Graph 1: Number of countries in financial crisis and pace of global financial integration (1973-2004)



Notes: 1/ Based on the sample of countries used for the analysis in this paper. GDP-weighted averages.
2/ Financial integration is measured as the ratio of total external financial assets and liabilities to GDP (data are from Milesi-Ferretti and Lane (2007) until 2004 and comprise foreign direct investment, portfolio equity investment, official reserves and external debt). The pace of global financial integration is measured as the three-year moving average of the annual percent change of this indicator.
Sources: Calculations based on Milesi-Ferretti and Lane (2007) and Laeven and Valencia (2008).

Has globalisation also been associated with more costly banking crises in terms of the fiscal outlays for rehabilitating the banking sector? ([1]) This question can be considered from two angles. On the one hand, a greater share of countries in financial crisis could raise the fiscal cost for the world economy. On the other hand, the question arises as to whether global spillovers have led to higher fiscal costs for countries considered individually. A simple bi-variate analysis indicates while the overall costs for the global economy have increased as crises have become more frequent (not shown here), the average net direct fiscal

([1]) Indeed, some authors have argued that the growing integration of the world economy may lead governments to increase their size in order to hedge against global systemic shocks to protect their citizens against the adverse consequences of these shocks (see in particular Rodrik, 1998 and Alesina and Spolaore, 2003).

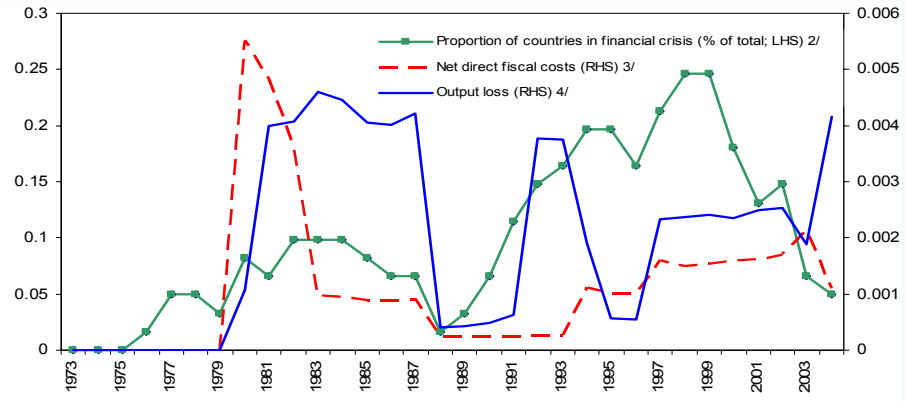
(Continued on the next page)

Box (continued)

costs for each individual country have not been closely linked to the pace of financial integration and the number of crises (Graph 2). The same relation holds broadly for output costs.

The evidence provided here suggest that: (i) increased globalisation has gone hand in hand with a greater prevalence of systemic financial crises, but (ii) this was not associated with significantly higher output cost or fiscal losses experienced on average by a country in crisis.

Graph 2: Number of countries in financial crisis and net direct fiscal costs and output losses (1973-2004)

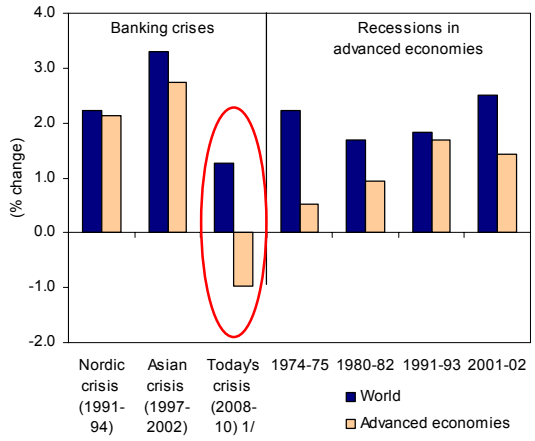


Notes: 1/ Based on the sample of countries used for the analysis in this paper. GDP-weighted averages.
2/ Based on data are from Milesi-Ferretti and Lane (2007). See footnote 2/ in Graph 1 in this box.
3/ Average GDP-weighted net direct fiscal costs in percent of GDP. Net direct fiscal costs are from Laeven and Valencia. See Appendix Table 1 for definition and data.
4/ Average GDP-weighted output loss. Output loss data are from Laeven and Valencia. See Appendix Table 1 for definition and data.
Sources: Calculations based on Milesi-Ferretti and Lane (2007) and Laeven and Valencia (2008).

The global nature of the crisis is limiting today's response options compared to those available in other crises episodes. The limitations relate to the real and the financial sector. An export-led recovery is compromised, at least in the short run, as the world economy is in a slump, unlike in previous local and regional crises episodes (Graph III.6.2). Related to that, the exchange rate is generally not available as an adjustment tool (and is excluded by definition within the euro area). This could, on the one hand, complicate the recovery process which in previous crises has frequently been helped by a boost of external competitiveness through a real depreciation or a strong world economy (Graph III.6.3 and Table III.6.4). On the other hand, the denomination of public debt in national currency for euro-area countries acts as a stabilising factor compared to countries indebted to a large extent in foreign currency which entails the risk of debt explosion in case of sharp depreciation of national currencies.

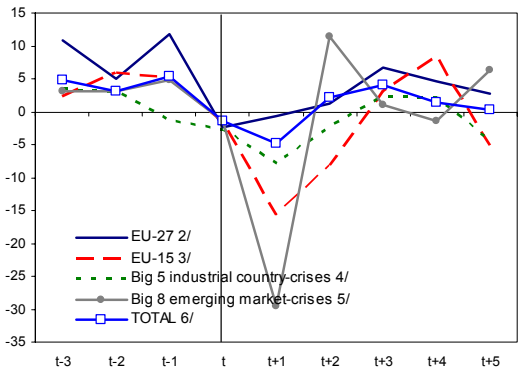
The international dimension of the crisis also reduces the potential involvement of private foreign investors in contributing to the rehabilitation of the banking system. In the past, in more than half of financial crises impaired assets were sold to foreigners (see Annex Table III.2). During the current crisis, initially sovereign wealth funds had taken on this role with a first round of capital injections but foreign investment has petered out as the crisis has spread around the world. Both of these limitations in policy responses flag that today's financial crisis could imply a bigger burden on public finances, directly through the bank restructuring efforts and indirectly through the economic slump and its impact on the budget.

Graph III.6.2: **World real GDP growth during major banking crises**



Notes: 1/ Projections IMF WEO Update, March 2009.
Source: IMF International Financial Statistics.

Graph III.6.3: **Real effective exchange rate during banking crises (% change)**



Notes: 1/ Based on 49 crises episodes as shown in Annex Table III.1. Unweighted country averages. t = start of the crisis.
2/ Includes crisis episodes in Bulgaria, Czech Republic, Finland, Hungary, Latvia, Lithuania, Poland, Romania, Slovak Republic, Slovenia, and Sweden. For new Member States data from 1991.
3/ Includes crises episodes in Finland and Sweden.
4/ Includes crisis episodes in Finland, Sweden, Norway and Japan. No data for Spain available.
5/ Includes Argentina (2001), Indonesia, Korea, Malaysia, Mexico (1994), Philippines, Thailand and Turkey (2000).
Source: Calculations based on IMF International Financial Statistics.

6.3. HOW MUCH CAN PAST CRISES REALLY TELL US ABOUT POLICY RESPONSES AND IMPLICATIONS ON PUBLIC FINANCES?

While transferring experiences with past crises to today's developments in the EU is far from evident, it is however not impossible to draw some lessons. In particular, as regards the potential fiscal outlays for rehabilitating the banking system some transfers from past experiences can be made. The global nature of the crisis may impinge on these considerations but should not render them invalid. On the other hand, it is much more difficult to draw lessons on the indirect fiscal costs of the current crisis and the effectiveness of fiscal stimulus measures. Both arguments are developed below.

6.3.1. Lessons for direct fiscal costs in rehabilitating the banking system

Rehabilitating the EU's banking system could require substantial public outlays. So far, public resources of about 44% of GDP have been approved by EU governments for the support of banking systems of which 13% of GDP have been put in use (Table III.6.1). In a benign scenario (shown in Table III.6.5) much of those outlays may either be recovered or not even materialise as more than half of them are guarantees. However, in a more adverse scenario net direct fiscal costs could easily add up to about 16½% of GDP. This higher cost estimate is derived by assuming that capital injections would be doubled from the currently approved amount of 2.6% of GDP, which appears rather small in comparison to the estimated impaired assets of about EUR 0.9 trillion (according to the IMF, 2009c) in Europe. ([135]) Moreover, the scenario calculation uses the already approved amounts for other public bank interventions (including guarantees) and applies to this the lower end of a range of recovery rates in line with past crises (see second column in Table III.6.5). ([136]) This upper bound estimate for net direct fiscal costs (16½% of GDP) is somewhat higher than the average bank rescue costs from past systemic crises (13% of GDP) and those in EU and OECD countries (10% of GDP). ([137])

([135]) The IMF (2009c) estimated capital requirements for the euro area and Eastern Europe to range between about 4% and 7% of GDP at end-2008.

([136]) There is less evidence to assess potential loss rates on central bank liquidity support and government guarantees. Thus, the same rates are assumed here as used in IMF scenario calculations (International Monetary Fund, 2009).

([137]) In individual EU Member States these costs may be a multiple of the EU average. See Table III.6.1 for the country-specific commitments as of end-March 2009.

Table III.6.4: **External stimulus factors to recover from the crisis 1/**

	Real effective exchange rate (% change)		Export-to-GDP ratio 6/ (percentage point change)		Real export growth 6/ (% change)	
	3-year average change before crisis (t-3 to t-1)	3-year average change after crisis (t to t+2)	3-year average change before crisis (t-3 to t-1)	3-year average change after crisis (t to t+2)	3-year average change before crisis (t-3 to t-1)	3-year average change after crisis (t to t+2)
EU-27 2/	9.2	-0.6	-2.5	0.4	5.6	7.3
EU-15 3/	4.5	-8.5	-1.1	2.9	1.9	7.7
OECD	3.7	-1.1	0.1	1.5	8.3	10.1
OECD and EU	5.9	-1.3	-1.3	0.9	7.9	8.9
Other than EU and OECD	3.6	-1.2	0.4	1.4	8.2	6.1
Big 5 industrial country-crises 4/	1.8	-4.3	0.2	1.4	4.0	6.4
Big 8 emerging market-crises 5/	3.7	-6.5	0.7	4.3	10.8	7.6
TOTAL	**4.4**	**-1.4**	**-0.3**	**1.4**	**7.9**	**8.0**

Notes: 1/ Based on 49 crises episodes as shown in Annex Table III.1. Unweighted country averages. t = start of the crisis.
2/ Includes crisis episodes in Bulgaria, Czech Republic, Finland, Hungary, Latvia, Lithuania, Poland, Romania, Slovak Republic, Slovenia, and Sweden. For new Member States data from 1991.
3/ Includes crises episodes in Finland and Sweden. No data for Spain available.
4/ Includes crisis episodes in Finland, Sweden, Norway and Japan. No data for Spain available.
5/ Includes Argentina (2001), Indonesia, Korea, Malaysia, Mexico (1994), Philippines, Thailand and Turkey (2000).
Source: Calculations based on IMF International Financial Statistics.

Several factors may contribute to the upper bound, or even higher direct fiscal costs, materialising. This includes first the much larger sizes of banking systems in the EU today than in past crises and consequently the larger amount of impaired assets and recapitalisation needs. For example, banking system assets in the three Nordic countries before the 1991 crisis amounted to about 90% of GDP, while in the euro area in 2008 the ratio was more than triple that at about 340% of GDP, to which also a much larger share of off-balance sheet items needs to be added.

Table III.6.5: **Risk scenarios for direct fiscal costs 2/**

		(% of GDP) Based on effective measures	Based on approved measures
A	Recapitalisation		
A.1	As of 8 May 2009	1.5%	2.6%
A.1.1	Loss rate (80%)	1.2%	2.1%
A.2	Assuming a doubling of recapitalisation needs	3.0%	5.2%
A.2.1	Loss rate (80%)	2.4%	4.2%
B	Liquidity and bank funding support	3.0%	4.3%
B.1	Loss rate (10%)	0.3%	0.4%
B.2	Loss rate (30%)	0.9%	1.3%
C	Govt. guarantees on bank liabilities and relief of impaired assets 1/	8.3%	36.7%
C.1	Loss rate (15%)	1.2%	5.5%
C.2	Loss rate (30%)	2.5%	11.0%
	TOTAL net fiscal costs		
	Lower bound (=A.1.1+B.1+C.1)	**2.7%**	**8.0%**
	Higher bound (=A.2.1+B.2+C.2)	**5.8%**	**16.5%**

Notes: 1/ Includes blanket guarantees (AT, ES, IE, NL) but not the potential shortfalls of deposit insurance schemes nor government guarantees where amounts have not been specified (e.g. BG, IT, PL, UK). See for more details Table III.6.1.
Source: Commission services.

Second, recovery values of today's impaired assets may be much lower than of those in the past. This may be due to the complicated nature and high leverage of many financial assets, which make them difficult to manage, unwind and recover underlying values. ([138]) First experiences already indicate that recovery values of certain financial instruments have been rather. Moreover, a protracted slowdown of the economy, compared to many V-shaped output developments in earlier crises, is a risk factor to achieving higher recovery values. Japan may be a useful example in that respect where most of the 50% recovery rate was achieved only from 2002 onwards, i.e. five years after what is considered the starting date of its systemic crisis and more than a decade after the start of the financial sector problems. ([139]) Also, the lesser availability of foreign and more generally private investors, given the global nature of the crisis, may suppress recovery values.

And finally, direct fiscal costs may be substantial since some of the weaknesses risk to be repeated today. This includes in particular protracting the resolution of the banking system through regulatory forbearance, insufficient recapitalisations, off-loading of impaired assets

([138]) See for example Coval et al. (2009) who provide an illustration that structured finance products have a higher exposure to systemic risks than traditional corporate securities and that their ratings are extremely fragile to modest imprecision in evaluating underlying risks.

([139]) As indicated in Annex Table III.1, Laeven and Valencia (2008) estimate the net direct fiscal costs at 13.9% of GDP and a recovery ratio of practically zero until end 2001. However, when considering data for Japan until 2008, the recovery ratio is estimated at 52% (4.7% of GDP recovery and gross fiscal outlays of 9.1% of GDP) using most recently available information (see Spilimbergo et al., 2008).

and liquidation of banks as needed. While even in the Nordic "success stories" of handling banking crises such comprehensive approaches were put into place only over one year into the crisis (though shortly after announcing blanket guarantees), time is becoming of the essence for tackling outstanding banking sector issues in the EU and on a global nature.

On the other hand, a few aspects today also bode well for containing direct fiscal costs when compared to previous crisis. These cost limiting factors include the generally stronger legal and judicial systems, greater transparency and uniform applications of national bank resolution policies. The lack of these factors contributed to higher costs of bank rescue operations in many past crises episodes in transition and emerging market economies. It should be noted, however, that significant differences in institutional strengths remain across EU Member States which could have a bearing on recovery rates. On balance, the risks for the higher bound estimates of direct fiscal costs to materialise are significant.

Thus, what is needed to resolve the current crisis and eventually contain the direct fiscal costs is a commitment to a resolute, swift and coherent strategy for restoring the EU banking sector to viability in the near term, while allowing the process of adjustment to extend over a sufficiently long, but clearly specified, period of years. The strategy needs to include revaluing balance sheets, recognising the large losses amassed and cleaning up the financial sector balance sheets through capital injections and/or resolution of impaired assets. Whether asset management companies can facilitate this process would need to assessed on a country-by-country basis. The resolution process may require high upfront costs for the public but a drawn-out process is likely to stalk the economy and be even costlier in terms of output costs and implications for the public sector. Moreover swift action is needed also from a political perspective to sustain popular consent to public intervention in the banking sector. Popular disaffection with public support for the banks will inevitably find a counterpart in demands for tighter and tighter regulation of the sector and could result in the worst of all worlds – a structurally weak banking sector relying of public support on a durable basis and unable to return to profitability because of an excessively heavy regulatory burden.

6.3.2. Lessons for indirect fiscal costs from banking crises

During past crises, public finances deteriorated also for reasons independent of direct fiscal costs. Statistical analysis indicates that government balances deteriorated on average by 2% of GDP for the length of the crisis and public debt-to-GDP ratios surged by about 20% of GDP. This increase in debt ratios following crises episodes was only about one third higher than the cumulative direct fiscal cost of the crisis, which indicates that in some cases the debt build-up from budget deficits was substantially reduced via inflation. Nevertheless, overall, as a result of the operation of automatic stabilisers and, to a lesser extent, discretionary expansionary measures, public debt increased over and above that associated with measures to contain and resolve banking crises. The econometric analysis carried out in this report indicates that most of the increase in debt following crisis periods can be attributed to the effect of the crisis itself, while only a minor part would have taken place irrespective of the emergence of problems in the financial sector.

Evidence from past crises could to some extent provide indications for the prospects of EU public finances in the current juncture. The current path projected for EU budget balances (see Table III.6.3) is very similar to that observed on average during past crises periods. The projected fiscal deficits of about 6-6½% of GDP for the euro area and EU-27 during 2009-10, combined with the debt-creating bank rescue measures already undertaken, would raise the public debt-to-GDP ratio by 18 percentage points for the euro area and about 21 percentage points for the EU between end-2007 and end-2010. This would be similar to the average increases in earlier crises episodes. Deviating from these average developments, some EU Member States face deteriorations of public finances that are reminiscent to some of the most severe fiscal implications that systemic banking crises have had in the past. This includes Ireland, Latvia and the United Kingdom for whom jumps in public debt-to-GDP ratios of between 35-55 percentage points are projected over three years after the outbreak of the crisis. These examples indicate how quickly the costs of the current crisis have amassed in some Member States. Moreover, there are substantial upward risks for higher fiscal

costs if the economic recovery is more protracted than currently foreseen. ([140])

The global nature of today's crisis complicates the assessment on the role that fiscal policy can and should play. In the past, discretionary fiscal policy has typically played only a subordinated role in overcoming banking crises as most countries affected were small and open economies (except Japan) and benefitted from a sharp depreciation of their real effective exchange rates that facilitated the economies to adjust and recover. Discretionary fiscal expansion frequently aimed at supporting the most vulnerable in the economies through social policy measures. The above-mentioned principles for active fiscal policy during cyclical downturns or crises (timely, temporary, targeted (in particular toward credit/liquidity-constrained economic agents) and with sufficient fiscal space) continue to apply, but they should be modified and supplemented in view of the specific features of the current crisis. The "timely" criterion no longer simply refers to the appropriate intervention point in terms of the business cycle position but also as regards the situation of the financial system. On the one hand, particularly the Japanese experience has indicated that the effectiveness of fiscal stimulus measures can be impacted if the stability and health of the financial system has not yet been restored. Without that condition in place it would be difficult to stimulate private demand since uncertainties and constraints to loan provisions prevail. On the other hand, in light of the heightened risks for a more protracted economic slump and apparent difficulties in achieving political consensus on potentially expensive and interventions in the EU banking systems, a sharp divide in sequencing policy responses into bank restructuring measures first and economic recovery second is neither realistic nor desirable. Rather, economic stimulus measures need to go hand-in-hand with the bank resolution for which efforts need to be stepped up.

Three lessons can be drawn for EU Member States' fiscal support during the current crisis. They regard coordination, differentiation and the size of policy responses.

Coordination: The global dimension of today's crisis requires a global coordinated fiscal policy response to avoid negative spill-over effects and maximise the fiscal policy impact. Model simulations by the European Commission and the IMF clearly demonstrate that fiscal multipliers are significantly larger under coordinated action as leakages are contained. Using the QUEST model, Roeger and in't Veld (2008) show that the multipliers for the EU for a 1% of GDP increase in public consumption would increase from 1.2 in case of the EU acting alone to 1.4 under a global expansion. The IMF estimates the increase in multipliers to be even bigger (increasing from 1.5 to 2.4 for the euro area in case of a global stimulus with monetary accommodation). ([141]) The need for a coordinated policy response is reflected for the EU in the European Economic Recovery Programme; at a global level the G-20 heads of governments have committed themselves to put the announced packages quickly into action.

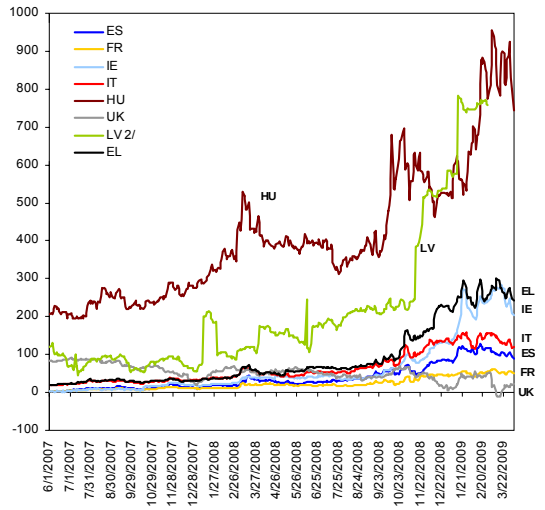
Differentiation: Despite the need for a global stimulus, the participation and contribution by individual EU Member States should be differentiated by their fiscal space and macroeconomic starting position. This is to avoid that active fiscal policies jeopardizes long-run sustainability of their public finances which is a corner stone of the Stability and Growth Pact. This need for differentiation is reflected in the EERP. As the financial and economic crisis has hit some EU Member States particularly hard and others need to tackle the crisis from unfavourable starting positions (including e.g., high public debt levels and/or large current account deficits), financial markets are requesting significantly higher risk premiums on sovereign bonds for some Member

([140]) For example, Ruscher and Wolf (2009) point to four risk factors for a prolonged recession: (i) the requirement for large balance sheet adjustments in the financial sector, (ii) the need for deleveraging in the non-financial private sector (households and corporates), (iii) a downward shift in potential output and increase in risk premiums and (iv) the need for adjusting global imbalances.

([141]) The simulations of the European Commission and the IMF are however not fully comparable, since the IMF estimate is the cumulative effect of an ex post deficit (i.e., after accounting for the growth impact from the stimulus) of 1% of GDP in the first year and 0.5% of GDP in the second year. The first-year multiplier alone from the 1% of GDP stimulus is about 1.3 for the euro area. Both simulations assume an accommodative monetary policy.

States (see Graph III.6.4). ([142]) Even though the overall level of interest rates has fallen substantially to before crisis levels, the increase in spreads can be very costly and counteract fiscal stimulus policies. This applies particularly to high-debt countries but low-debt countries can also be affected if the sovereign risk premiums are correlated with private sector risk premiums. Model simulation by the Commission services show that a 100 basis points increase in both (private and public) risk premiums lasting for two years (and then gradually fading out) would lower real GDP by 1.5%. Thus, Member States need to carefully manage their fiscal space.

Graph III.6.4: **Sovereign bond spreads of selected EU Member States 1/**



Notes: 1/ Spread over 10-year German government bonds (BUND).
2/ Data for Latvia are from Eurostat and refer to the EMU convergence criterion on bond yields.
Source: Bloomberg and Eurostat.

Size: The size of the needed fiscal stimulus depends very much on the above mentioned factors (uncertainties about the size of the economic downturn; coordination of measures; fiscal space; state of the banking sector; country-specific factors, such as the share of credit-constrained households and market rigidities markets). For the EU, the Commission services estimate that the 1.8% discretionary fiscal packages planned under the EERP for 2009-10 would lead to a growth stimulus of slightly less than 1% of GDP in 2009 and about ⅓% of GDP in 2010 (see European Commission, January 2009 Interim Forecast). Whether additional fiscal stimulus measures would have the same effect is uncertain. However, one can expect the effects not to be linear but rather assume that the marginal effectiveness of measures decreases in light of limited absorption capacities, in particular for public investment.

([142]) Empirical work surveyed and undertaken by the OECD (2009b) shows that sovereign bond spreads are largely driven by (i) the debt service ratio, encompassing the countries' ability to raise their taxes from a given volume of GDP, (ii) the fiscal track record, (iii) expected future deficits, and (iv) the degree of risk aversion.

7. CONCLUSIONS

Past financial crises have put considerable strains on public finances through several channels:

Direct fiscal costs from bank rescue measures were contained when supported by some policy factors. Overall direct fiscal outlays to rehabilitate the banking system averaged 13% of GDP in the past but was massive in some cases (over 50% of GDP in some emerging market economies). At the same time, recovery rates, i.e. the compensation for initial fiscal outlays over time, were rather small at on average 20%. Lower direct fiscal costs and higher recovery rates were achieved notably, taking into account of the severity of the crisis, when the bank resolution strategy was implemented swiftly, was transparent and received broad political support, supported by strong public institutions and legal frameworks, consistent in terms of fair and uniform treatment of market participants, and included a clear exit strategy. Apart from these broad principles the choices on how to intervene in financial institutions and deal with impaired assets has differed, reflecting country specificities, and with varying degrees of success. For example, the use of asset management companies with the aims to restructure and recover impaired assets as well as to dispose of publicly acquired assets by the public has been mixed. In particular, econometric evidence shows that strong legal and judicial frameworks have emerged as factors associated with higher recovery rates.

Debt increased following crises also for reasons non-related with measures to tackle the problems of the financial sectors. Government balances deteriorated on average by 2% of GDP resulting in deficits of 4% of GDP per annum during the crisis. This deterioration of fiscal positions contributed to the jump in public debt-to-GDP ratios by about 20% of GDP. This overall increase in nominal debt was above the amount attributable to direct fiscal costs. Econometric evidence shows that the largest part of this increase in debt can indeed be attributed to the financial crises, with only a small fraction taking place irrespective of the crisis outburst. The overall fiscal implications from financial crises were closely associated with the impact on the real economy. On average, financial crises have hit real economies hard. Output gaps declined by about 1% of potential GDP per annum during the crises. As a result, debt ratios increased substantially due to additional crisis-related budgetary outlays ensuing from the operation of automatic stabilisers. To some extent, increased discretionary fiscal stimulus to counter the economic downturns also added to the budgetary deterioration. However, the country case studies indicate that this was quite limited, since countries' fiscal space was frequently constrained due to rapidly weakening confidence in the public sector. In the few cases of relatively large expansionary fiscal activism, such as Sweden and Japan, there are many indications that the success of policies was rather limited. In the case of Sweden this was largely rooted in Ricardian consumers and in the case of Japan also in the protracted restructuring of the financial system and inefficiencies in the fiscal stimulus packages and their delivery. While most of the crisis costs occurred during the first two crisis years, the fiscal implications often proved difficult to reverse. Even eight years after the crises most countries had not yet reached their pre-crisis debt ratios.

The global nature of the current crisis provides some unprecedented challenges for public finances and has limited the policy response options. This includes the much larger sizes of banking systems in the EU today, than in past crises and consequently the larger size of impaired assets and recapitalisation needs. Recovery values of today's impaired assets may be much lower than in the past due the complicated nature and high leverage of many financial assets. Moreover, a quick export-led recovery of the real economy based on a sharp adjustment of the real exchange rate, a typical phenomenon of past crises, is not an option for the EU as a whole. Thus, a greater burden falls on fiscal and monetary policy support. And lastly, the lesser availability of foreign and more generally private investors, given the global nature of the crisis, may suppress recovery values.

How could the current crisis be tackled without excessively straining public finances in the EU? Even though today's crisis is unprecedented and the risks are high that it will have immense fiscal implications, one can still draw some lessons from past experiences:

A resolute and swift strategy is needed to resolve the banking system. After the crisis has been successfully contained through liquidity support and blanket guarantees, more needs to be done to

restore the health of the financial system. This resolution phase may require high upfront costs for the public but a drawn-out process is likely to stalk the economy and be even costlier in terms of output costs and implications for the public sector. Whether specific instruments, such as asset management companies, can facilitate this process would need to assessed on a country-by-country basis. Importantly, also a coordinated exit strategy needs to be prepared in the EU. This includes the timing for disposing publicly-acquired assets and lifting blanket guarantees with a view to ultimately withdrawing the role of the public sector and limit market distortions within Member States and the single market. Such a swift and coherent strategy is also needed against rising popular disaffection with public support for the banks that could find its counterpart in demands for an overregulation of the sector and could result in the worst of all worlds – a structurally weak banking sector relying on public support on a durable basis and unable to return to profitability because of an excessively heavy regulatory burden.

The effectiveness of fiscal support hinges on a number of factors in addition to the resolution strategy of the banking sector. Automatic stabilisers in the EU are sizable and letting them play fully can provide a significant contribution to buffering the economic impact of the crisis despite the fiscal implications. Discretionary measures are particularly effective if coordinated (within the EU and globally) and targeted to credit and liquidity-constrained households, in particular when monetary policy is getting less effective. In principle, support of public investment has not only short-term demand effects but can also strengthen the long-term growth options. However, limits in absorption capacities could render this instrument less effective.

The application of these broad principles for fiscal support of the economy needs to be differentiated across Member States, however, in particular with a view to maintaining long-term sustainability. Depending on the degree of fiscal space and macroeconomic imbalances, embarking on credible adjustment paths and regaining market confidence may need to take precedence. For the EU that applies to two groups of countries: those that started with relatively low debt levels but were exceptionally hard hit by the crisis and those that entered the crisis with already high public debt levels so that a slowdown in nominal GDP growth below nominal interest rates would ratchet up debt ratios. Countries across both groups face additional long-term pressures on their public finances through rising age-related spending.

As a consequence, EU Member States need to develop exit strategies from the fiscal crisis policy support provided now. This goes beyond the exit strategies from the public involvement in the banking sector and needs to focus on the consolidation of public finances once economic conditions are improving or, in the absence of fiscal space, already today. Strong fiscal frameworks, i.e. national fiscal rules and institutions, should play a useful role in putting the fiscal houses back in order after the crisis and ensuring long-term sustainability. They have been instrumental for the adjustment paths after the financial crises in Finland and Sweden and generally found to be associated with successful fiscal consolidations (see Part II.2.3 and e.g., European Commission, 2007; Larch and Turrini, 2008).

ANNEX III

MORE DETAILS ON FISCAL COSTS OF FINANCIAL CRISES

ANNEX III.1. OUTPUT COSTS OF FINANCIAL CRISIS

In the literature, two main methods to calculate output losses can be distinguished. The widespread IMF method (proposed in 1998) calculates output losses as the difference between trend *growth* before the crisis and actual GDP until four years after the crisis or until the time when annual output growth returned to its trend. The number of years and the method that underlie the pre-crisis trend calculations differ in the literature.[143] An alternative method sums up the differences in the *levels*, rather than growth rates, of actual GDP from its trend during the crisis (e.g., Hoggarth et al., 2001, Boyd et al., 2005 and Laeven and Valencia, 2008). The authors using the level method argue that the growth method underestimates the output losses because it does not recognise the reduction in the output level in the previous years.[144] The latest banking crisis database from Laeven and Valencia (2008) uses the level method. Since in the present study their data on fiscal costs and crisis resolution policies are used extensively, the study also resorts to their level estimates for output losses.

Even though it is difficult to fully replicate the level method figures from Laeven and Valencia, the below example illustrates broadly the differences to the growth method. The bottom right hand cells in Annex table AIII.1 compare three exemplary calculations (Finland, Sweden and Thailand) for the level output losses with those from Laeven and Valencia. Annex table AIII.ll figures yield substantially higher output losses than for the growth method which is shown in the upper part of the table. The difference between the calculations here and Laeven and Valencia may result from the different assumptions about the pre-crisis trend growth. For the illustration purpose here, a simple 10-year average is taken in contrast to the Hodrick-Prescott filter used by Laeven and Valencia.

Output losses following financial crises have been substantial. Nearly 20% of average trend level GDP has been lost in the 49 crisis episodes between 1970 and 2007 (based on the descriptive statistics from Laeven and Valencia, 2008). While the impact on the real economy has varied substantially across crisis episodes, it appears that industrial and emerging markets were equally hard hit (Annex graph III.1). Even countries that are considered to have handled the resolution of their banking systems decisively, such as Finland and Sweden, suffered output losses of 59% and 31% of average trend level GDP. Jonung and Hagberg (2005) estimate that the loss for Finland was the highest of any peace-time crisis since the 1870s. However, one should not forget that additional shocks, such as the breakdown of the trade with the Soviet Union for Finland, also contributed substantially to the real economy effects.

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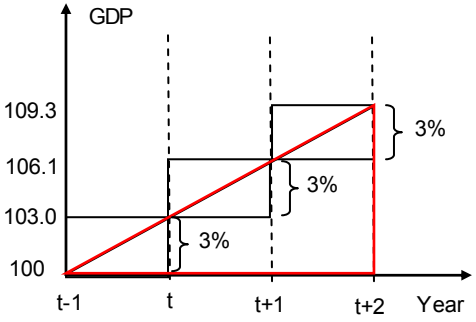
[143] The IMF (1998) and Caprio et al. (2005) use a three-year pre-crisis average of GDP as trend growth. Others, such as Bordo et al. (2001) and Jonung and Hagberg (2005) use a five-year trend. Schwierz (2004) uses the trend of three complete business cycles for Finland, Sweden and Norway.

[144] See for an explanation and a mathematical comparison of the two methods Hoggarth and Saporta (2001) and Hoggarth et al. (2002). The authors show that measuring output losses in levels rather than growth rates yields (i) a lower estimate of losses for crises lasting only one year, (ii) a higher estimate for crises lasting longer than two years and (iii) about the same estimate for crises lasting exactly two years. As an illustration assume that during a three-year financial crisis the output growth is zero while trend growth before the crisis started at t was 3%, then the output loss estimates using the growth would yield 9.0% while the level method would put the loss at 13.7%. As shown in the chart below, the growth rate calculation measures output costs only as the sum of the white rectangles, while the level calculation measures the loss as the grey triangle (1.5% in t; 4.5% in t+1 (=1.5% +3%) and 8% in t+2 (=1.5%+3%+3.2%)).



Annex table AIII.1: **Fiscal costs in systemic banking crises (1970-2007) 1/**

Country	Crises dates 2/	Total gross fiscal cost 3/ (% of GDP)	Total net fiscal cost 4/ (% of GDP)	Recovery ratio (% of gross fiscal cost)	Gross recapitalization cost (% of GDP)	Net recapitalization cost 5/ (% of GDP)	Recovery ratio from capital injections (% of capital injections)	Output loss (level estimate) 6/ (% of trend GDP)
EU countries		**6.6**	**5.5**	**23.9**	**2.8**	**2.4**	**12.1**	**18.4**
Bulgaria	1996-99	14.0	13.9	…	2.3	2.3	0.0	1.3
Czech Republic	1996-97	6.8	5.8	14.7	1.0	1.0	0.0	…
Estonia	1992-95	1.9	1.6	14.2	1.3	1.0	21.4	…
Finland	1991-94	12.8	11.1	13.4	8.6	6.9	19.9	59.1
Hungary	1991-95	10.0	…	…	…	…	…	…
Latvia	1995-99	3.0	3.0	0.0	…	…	…	…
Lithuania	1995-97	3.1	2.9	6.5	1.7	1.5	11.9	…
Poland	1992-95	3.5	…	…	…	…	…	…
Romania	1990-99	0.6	…	…	…	…	…	…
Slovak Republic	1998-2000	…	…	…	…	…	…	0.0
Slovenia	1992-94	14.6	…	…	…	…	…	1.0
Spain	1977-80	5.6	…	…	…	…	…	…
Sweden	1991-94	3.6	0.2	94.4	1.9	1.5	19.5	30.6
Non-EU OECD countries		**15.1**	**14.8**	**23.0**	**11.4**	**11.5**	**25.4**	**16.6**
Japan 7/	1997-2002	14.0	13.9	0.6	6.6	6.5	1.4	17.6
Korea	1997-2002	31.2	23.2	25.6	19.3	15.8	18.1	50.1
Mexico	1981-82	…	…	…	…	…	…	51.3
Mexico	1994-97	19.3	18.0	6.7	3.8	…	…	4.2
Norway	1991-93	2.7	0.6	77.8	2.6	0.6	76.6	0.0
Turkey	1982-85	2.5	…	…	…	…	…	0.0
Turkey	2000-03	32.0	30.7	4.1	24.5	23.2	5.3	5.4
United States	1988-91	3.7	2.4	…	…	…	…	4.1
Other countries		**18.2**	**14.5**	**16.8**	**8.4**	**6.0**	**19.7**	**20.2**
Argentina	1980-82	55.1	55.1	0.0	…	…	…	10.8
Argentina	1989-90	6.0	6.0	0.0	…	…	…	10.7
Argentina	1995-97	2.0	2.0	0.0	0.3	0.3	0.0	7.1
Argentina	2001-05	9.6	9.6	0.0	9.6	9.6	0.0	42.7
Bolivia	1994-97	6.0	3.4	44.0	0.9	0.0	100.0	0.0
Brazil	1990	0.0	0.0	…	…	…	…	12.2
Brazil	1994-96	13.2	10.2	22.7	5.0	5.0	0.0	0.0
Chile	1981-87	42.9	16.8	60.8	34.3	6.5	81.2	92.4
Columbia	1982-87	5.0	5.0	0.0	1.9	1.9	0.0	15.1
Columbia	1998-99	6.3	2.5	59.6	4.3	2.7	36.6	33.5
Cote d'Ivoire	1988-91	25.0	25.0	0.0	4.3	2.7	36.6	0.0
Croatia	1998-2000	6.9	6.9	0.0	3.2	3.2	0.0	0.0
Dominican Rep.	2003-04	22.0	20.8	5.5	…	…	…	15.5
Ecuador	1998-2001	21.7	16.3	25.1	1.9	1.6	15.8	6.5
Ghana	1982-89	6.0	6.0	0.0	6.0	6.0	0.0	15.8
Indonesia	1997-2002	56.8	52.3	7.9	37.3	37.3	0.0	67.9
Israel	1977-80	30.0	…	…	…	…	…	0.0
Jamaica	1996-2000	43.9	39.0	11.3	13.9	9.0	35.6	30.1
Malaysia	1997-2002	16.4	5.1	68.9	16.4	5.1	68.9	50.0
Nicaragua	2000-07	13.6	12.6	7.6	…	…	…	0.0
Paraguay	1995-99	12.9	10.0	22.5	1.2	1.2	0.0	0.0
Philippines	1997-2005	13.2	13.2	0.0	0.2	0.2	0.0	0.0
Russia	1998-2000	6.0	6.0	0.0	0.0	0.0	…	0.0
Thailand	1997-2002	43.8	34.8	20.5	18.8	18.8	0.0	97.7
Ukraine	1998-2000	0.0	0.0	…	…	…	…	0.0
Uruguay	2002-05	20.0	10.8	45.8	6.2	5.0	18.8	28.8
Venezuela	1994-95	15.0	12.5	16.7	5.6	5.6	0.0	9.6
Vietnam	1997-99	10.0	10.0	0.0	5.0	5.0	0.0	19.7
Average all countries		**14.8**	**13.0**	**17.8**	**7.8**	**6.0**	**20.0**	**19.3**

Notes: 1/ For the econometric work we also use the following crises episodes (except for the work on direct fiscal costs since no information on bank resolution policies is available for these countries
1/ Laeven and Valenca list another 65 banking crisis episodes during 1970-2007 mostly for developing economies. This are not used for the analysis here.
2/ Since Laeven and Valencia only define the starting points of the crises but not their length, we use for the latter the information provided by Demirgüç-Kunt and Detragiache (2005) and Reinhart and Rogoff (2008). In case of missing or conflicting information in those sources, the end of the crisis was determined as the year when domestic credit bottomed out.
3/ Gross fiscal costs are government outlays during the crisis.
4/ Gross fiscal costs minus recovery values during period t to t+5, where t is the first year of the crisis.
5/ Gross capital injections minus recovery during period t to t+5, where t is the first year of the crisis.
6/ Calculated as the cumulative deviation (from t to t+3) of real GDP level from trend real GDP level before the crisis. The level estimates shown here are higher than output losses based on growth rates. For many transition economies no sufficient data were avialable to calculate the pre-crisis trend.
7/ For Japan, revised Laeeven and Valencia data on gross fiscal costs are 14% of GDP compared to previous estimates of 24% of GDP (e.g., Caprio et al. 2005). Spilimbergo et al. (2008) put the gross costs at only 9.1% of GDP of which 4.7% of GDP were recovered until 2008 (in contrast to the shorter recovery period assumed (until 2002) in the Laeven and Valencia database).
Source: Data from Laeven and Valencia (2008) "Systemic Banking Crises: A New Database", IMF Working Paper 08/224 and Commission services.

Annex table AIII.2: **Crisis containment and resolution policies (1970-2007)**

Country	Crisis dates	Containment phase				Resolution phase											Total net fiscal cost 5/ (% of GDP)
							Large-scale govt. intervention										
		Deposit freeze	Bank holiday	Blanket guarantee 1/	Liquidity support 2/	For-bearance 3/	Overall large-scale govt. inter-vention 4/	Bank closures	Nationa-lisations	Mergers	Sales to foreigners	Bank restruc-turing agency	Asset manage-ment company	Recapital-isation	Deposit insurance	Losses imposed on depositors	
EU countries																	**5.5**
Bulgaria	1996-99	N	N	N	Y	Y	Y	Y	Y	N	Y	...	Y	Y	Y	N	13.9
Czech Republic	1996-97	N	N	N	N	N	Y	Y	N	Y	Y	Y	Y	Y	Y	N	5.8
Estonia	1992-95	N	N	N	Y	Y	Y	Y	Y	Y	N	N	Y	Y	N	Y	1.6
Finland	1991-94	N	N	Y	Y	Y	Y	N	Y	Y	...	Y	Y	Y	Y	N	11.1
Hungary	1991-95	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Latvia	1995-99	N	N	N	N	N	Y	Y	N	N	N	N	N	N	N	Y	3.0
Lithuania	1995-97	N	N	N	N	Y	Y	Y	Y	N	N	...	Y	N	N	Y	2.9
Poland	1992-95	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Romania	1990-99	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Slovak Republic	1998-2000	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Slovenia	1992-94	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Spain	1977-80	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Sweden	1991-94	N	N	Y	Y	N	Y	N	Y	...	...	Y	Y	Y	N	N	0.2
Non-EU OECD countries																	**17.3**
Japan 6/	1997-2002	N	N	Y	N	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	N	13.9
Korea	1997-2002	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	23.2
Mexico	1981-82	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Mexico	1994-97	N	N	Y	Y	Y	Y	N	Y	Y	Y	Y	N	Y	Y	N	18.0
Norway	1991-93	N	N	N	Y	Y	Y	Y	Y	Y	...	Y	N	Y	Y	N	0.6
Turkey	1982-85	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Turkey	2000-03	N	N	Y	Y	N	Y	Y	Y	Y	Y	N	Y	Y	Y	N	30.7
United States	1988-91	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Other countries																	**13.1**
Argentina	1980-82	N	N	N	Y	Y	Y	Y	Y	Y	Y	N	N	N	Y	N	55.1
Argentina	1989-90	Y	Y	N	Y	N	N	Y	N	Y	N	N	N	N	Y	Y	6.0
Argentina	1995-97	N	N	N	N	N	N	Y	N	Y	Y	N	N	Y	Y	N	2.0
Argentina	2001-05	Y	Y	N	Y	Y	Y	N	Y	N	N	Y	N	Y	Y	Y	9.6
Bolivia	1994-97	N	N	N	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	N	Y	3.4
Brazil	1990	Y	N	N	Y	N	N	N	N	N	N	N	N	N	N	N	0.0
Brazil	1994-96	N	N	N	Y	Y	Y	Y	N	Y	Y	N	N	Y	N	N	10.2
Chile	1981-87	N	N	N	Y	Y	Y	Y	N	Y	Y	N	N	Y	N	Y	16.8
Columbia	1982-87	N	N	N	Y	N	Y	N	Y	N	N	N	N	Y	N	N	5.0
Columbia	1998-99	N	N	N	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	N	2.5
Cote d'Ivoire	1988-91	N	N	N	Y	Y	Y	Y	N	N	...	...	Y	Y	N	Y	25.0
Croatia	1998-2000	N	N	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	6.9
Dominican Rep.	2003-04	N	N	N	Y	Y	Y	N	N	N	Y	N	Y	N	N	N	20.8
Ecuador	1998-2001	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	16.3
Ghana	1982-89	N	N	N	N	Y	Y	N	N	N	N	N	Y	Y	N	N	6.0
Indonesia	1997-2002	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	52.3
Israel	1977-80	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Jamaica	1996-2000	N	N	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	N	N	39.0
Malaysia	1997-2002	N	N	Y	Y	Y	Y	N	Y	Y	N	Y	Y	Y	N	N	5.1
Nicaragua	2000-07	N	N	Y	Y	N	Y	N	N	N	N	N	Y	N	N	N	12.6
Paraguay	1995-99	N	N	N	Y	Y	Y	Y	N	N	Y	N	N	Y	N	N	10.0
Philippines	1997-2005	N	N	N	N	N	N	Y	N	N	N	N	N	N	Y	N	13.2
Russia	1998-2000	N	N	N	Y	Y	Y	Y	Y	Y	N	Y	Y	N	N	Y	6.0
Thailand	1997-2002	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	34.8
Ukraine	1998-2000	N	N	N	Y	Y	Y	Y	N	N	N	Y	N	N	Y	Y	0.0
Uruguay	2002-05	Y	Y	N	Y	N	Y	Y	Y	N	Y	N	Y	Y	Y	N	10.8
Venezuela	1994-95	N	N	N	Y	Y	Y	Y	Y	N	Y	Y	N	N	Y	Y	12.5
Vietnam	1997-99	N	N	N	N	Y	Y	Y	N	Y	...	N	Y	Y	N	N	10.0
% of total number of incidents (EU and OECD)		0.0	0.0	50.0	66.7	66.7	100.0	66.7	83.3	72.7	66.7	70.0	75.0	83.3	66.7	25.0	
% of total number of incidents (other countries		19.2	15.4	19.2	80.8	69.2	84.6	73.1	46.2	53.8	50.0	44.0	53.8	65.4	42.3	38.5	
% of total number of incidents (all countries)		13.2	10.5	28.9	76.3	68.4	89.5	71.1	57.9	59.5	54.5	51.4	60.5	71.1	50.0	34.2	

Notes: 1/ On deposits and possibly other liabilities.
2/ Whether liquidity support was provided was derived by Laeven and Valencia from the monetary authorities' balance sheet. If the ratio of claims by monetary authorities on deposit money banks to total deposits was at least 5% and had at least doubled with respect to the previous year during the period t to t+3, than it was considered as liquidity support.
3/ Regulatory forbearance includes the suspension or less than full application of prudential regulations (e.g. for loan classification or loan loss provisioning) and, e.g. the permission for banks to continue operations despite being technically insolvent (see Laeven and Valencia, 2008).
4/ Indicates whether or not there was large-scale government intervention in banks, such as nationalisations, closures, mergers, sales and recapitalisations of large banks during the years t to t+3.
5/ Gross fiscal costs minus recovery values during period t to t+5, where t is the first year of the crisis.
6/ For Japan, revised Laeeven and Valencia data on gross fiscal costs are 14% of GDP compared to previous estimates of 24% of GDP (e.g., Caprio et al. 2005). Spilimbergo et al. (2008) put the gross costs at only 9.1% of GDP of which 4.7% of GDP were recovered until 2008 (in contrast to the shorter recovery period assumed (until 2002) in the Laeven and Valencia database).
Since they account for information that became available only after t+5, we report the Laeven and Valencia data here to maintain the consistency in methodology with other crises episodes.
Source: Data from Laeven and Valencia (2008) "Systemic Banking Crises: A New Database", IMF Working Paper 08/224.

Annex table AIII.3: **Correlation among different crises resolution measures (1970-2007)**

	Blanket guar-antee 2/	Liquidity support 3/	Regulatory for-bearance 4/	Bank closures	Nationa-lisations	Mergers	Sales to for-eigners	Bank restruc-turing agency	Asset manage-ment company	Recapital-isation	Deposit insurance	Losses imposed on depositors
Blanket guarantee	1	0.22	-0.07	0.22	**-0.36**	**0.43**	**0.38**	0.15	**0.41**	**0.40**	0.28	0.06
Liquidity support		1	0.15	0.21	-0.08	0.28	0.05	0.05	0.15	-0.07	0.05	-0.06
Forbearance			1	0.07	0.22	0.19	0.13	**0.38**	0.15	0.19	0.00	0.25
Bank closures				1	-0.07	0.24	0.26	-0.04	-0.04	-0.02	0.17	**0.34**
Nationalisations					1	0.28	0.08	**0.54**	0.29	0.28	**0.32**	-0.06
Mergers						1	**0.32**	**0.37**	0.22	**0.43**	0.19	-0.08
Sales to foreigners							1	0.10	0.08	**0.39**	0.21	**-0.32**
Bank restructuring agency								1	**0.31**	0.27	**0.31**	0.17
Asset management company									1	0.32	-0.16	-0.10
Recapitalisation										1	0.06	-0.27
Deposit insurance											1	-0.17
Losses imposed on depositors?												1

Notes: 1/ Based on 39 crises episodes with information on crisis resolution policies reported in Appendix Table 2.
2/ Whether liquidity support was provided was derived by Laeven and Valencia from the monetary authorities' balance sheet. If the ratio of claims by monetary authorities on deposit money banks to total deposits was at least 5% and had at least doubled with respect to the previous year during the period t to t+3, than it was considered as liquidity support.
3/ Regulatory forbearance includes the suspension or less than full application of prudential regulations (e.g. for loan classification or loan loss provisioning) and, e.g. the permission for banks to continue operations despite being technically insolvent (see Laeven and Valencia, 2008).
4/ Indicates whether or not there was large-scale government intervention in banks, such as nationalisations, closures, mergers, sales and recapitalisations of large banks during the years t to t+3.
Source: Calculations based on data from Laeven and Velencia (2008).

Annex Table AIII.4: **Exemplary calculations of output costs using the growth and level methods**

Growth method	Trend growth (10-year pre-crisis average)	Real GDP growth rate during crises				GDP with trend growth (t-1=100)	Actual GDP after crisis (t-1=100)	**Output loss**	**Caprio et al. (2005)**
		t	t+1	t+2	t+3	t+3	t+3	t to t+3	t until trend growth is reached
						A	B	A-B	
Finland	3.0	-6.2	-3.7	-0.9	3.6	112.7	92.6	**20.1**	**21.0**
Sweden	2.1	-1.1	-1.2	-2.0	3.9	108.8	99.6	**9.2**	**11.0**
Thailand	9.5	-1.4	-10.5	4.4	4.8	143.9	96.6	**47.3**	**40.0**
Level method	Trend growth (10-year pre-crisis average)	Actual real GDP level during crises (t-1=100)				Total GDP with trend growth	Total actual GDP	**Output loss**	**Laeven/ Valencia (2008)**
		t	t+1	t+2	t+3	t to t+3	t to t+3	t to t+3	t to t+3
						A	B	(A-B)/(A/4)	
Finland	3.0	93.8	90.3	89.4	92.6	418.6	366.1	**50.2**	**59.1**
Sweden	2.1	98.9	97.8	95.8	99.6	412.9	392.1	**20.2**	**30.6**
Thailand	9.5	98.6	88.3	92.2	96.6	460.8	375.6	**73.9**	**97.7**

Source: Commission services.

Existing analysis show that output losses following financial crises are often not fully recovered. Although after an initial collapse in economic activity following banking crises growth accelerates, often at high pace, this acceleration in growth during the recovery may not be sufficient to restore the level of economic activity prevailing before the start of the crisis or may be short-lived, with growth stabilising at rates below the trend observed before the crisis. Recent analysis shows that on average the recovery of growth rates after crisis periods is not sufficient to bring back past trend growth on a sustainable basis. Cerra and Saxena (2008) estimate impulse-response functions of GDP growth rates after banking crises shocks and find that, on average, across alternative groups of countries, growth rates tend to converge to levels below the pre-crisis period.

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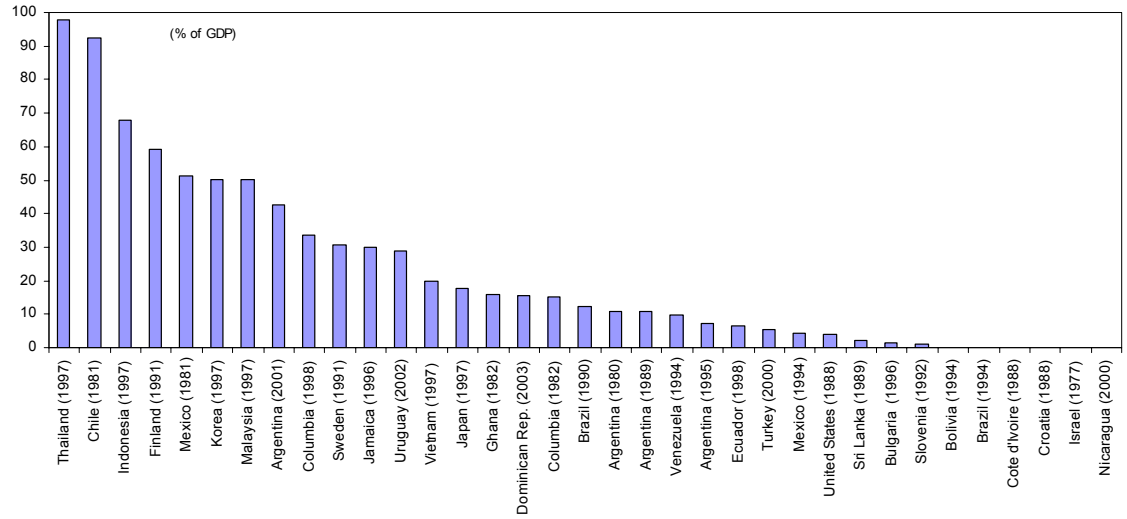
Annex graph III.1: **Output losses of systemic banking crises (1970-2007)**



Notes:Output losses are calculated as the cumulative deviation (from t to t+3) of the level of real GDP from the trend level of real GDP in percent of average trend level GDP. The level estimates shown here are higher than output losses based on growth rates. For most transition economies not sufficient data were avialable to calculate the pre-crisis trend.
Source: Data from Laeven and Valencia (2008).

crisis periods is not sufficient to bring back past trend growth on a sustainable basis. Cerra and Saxena (2008) estimate impulse-response functions of GDP growth rates after banking crises shocks and find that, on average, across alternative groups of countries, growth rates tend to converge to levels below the pre-crisis period.Caution is needed in interpreting output developments following financial crises. There are strong reasons to expect that systemic banking crises cause a reduction in the amount of available credit, thus depressing investment, consumption and output. Consistently, the data indicate that credit to the private sector tends to fall following financial crises. However, it cannot be excluded that part of the output loss that is observed during financial crises episodes is the cause rather than the consequence of financial sector distress. More generally, the burst of asset bubbles is the concomitant cause of reduced economic activity and losses in the banking and financial sector. Some research has attempted to tackle the issue of reverse causation in estimating the impact of banking crises on output. Dell' Ariccia, Detragiache and Rajan (2006) use the methodology proposed by Rajan and Zingales (1998) to assess the contribution of financial development to growth potential to analyse the banking crises implications on output. Exploiting data variation both across countries and sectors, it is shown that the sectors that undergo the strongest contractions during banking crisis periods are those more exposed to external finance. This evidence corroborates the hypothesis that output losses are the result, rather than the cause of reduced availability of credit.

ANNEX III.2. ASSESSING THE IMPACT OF BANKING CRISES ON GOVERNMENT DEBT

The evolution of the debt-to-GDP ratio in Graph III.3.8 was constructed as

$$\frac{D_t}{Y_t} = \frac{D_{t-1}}{Y_{t-1}} + d - \frac{D_{t-1}}{Y_{t-1}} * \frac{y_t}{1+y_t}$$

where D is the stock of debt, Y is nominal GDP, y is nominal growth, d is the estimated average value of the sum of the budget deficit plus stock flow adjustment during crises, and where the snow ball term $\frac{D_{t-1}}{Y_{t-1}} * \frac{y_t}{1+y_t}$ is taken from actual historical data.

As for d, it is computed as

$$d = \frac{\beta_3 * \left(\frac{\omega_3}{1-\omega_1-\omega_2}\right)}{(1-\beta_1)} + \frac{\beta_4}{(1-\beta_1)}, \qquad \text{(i)}$$

where the coefficients in formula are those in the regression equations (2) and (3). The first term on the right hand side of equation (i) is the long term impact of additional negative output gap due to the crisis (the additional loss of output compared with trend being equal to equal to $\frac{\omega_3}{(1-\omega_1-\omega_2)}$), while the second term in (i) is the direct impact of the crisis on the change deterioration in debt.

Hence, the simulation consists of starting from the historical value of debt $\frac{D_{t-1}}{Y_{t-1}}$ before the crisis and replacing the subsequent actual values of the sum of the deficit and stock flow adjustment with *d,* the predicted average impact of the crisis from the regression analysis.

Equation (i) could also be used to compare the relative importance of the direct impact of a financial crisis on the change in debt with the indirect impact via the deterioration in the output gap. Using actual data for the sample of OECD countries considered in Section III.3.2, the *d* term in equation (i) was equal to 6%. A simple calculation based on (i) shows that approximately 2 percentage points of the increase in debt was due to indirect effect via the output gap (i.e. corresponding to the first term on the right hand side of equation (i)) while 4 percentage came from the direct impact on change in debt (i.e., corresponding to the second term of the right hand side of equation (i)).

This decomposition is subject to a number of caveats, however. First such decomposition includes the stock flow adjustment as explained above. Second, the benchmark used is the average length of the crisis (approximately 5 years) assuming that for each year of a financial crisis the increase in debt due to the crisis (and the split into direct and indirect effect) remains constant. The reality might be rather different, however. In particular, results reported in Section III.3.2 show that the bulk of the impact of financial crises on public debt took place in the first two years. This means that the impact of a financial crisis on debt via the output loss could be more important considering cases when a crisis lasts more than five years. Third, the calculation also assumes that nominal GDP growth stays constant during a crisis period (while in reality for the sample countries nominal GDP grew by 2.5% over the crisis period) while it could be expected that the deterioration in GDP growth is more pronounced at the beginning of the crisis. Relaxing these assumptions (and assuming that, e.g., 80% of the crisis impact takes place during the first two years and nominal GDP growth is -2% and 0% in the first and second year of a financial crisis and 2.5% for the rest of the crisis period) would yield an increase in the public debt-to GDP ratio by 28 percentage points (instead of 21% of GDP as reported in Section III.3.2). More generally, the relative importance of the direct and indirect (via the deterioration in the output gap) impact of financial crises on changes in debt levels can vary substantially depending on country-specific circumstances, especially as regards the length of a financial crisis.

Part IV

Public finances in booms and busts

SUMMARY

As evidenced in Part III, past experiences show that systemic financial crises can have particularly distressing effects for public finances through direct fiscal costs (related to public support of the banking sector) and indirectly through severe output loss. The current financial crisis is no less challenging for European economies. This crisis has, in particular, drastically reversed the favourable economic conditions that prevailed until 2008, entailing a fast and sizeable deterioration of fiscal positions in most EU countries, threatening in turn the sustainability of public finances over the medium term in some. This chapter analyses the role played by the recent episodes of asset prices and credit booms and busts on EU countries' public finances. It analyses in particular the conditions under which active fiscal stimulus might (or might not) help smoothing the potential economic costs of a bust.

Credit markets and asset price evolutions played a key role through buoyant tax revenues and catching up public expenditure during the booms, followed by large tax revenue shortfalls. Section IV.1 presents some key macro-financial and economic developments in the run-up to the financial crisis illustrating the credit and property boom and its characteristics. It shows large differences across Member States.

Section IV.2 analyses the impact of property price evolutions on public finances during the boom period. It presents recent public finance developments in the EU, linking them to the building-up of asset price and credit booms using VAR analysis. Impulse-response functions were constructed checking to what extent the fiscal variables react to house price variations over a time horizon of 10 years after the shock. Government revenues tend to react more swiftly - and in a more pronounced way - to a positive shock in house prices than government expenditure. In most cases government expenditures catch up with government revenues suggesting that the potential improvements in the budget balance are only temporary. The VAR model is also used to analyse the link between variables that may fuel the interaction between house prices and fiscal variables, illustrating the mechanisms at play. Results indicate that the credit channel is by far the most influential variable in transmitting house price fluctuations to total government revenues. It also indicates important differences across countries. Further econometric analysis of the determinants of tax revenue surprises suggests that the effects of internal and external imbalances on public finances are strongly interconnected. However, the most important determinant of revenue windfalls appears to be expectations that are not validated by subsequent business cycle developments. Illustrative simulations using the Commission services' QUEST III model with credit constrained households indicate that prudent fiscal policy during good times can help containing the output drop following a boom, especially in countries that have limited fiscal space preventing countercyclical policies or requiring procyclical tightening during the bust.

Section IV.3 looks at the consequences of the bust in property prices for public finances by analysing the effects of fiscal constraints for different degrees of fiscal space. It shows that the increase in government debt-to-GDP ratios can be very substantial as deficits mount and output drops. In some Member States, buoyant domestic demand, accompanying the credit expansion and property price appreciation, has led to appreciating real exchange rates, growing current account deficits and net foreign liabilities. As the financial crisis set in and global risk aversion increased, these features influenced financial market perception of Member States prospective fiscal space, and thus their capacity to finance expansionary fiscal policies. The ability to conduct active fiscal policies aimed to cushion the negative impact of the financial crisis may therefore be limited by adverse financial market reactions. Simulations with the Commission services' model QUEST III indicate how in countries with small fiscal space the benefits of a fiscal stimulus in the short run may be nullified by movements in risk premia. While financial market reactions to fiscal policy and expectations of fiscal space developments cannot be accurately forecast, these simulations highlight the need to differentiate fiscal policy across Member States according to their fiscal space and the market spreads on sovereign, corporate and financial sector bonds.

Section IV.4 provides a summary of the results and proposes future work in particular related to the medium-term effects of building-up and unwinding imbalances on budgetary developments and the role that fiscal policy can play in this context.

1. INTRODUCTION

1.1. BOOMS, BUSTS AND PUBLIC FINANCES

As evidenced in Part III, past experiences show that systemic financial crises can have particularly distressing effects for public finances through direct fiscal costs (related to public support of the banking sector) and indirectly through severe output loss. The current financial crisis is no less challenging for European economies. This crisis has, in particular, drastically reversed the favourable economic conditions that prevailed until 2007, entailing a fast and sizeable deterioration of fiscal positions in most EU countries, threatening in turn the sustainability of public finances over the medium term in some. Credit markets and asset prices evolutions have played (and still play) a key role in this context through buoyant tax revenues and public expenditure during the booms, followed by large tax revenue shortfalls and public expenditure increases linked to automatic stabilisers.

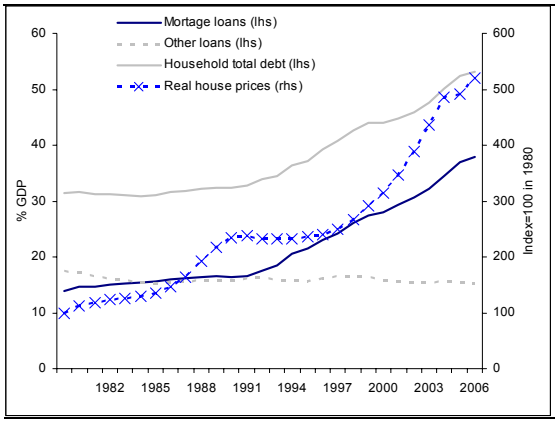
Importantly in this regard, the features of the expansionary period that preceded the current financial turmoil have direct consequences on the ability of EU countries to run counter-cyclical fiscal policies during today's crisis. In particular, dynamic internal demand favoured by the credit expansion and property prices appreciation has led many countries to experience growing current account deficits and net foreign liabilities. These features became especially influential for the (negative) perception of financial markets on their prospective fiscal space, i.e. capacity of these countries to finance expansionary fiscal policies. Countries with reduced fiscal space are therefore perceived as being less able to finance stimulus measures without running large public deficits.

Before analysing more closely the links between the boom, busts and public finances, the following section provides an overall picture on the macroeconomic conditions describing the situation of EU countries at the onset of the financial crisis with special attention to credit expansion and house prices evolutions.

1.2. CREDIT, PROPERTY PRICES AND MACROECONOMIC DEVELOPMENTS IN THE EU

Property prices boomed and credit expansion accelerated over the past decade in the European Union as in most of the world economies. Graph IV.1.1 shows in particular that mortgage debt played a key role in the transmission of credit expansion to property prices increases. The strong growth in household debt and particularly mortgage lending went hand in hand with the increase in house prices. In contrast, other types of loans, including consumption credit were rather stable.

Graph IV.1.1: **House prices, mortgage loans and other credits in selected EU countries**



Note: Countries covered: Belgium, Germany, Denmark, Spain, Finland, France, Ireland, Italy and Netherlands.
Source: Commission services

The evidence regarding credit and property prices in the EU had also broader macroeconomic implications. Table IV.1.1 provides a broad picture of some of the macroeconomic variables most directly affected by the recent credit and property booms in the EU during the last decades. Columns (1) and (2) show that the recently acceded Member States and a number of other countries (in particular, Ireland, Spain, Greece, Luxembourg and Finland) experienced high average growth rates. In some Member States, the favourable economic performance was boosted by buoyant domestic demand, especially construction investment. In contrast, Germany and Denmark experienced low rates of economic growth compared to other EU countries. In Portugal, high growth rates were followed by a period of low growth.

High GDP growth rates coincided with rapid credit expansion between 1998 and 2007. Households and non-financial corporations' loans drove most of the very fast increase in total credit to the economy. In particular mortgage debt surged from 34% of GDP in 1998 to 49% of GDP in 2007. Germany was the sole exception to this EU trend with a shrinking mortgage-to-GDP ratio characterising its adjustment to the post-reunification expansionary phase. In some countries, the expansion of mortgage credits was of a spectacular magnitude: Ireland (+49 percentage points); the Netherlands (+39 pp); Spain (+38 pp); the UK (+36); and Greece (+24 pp). In the Netherlands and the UK the increases came on top of relatively high initial levels, while in Ireland, Greece and Spain, the increase may at least partly have been due to catching-up. In the recently acceded Member States the increases were no less exceptional, although starting from much lower mortgage indebtedness levels, due in many cases to incipient mortgage markets in 1998. The most notable cases are: Cyprus (+41 pp); Latvia (+33 pp), Estonia (+33 pp), Malta (+30 pp) and Lithuania (+17 pp). Together with the rapid credit and mortgage expansions, the construction sector boomed in some countries (see Column (3)), most notably in Spain and Ireland, and also in a number of other countries such as Latvia, Estonia or Slovenia.

The developments coincided with strong and persistent appreciations of the real exchange rate (REER) in the booming economies. The exchange rate appreciation was particularly pronounced in the Baltic countries, Hungary, the Czech Republic and Slovakia (see Column (5) in Table IV.1.1). Some EU15 countries also experienced strong (albeit relatively lower) REER appreciation, in particular Ireland, Portugal, Denmark, Spain and Italy. Together with dynamic domestic demand, the REER appreciation led to a substantial deterioration of current account positions in some of these countries, in particular euro area Member States such as Spain, Ireland and Portugal and also some non-euro area counties (or countries not yet members of the euro area in 2007) such as Romania, Slovenia, Lithuania and Latvia.

In general these countries experienced a strong deterioration in their net foreign assets position (see Column (7) in Table IV.1.1), with the notable exception of Ireland thanks to sustained direct investment flows during the period under scrutiny. Some of the recently acceded Member States also experienced a large increase of their current account deficit (in particular Bulgaria, Lithuania and Cyprus). On the other hand other countries experienced growing current account surplus and large increases in their net foreign assets positions, most notably Germany, Netherlands, Austria, Denmark and Sweden. Graph IV.1.1 illustrate the correlation between increasing (mortgage) debt and current account deterioration, showing that this relation holds especially for EU15 countries and less so for the recently acceded Member States.

More generally, this preliminary evidence suggests that the deterioration of external position appears to be directly correlated with the rise in private indebtedness and mortgage debt in particular. This coincides with findings by Langedijk and Roeger (2007), who find that the absence of an exchange risk premium in EMU allows an increase in capital mobility resulting in a lower correlation between domestic savings and investment. According to these authors, increased capital mobility seems to have been an important driving force behind the current account dynamics in the EU. Due to the reduction of risk premia, investment – and especially housing investment - responds strongly to exogenous shocks. This leaves countries that have benefited most from reduction in risk premia (such as Spain, Ireland and Greece) vulnerable to adverse risk premium shocks. Evidence on the relationship between mortgage debt and current account imbalances appears to be less clear in the recently acceded Member States. The relatively less developed mortgage markets in this latter group of countries, coupled with the prevalence of higher interest rates explain in part why the global credit expansion had a limited bearing on macroeconomic conditions and, in particular changes in current account.

Assessing countries that experiences boom-bust episodes in asset prices in the past twenty years, Martin, Schuknecht and Vansteenkiste (2007) distinguish between industrialised countries that experienced external adjustment via real effective exchange rate depreciation during busts and those that relied on an internal adjustment process and experienced no exchange rate depreciation but corrected real wage and tradable/non-tradable sector imbalances via domestic price adjustments.

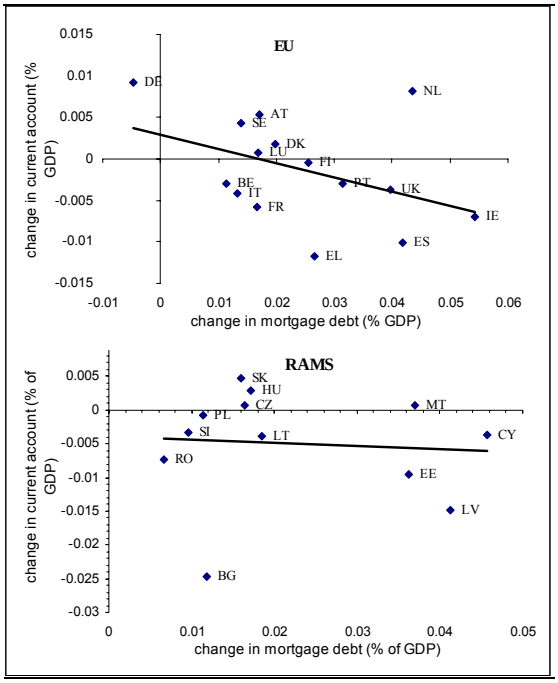
Table IV.1.1: **Key macroeconomic developments before the financial crisis: 1998-2007**

	(1) Real GDP growth rate	(2) Real internal demand growth rate	(3) Current account balance*		(4) Employment in construction sector		(5) Real effrective exchange rate (100 in 1998)	(6) Mortgage debt*		(7) Net foreign assets*	
	av. 1998-2007	av. 1998-2007	1998	2007	1998	2007	2007	1998	2007	1998	2007
AT	2.5	1.8	-1.5	3.3	8.6	6.7	90.2	13.7	23.9	-16.5	-12.9
BE	2.3	2.2	5.1	2.4	5.6	5.9	99.2	26.5	36.8	32.9	28.1
BG	5.1	8.0	-0.2	-22.5	4.6	6.2	108.5	0.4	9.9	-10.7	-115.8
CY	4.0	4.6	-6.3	-11.7	9.3	9.9	107.1	3.6	44.8	--	--
CZ	3.6	2.8	-2.1	-1.5	8.4	8.5	147.0	3.7	11.9	-21.2	-29.9
DE	1.6	1.0	-0.7	7.6	7.5	5.6	83.9	51.9	47.7	-2.9	16.1
DK	2.0	2.4	-0.9	0.7	5.5	6.6	107.8	75.0	92.8	-25.1	-4.4
EE	7.1	7.7	-9.8	-18.3	7.2	11.6	139.5	3.7	36.3	-36.9	-75.1
EL	4.1	4.4	-3.5	-14.0	8.5	8.4	103.5	6.3	30.2	-33.4	-103.4
ES	3.8	4.8	-1.1	-10.1	10.1	13.1	109.6	23.9	61.6	-30.2	-79.7
FI	3.6	3.1	5.7	4.0	6.2	7.4	95.8	21.5	34.3	-73.5	-29.1
FR	2.3	2.7	2.3	-2.8	5.6	6.9	99.9	20.0	34.9	8.6	-1.3
HU	4.1	4.4	-9.1	-6.2	5.6	8.5	141.6	2.1	12.4	-75.5	-98.7
IE	6.8	6.3	0.9	-5.4	7.7	13.3	111.3	26.5	75.3	-15.4	-10.1
IT	1.5	1.8	1.9	-1.8	5.7	7.8	105.9	7.8	19.8	-2.7	-1.8
LT	6.6	7.8	-11.6	-15.1	7.8	11.1	133.2	0.9	17.5	-22.8	-57.5
LU	5.3	4.0	9.2	9.8	10.9	11.0	99.2	23.3	38.5	--	--
LV	7.8	9.7	-9.6	-22.5	5.9	11.2	143.1	0.7	33.7	-20.0	-60.0
MT	2.6	2.2	-6.0	-6.1	6.5	6.1	102.2	8.0	37.6	--	--
NL	2.6	2.4	2.5	9.8	5.9	5.7	106.1	60.8	100.0	-18.4	39.5
PL	4.2	4.0	-3.8	-5.1	7.4	7.9	95.1	1.5	11.7	-25.4	-45.8
PT	2.0	2.2	-7.3	-9.7	10.0	10.1	108.2	36.9	62.1	-30.0	-92.2
RO	3.9	6.6	-7.3	-13.5	4.5	10.4	177.8	1.5	3.5	-8.8	-64.3
SE	3.2	2.7	4.4	9.0	4.6	6.0	93.7	44.5	57.0	-35.2	-1.9
SI	4.4	4.1	-1.1	-4.0	6.8	8.4	98.1	0.3	8.0	-4.5	-22.2
SK	4.9	3.8	-9.4	-5.1	6.8	7.8	138.6	3.9	11.9	-14.4	-46.0
UK	2.9	3.4	-0.4	-2.9	4.6	4.3	105.4	50.6	86.3	--	--
EA-12	2.2	2.3	0.8	-0.7	7.4	7.4	--	36.1	48.5	--	--
RAMS	4.3	4.6	-5.0	-7.5	6.4	7.4	--	2.0	12.3	--	--
EU-27	2.5	2.6	0.4	-1.2	6.6	6.9	--	34.0	48.9	--	--

* Percent of GDP
Source: Commission services and European Mortgage Federation

They find that the difference between internal and external adjustment is correlated with the degree of macroeconomic imbalances and balance sheet problems. Internal adjustment seems more prevalent when financial vulnerabilities, excess demand and competitiveness loss remain relatively contained in the boom. In the bust, internal adjusters experience more protracted but less deep downturns than external adjusters as imbalances unwind more slowly.

Graph IV.1.2: **Annual average change in current accounts and mortgage debt (1998-2007)**



Source: Commission services

2. PUBLIC FINANCES DURING THE BOOM

This section provides an overview of developments in public finances in the EU, linking them to the building-up of asset price and credit booms. Existing studies suggest that assets prices may affect fiscal balances via direct taxations on property and capital transactions and also indirectly via wealth effects and indirect taxes linked to consumption. Asset prices developments -and in particular house prices- may have distressing effects on fiscal balances when going from boom to bust. ([145]) Recent EU experience suggests the building up of large internal and external imbalances has had significant effects on public finances and that both are also closely linked and equally disrupting.

2.1. RECENT DEVELOPMENTS IN PUBLIC FINANCES

From 2003 to 2007 tax revenue growth was exceptionally high in most EU countries, often largely exceeding government forecasts. ([146]) Average real revenue growth was 2.3% per year in the euro area, 4.2% in the UK and 3.7% in Sweden during this period (see Graph IV.2.1.). ([147]) Real expenditure growth was much less pronounced on average in the euro area at 1.4% per year over the same period and in Sweden at 1.7% while in the UK expenditure kept rising at 4.4%, i.e. even higher than UK revenue growth rate. The magnitude of tax revenues and expenditure growth rates was much larger in the RAMS with, in some years, double-digits figures.

A substantial part of government revenue evolutions during this period was unexpected (i.e., corresponded to revenue windfalls) and in most cases was linked to business cycle developments. The current financial crisis put a halt to these large revenue windfalls.

Graph IV.2.2 provides evidence on this by measuring unexpected changes in total tax revenues using the information contained in the Stability and Convergence Programmes. ([148]) Government revenue windfalls have been quite large until recently, reaching a maximum of 0.9% of GDP in 2006 for the euro area, 0.8% of GDP in 1999 for non-euro area EU15 countries and 1.3% of GDP in 2007 for the recently acceded Member States. Since 2007, however, the situation has been reversed rather substantially in most countries, with governments experiencing large revenue shortfalls of an even greater magnitude in percentage of GDP than the windfalls that prevailed in the earlier period. The negative evolution in 2008 has been especially important for the recently acceded Member States (in particular Estonia with -13% of GDP and Latvia with -10%) and the UK (-2.1%). Detailed figures suggest that in the euro-area Ireland (-6.6% of GDP), Luxembourg (-4.9%) and Greece (-3.7%) were particularly affected.

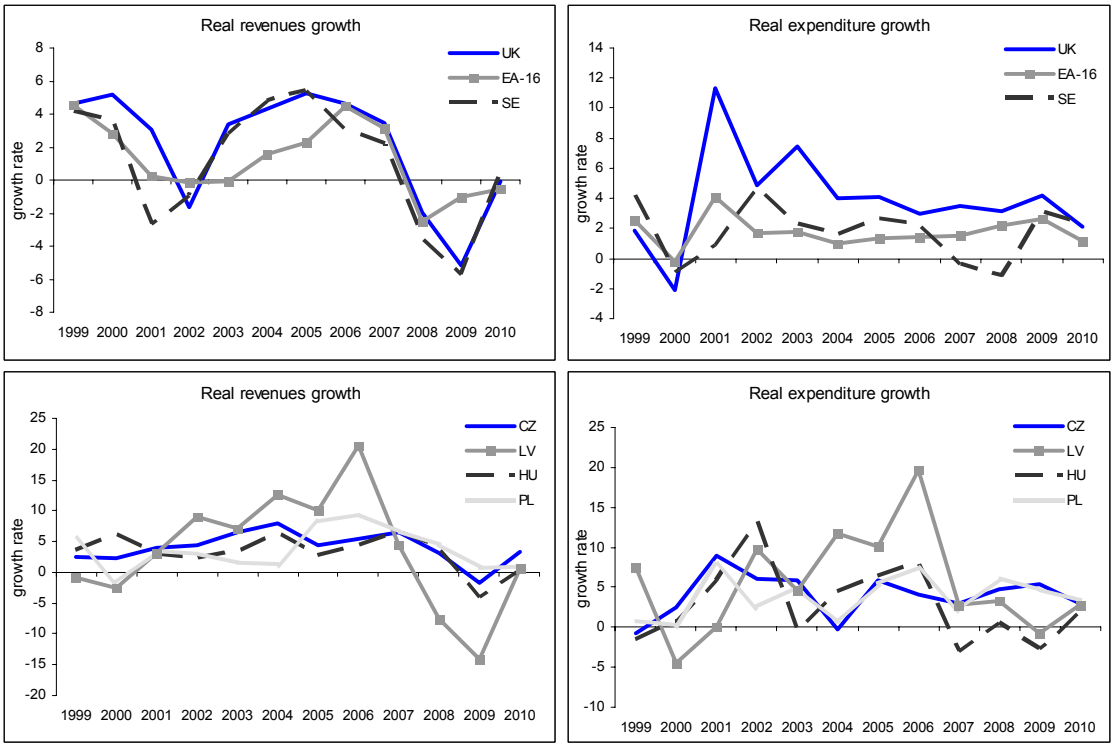
([145]) See for instance Eschenbach and Schuknecht (2002).

([146]) See in particular European Commission (2008a), 'Public finance report in EMU-2008', Directorate General for Economic and Financial Affairs and Morris, R. and L. Schuknecht (2007), 'Structural balances and revenue windfalls - The role of asset prices revisited', *ECB Working Paper* n°737.

([147]) GDP deflated using GDP deflator.

([148]) Using the information contained in the SCPs, revenue windfalls/shortfalls can be defined as the deviation of the ex post government revenues in year t from what was previously foreseen for that year in t-1. Given that the SCP typically concern periods running from year t to year t+3 and are submitted between November in year t-1 and January in year t, it can reasonably be assumed that the differences between ex post figures and planned developments in government revenues for the first year of the programme are good proxies for revenue windfalls/shortfalls (see Barrios and Rizza, 2008). The revenue windfall/shortfalls defined that way thus correspond to the unexpected variation in government revenues. An alternative approach, used by the Europan Central Bank, defines revenue windfalls as unexplained residuals in revenue changes (see in particular Kremer et al., 2006).

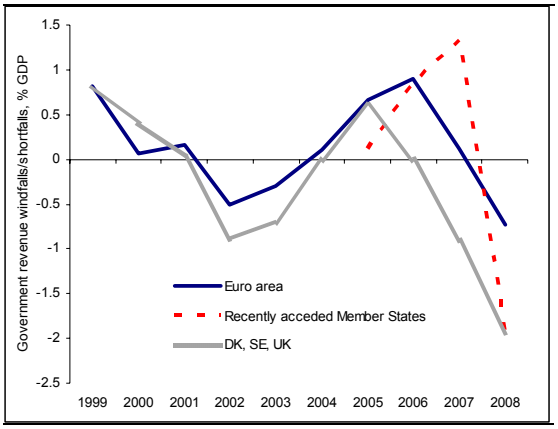
Graph IV.2.1: **Government revenues and expenditure growth in selected EU countries, 1999-2010**



Source: Commission services.

The following sections analyse the extent to which these revenues developments were linked to the building up of macroeconomic imbalances documented in Section IV.1 by considering successively external and internal imbalances and, later on, their interconnection through simulation analysis.

Graph IV.2.2: **Tax revenue windfalls/shortfalls in the EU, 1999-2008 (% GDP)**



Source: Commission services

2.2. HOUSING MARKETS AND PUBLIC FINANCES

2.2.1. The direct impact of house prices on tax revenues in the EU

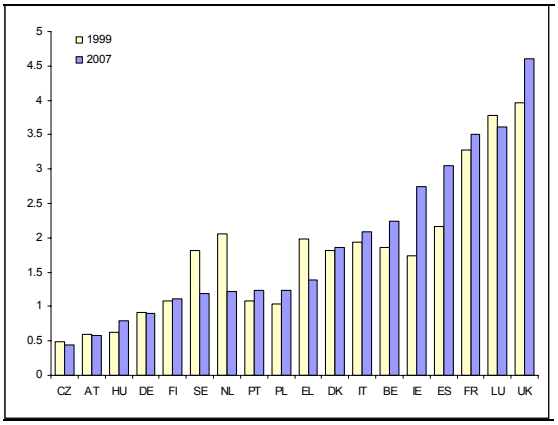
The evidence for the EU shows that domestic asset price developments (in particular housing) have in some EU Member Stats contributed to the large revenue windfall/shortfalls. ([149]) Large asset prices fluctuations can have sizeable effects on fiscal policy through two distinct channels: a direct one, whereby taxes related to asset transactions boost tax revenues during periods when both transactions and prices are particularly dynamic; and an indirect one, when asset prices booms result in large wealth effects, either real or perceived, and hence to higher consumption and investment. The two effects differ in implications and timing.

The direct impact of asset prices on tax revenues is usually relatively limited in time and size although

([149]) See Hilbers et al. (2008).

during some periods it may lead to significant changes in tax revenues. For instance, property taxes during the period 2000-2007 increased substantially in Ireland, Spain and the UK in the wake of booming housing markets. Graph IV.2.3 shows the level of property tax revenues in a number of EU countries for 1999 and 2007. Importantly, cross-country differences emerge. The UK, Luxembourg and France traditionally have the highest amounts of revenues related to property taxes. By contrast, property tax revenues are low in most recently acceded Member States (RAMS), as well as Finland and Germany. In the case of Germany, in particular, long-lasting stagnation in house prices and relatively few property transactions have contributed to low tax revenues related to housing over the past decade.

Graph IV.2.3: **Property taxes in 1999 and 2007 (% of GDP)**

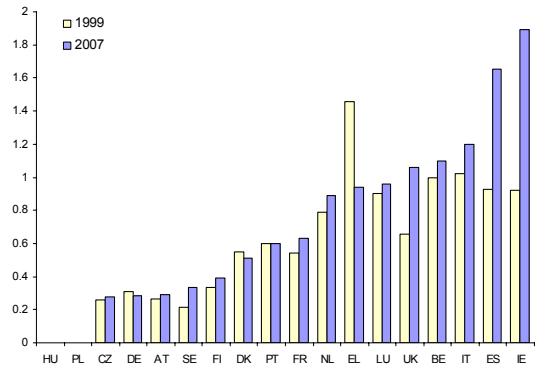


Notes: Includes taxes on property values and transactions.
Source: OECD and Commission services.

Graphs IV.2.4 highlights the rising importance of property taxes in the total government revenues of some countries by considering taxes on transactions (i.e., sales and purchases) in properties.

Taxes on property transactions rose from 0.9% to 1.9% of GDP between 1999 and 2007 for Ireland, from 0.9% to 1.7% for Spain and from 0.6% to 1% for the United Kingdom. Italy and Belgium had also relatively high levels of tax revenues related to transactions in the housing market although these countries started from already high levels of property taxes in 1999.

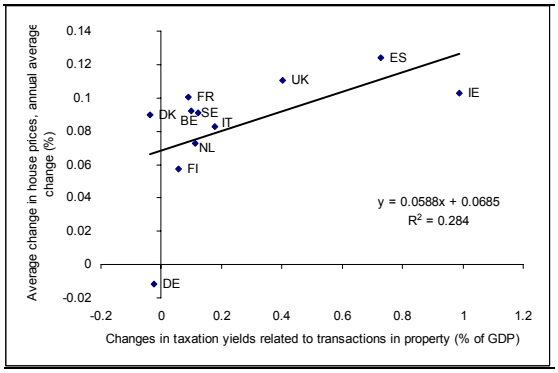
Graph IV.2.4: **Property transaction taxes in 1999 and 2007 (% of GDP)**



Source: OECD and Commission services.

Ireland, Spain and the United Kingdom have benefited particularly from booming housing markets and corresponding increases in prices as illustrated in Graph IV.2.5.

Graph IV.2.5: **Taxes on transactions in property in 1999 and 2007 (% of GDP)**



Notes: Concern taxes on property transactions only.
Source: OECD and Commission services.

Evidence regarding the indirect effects of house prices evolution on consumption, in particular, is less clear-cut. One reason for this may be due to the fact that housing assets differ from other types of assets as they also provide services to the owner, i.e. housing services. As a consequence price variations affect both financial wealth of households but also the price of consuming housing services such that the net effect of house price variations on consumption depends on redistribution between renters and owners, (see Buiter, 2008 and Campbell and Cocco, 2005). More generally, house prices are usually assumed to affect consumption through the wealth channel or through the collateral channel, with house price

changes affecting household borrowing constraint. Regarding the latter effect, in particular, evidence presented above ssuggests that the fast increase in house price and positive anticipations regarding house price evolutions favoured greater household indebtedness. The evidence of the positive wealth effects of house price increases is less clear-cut. Overall, both consumption and savings have been rather stable since 1995 with saving experiencing a slight increase since 2005 (see in particular European Commission, 2008b).

2.2.2. The direct and indirect effect of house prices on government finances: evidence from a VAR analysis

This section presents country-specific analysis assessing the extent to which house price bubbles may have affected government revenues and, by the same token, the fiscal balance. A vector autoregressive model (VAR) is estimated to assess the direct and indirect reaction of governments' finances to changes in house prices. The VAR estimations are run for a number of EU countries considered individually: Belgium, Finland, France, Germany, Ireland, Italy, the Netherlands, Spain, Sweden and the United Kingdom. These countries were selected on the basis of data availability during the period 1975-2007.

The variables, retained in the VARs were considered in the following order: a dummy variable for EMU, government expenditure, government revenue, nominal GDP growth rate, the real effective exchange rate (REER), total credit to the economy, equity prices and house prices. ([150]) The ordering of the variables used in the VAR reflects assumptions regarding the extent of the endogeneity. The ordering used here follows the one used by Bayoumi (2001), who performed a similar exercise for Japan. ([151]) Several alternative orderings were tried out without changing substantially the results reported here.

The first result of interest concerns the reaction of government expenditure and revenues to house price changes. Impulse response functions were constructed in order to check to what extent the fiscal variables react to house prices variations over a time horizon of 10 years after the shock (of 1 percentage point) given to house price. Graph IV.2.6 provides detailed results by country.

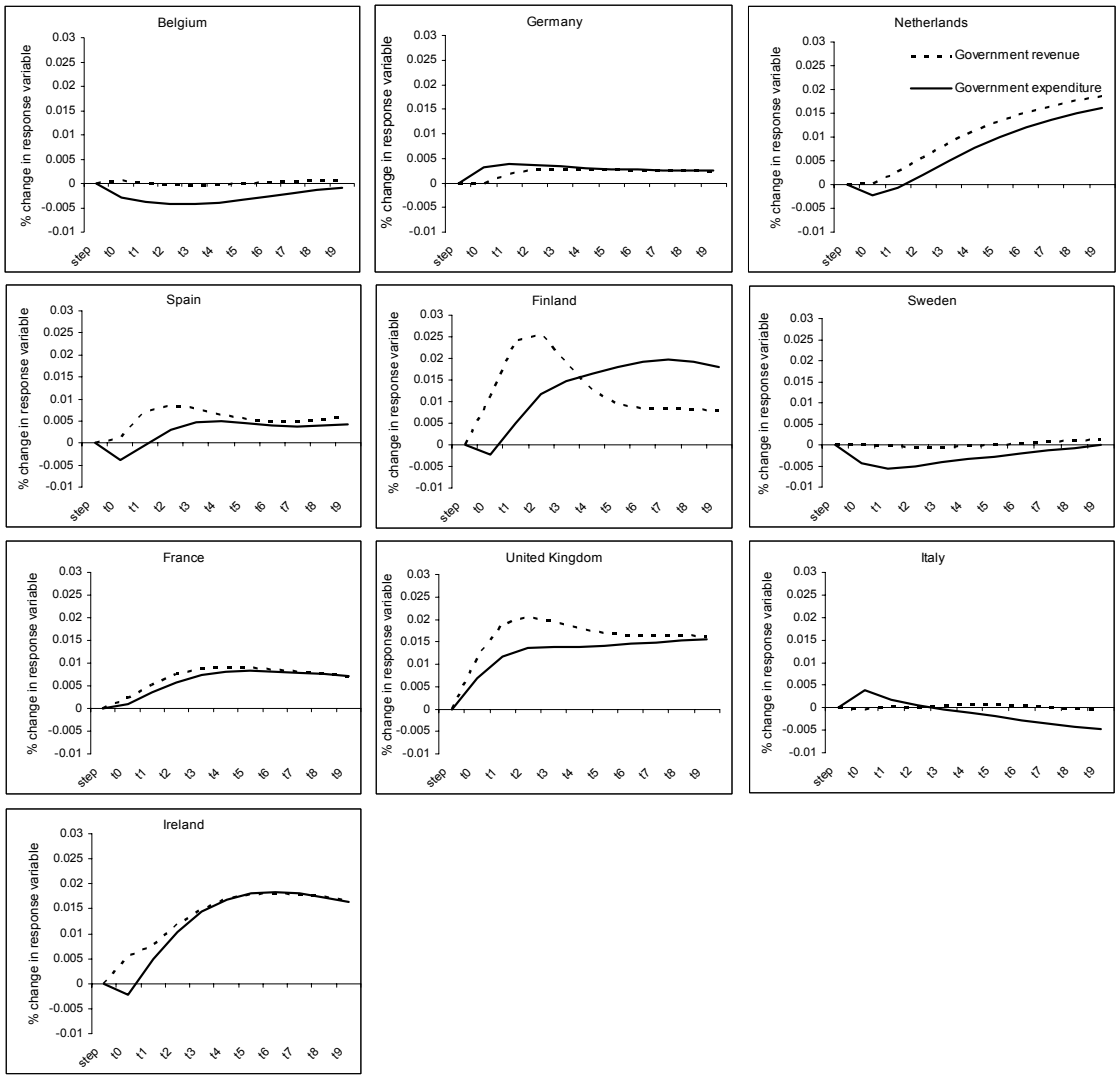
In six out of ten cases, government revenues and expenditure tend to react significantly to changes in house prices. For Finland for instance, government revenue level increase peaks at 2.5 percentage points three years after a shock of 1 percentage point to house prices and stabilises somewhat below 1 percentage point during the rest of the period. A similar increase is observed for the Netherlands, where the increase in government revenues extends beyond the ten-year span. Ireland, the UK and to some extent Spain and France are also shown to experience sizeable increases in both government revenues and expenditures.

Government revenues tend to react more swiftly than government expenditure and in a more pronounced way to a positive shock in house prices. In most cases a house price shock gives rise to a government revenue increase which stays higher than the corresponding government expenditure increase for about two or three years as in the cases of Spain, Ireland, the UK and Finland. Asset price appreciations lead to direct extra government revenues through taxes on transactions in the housing market and indirect effects linked to increases in consumption. In most cases government expenditures catch-up with government revenues suggesting that the potential improvements in the budget balance due to house

([150]) Government expenditure and revenues, house prices, equity prices, REER and total credit are expressed in log. The REER is calculated using unit labour costs.

([151]) Dicky-Fuller tests were used to check for the existence of a unit root for all the variables. Accordingly, the (log) level value was retained for the two fiscal variables and first differences were used for the real effective exchange rate, property prices, equity prices and credit to the private sector. A Cholesky decomposition was used to orthogonalize the error used in the ordering of the variables. The number of lags was set after testing the most appropriate lag structure using a battery of testing procedures: the final prediction error, the Aikake information criterion, the Schwarz's Bayesian information criterion, the Hannan and the Quinn information criterion together with a Likelihood-ratio test for all the full VARs. In most cases one lag was the preferred structure such that this was used across all countries for consistency. The data are taken from the following sources: GDP growth rate, governments' revenue, governments' expenditure and real effective exchange rates (European Commission, DG Ecfin, Ameco), property and equity prices (Bank for International Settlements) and credit to the private sector (Reuters).

Graph IV.2.6: **Impulse-response function: government revenues and expenditure vs house price changes**



Notes: Time indicated in years. Shock given to house prices equal to 1%.
Source: Commission services

price appreciation are only temporary. In the case of Finland the results suggest that with the increase in house prices, government expenditure eventually increased more than government revenues in the medium run leading to a deterioration of government budget balance.

The VAR models can also be used to analyse the link between variables that may fuel the interaction between house prices and fiscal variables and thus possibly illustrate the mechanisms at play. Specifically, these interactions can be illustrated by exogenising one of the variables that may play a role in explaining the effect of the impulse variable (i.e. house price) on the response variables (i.e. government revenues and expenditure). The change in the shape of the impulse-response functions would in turn indicate whether the exogeneised variable plays a role in transmitting house price shocks to fiscal variables.

A number of potential candidates stand out when accounting for the link between house prices and fiscal variables. The first one is the credit channel as suggested by Bayoumi (2004). Increased collateral prices render access to credit easier for credit- constrained households and companies (such as SMEs). House price evolutions may thus have important implications for consumption, investment, GDP growth rate and hence

government revenues. Positive anticipations regarding future prices may give rise to bubbles which would eventually trigger severe corrections once anticipations are revised downward.

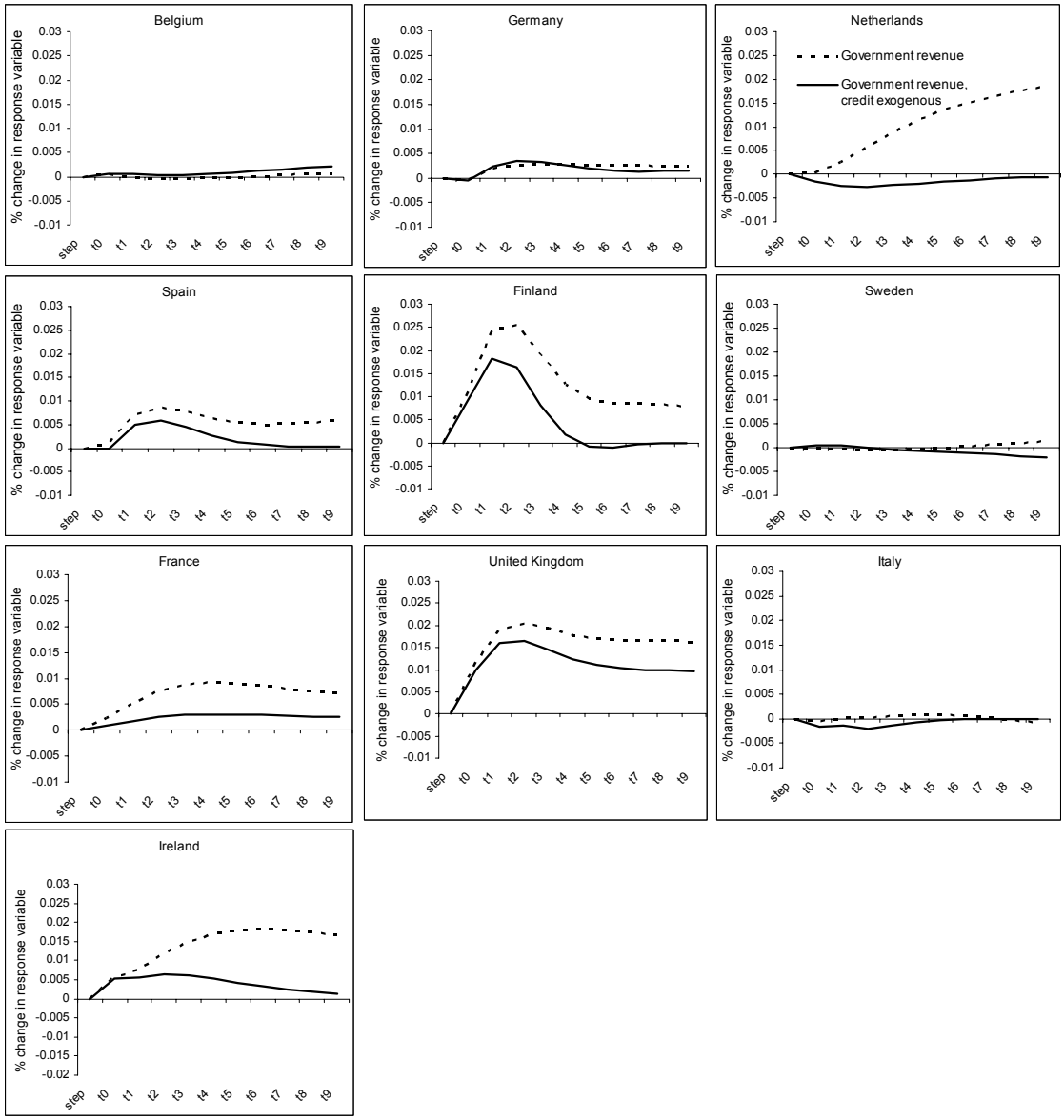
The advent of EMU may have also played a role in the relationship between house prices and government revenues with the elimination of exchange risk premia and the ensuing de-linking of investment from domestic savings. A number of EU countries have also experienced marked appreciation of the real exchange rate reflecting higher domestic inflation and more dynamic demand, influencing indirectly the link between asset price evolution and fiscal variables. These different hypotheses were tested by considering consecutively the level of total credit, the dummy variable for the advent of the EMU and the real exchange rate.

Results indicate that the credit channel is by far the most influential variable while EMU and the real exchange rate played only a minor role. The importance of the credit channel in transmitting house price fluctuations to total government revenues is illustrated in Graph IV.2.7 which reports the results of an impulse of one percentage point in house prices on the level of government revenues by country with the credit channel taken exogenous. The cases of the Netherlands and Ireland are particularly telling as the simulation of a one percentage point shock to house prices has no apparent effect on the level of government revenues once the credit channel is accounted for. In the cases of Spain and France the response of government revenues is also substantially reduced after controlling for the level of credit in the economy. While in the UK and Finland these changes are also observed, they remain less pronounced as the response of government revenues still remains high even after controlling for the level of credit suggesting that in these countries other factors were at play explaining the incidence of house price shocks on government revenues.

2.3. A CLOSER LOOK AT TAX REVENUE WINDFALLS/SHORTFALLS

A more complete analysis of the link between imbalances and fiscal outcomes can be performed using regression analysis. Box IV.2.1 provides an econometric analysis of the determinants of governments' revenue surprises for the euro area countries following the approach described in Barrios and Rizza (2008) and considering together both internal and external imbalances. According to the results depicted in Box IV.2.1, the main determinants of revenue windfalls/shortfalls are growth surprises, i.e. errors made by governments in their assessment of the cyclical position. Changes in the trade balance also appear to have a significant impact on government revenue windfalls/shortfalls on average. The estimation results also suggest that a deterioration of trade balance *ceteris paribus* yields also extra-tax revenues. EU countries with dynamic internal demand experienced strong revenue growth and sharp deterioration of their external trade balance as evidenced already in Section IV.1. House prices developments appear also to play a significant role in only some countries, in particular Ireland, Spain and the UK where their impact is found to be remarkably high.

Graph IV.2.7: **Impulse-response function: government revenues vs house price changes with credit exogenous**



Notes: Time indicated in years. Shock given to house prices equal to 1%.
Source: Commission services

In countries with buoyant housing markets during the 2000s, the rising in house prices was accompanied by growth exceeding expectations so that it is difficult to disentangle the separate effect of these two variables on government revenues. Countries that have experienced large revenue windfalls and house prices increases seem to have also benefited from especially dynamic internal demand, thus favouring the emergence of large current account deficits.

A recent study by the European Commission (2009) in particular suggests that house price increases in the EU, and especially so in the euro area, have gone hand in hand with dynamic demand and shifting of labour to non-tradable sectors, in particular the construction sector. This supply side effect may have been favoured by a structural feature of some EU economies, where building constraints were high before the emergence of the housing bubble (see in particular Bover and Jimeno, 2007).

Box IV.2.1: Determinants of revenue windfalls/shortfalls in the EU

This box presents a panel analysis of the determinants of revenue windfalls/shortfalls for the euro area countries during the period 1999-2007 following the approach of Barrios and Rizza (2008). These determinants include growth surprises, a composition effect measuring the influence of differences in growth between the different tax bases and GDP, two indicators on asset prices annual changes (equity and house prices), oil prices annual variation and the annual change in the trade balance. Annex IV provides more details on the construction of these variables and statistical sources used. The following equation is estimated econometrically. The revenue/shortfall variable is defined as in Section IV. 2.1. The effects of these determinants are shown in the table below which sums up the estimation results using a fixed effects estimation technique in order to control for non-observed country-specific effects.

Table 1: The determinants of governments' revenues windfalls/shortfalls in the EU

	(i)	*(ii)*	*(iii)*	(iv)
(1) growth surprise in % point	0.722***	0.849***	0.618***	0.661***
	(0.136)	(0.235)	-0.166	-0.149
(2) Composition effects		-0.387		
		(0.806)		
(3) change in (export- import)/gdp			-0.496**	-0.375***
			(0.189)	(0.173)
(4) change brent_euro			1.681*	1.734**
			(0.922)	(0.913)
(5) change in housing prices			4.674	0.749
			(5.727)	(5.225)
(6) change in equity prices			1.733	0.959
			(1.164)	(1.061)
(5) change in housing prices * booming countries				28.329***
				-6.486
Constant	0.938***	0.673**	-0.123	-0.972*
	(0.233)	(0.258)	(0.521)	(0.507)
Observations	154	126	92	92
Number of group(country)	25	21	11	11
R-squared	0.18	0.21	0.47	0.31
F test for fixed effects	1.75	1.4	1.39	3.4
p-value for F-test	[0.02]	[0.15]	[0.20]	[0.00]
H0: αi = 0				

** significant at 10%; ** significant at 5%; *** significant at 1%*

Standard errors in parentheses

The first column of the table provides the results of the estimation using only the growth surprise as an explanatory variable. This variable appears to be positively related to the revenue windfalls and is highly statistically significant. Column (ii) adds the composition effect calculated as indicated in Annex IV. This variable does not appear to display a significant coefficient, however. Column (iii) adds instead annual changes in trade balance, oil prices, housing prices and equity prices. Given that they are only available for few European countries, most notably EU15 countries, the sample is much reduced. The trade and oil variables display the expected coefficient and are both statistically significant. The result concerning residential and equity prices appears rather puzzling at first glance given that recent revenues windfalls/shortfalls have often been associated with booming tax revenues related to asset prices. Two remarks must be made with regard to this result. First, the length of the panel (i.e. 1999-2007) might be insufficient to properly capture the impact of house price changes on government revenues. Second, the estimates provided above represent only an average effect across countries. In fact, detailed inspection of the evolution of asset prices reveals that, during the period considered, Ireland, Spain and the UK experienced particularly sharp price increases. One way to test whether these evolutions had any significant impact on revenue windfalls for the countries in question is to interact a dummy variable for the three countries with the evolution of asset prices. The results of estimating this new variable are displayed in Column (iv). The coefficient obtained on the interaction between the country dummy (equal to 1 for IE, ES and UK) and the asset price is very high and statistically significant, indicating that for these three countries the recent boom in asset prices had a positive influence on windfalls.

House price increases would have thus favoured the emergence of large current account deficits in certain EU countries both through a demand and a supply-side effect. With the sharp contraction in economic activity foreseen in 2009, the burst of housing price bubble and fast declining oil and asset prices in particular, suggest that the recent occurrence of government revenues shortfalls evidenced in Graph IV.2.2 may thus be long-lasting and be directly affected by the adjustment process of countries where internal demand and

construction sector expansion have been the most dynamic.

The evidence presented above tends to suggest that the effects of internal and external imbalances on public finances are strongly interconnected. These links are complex, however, and a closer inspection of the mechanisms at hand is warranted in order to derive policy implications. The following section aims at illustrating these mechanisms using the Commission services' QUEST III model with credit-constrained households.

2.4. MODEL SIMULATIONS WITH QUEST III ([152])

2.4.1. Main elements analysed in the model and features of the simulation.

The QUEST III model is used to analyse the role of fiscal policy in the context of building-up of imbalances in a representative small euro area Member States. Some key characteristics of pre-financial crisis developments, i.e. an asset price bubble, widening current account imbalances and favourable public finances outcomes (tax revenue windfalls) are replicated. The focus is on the effect of different fiscal policy rules and shocks on the government budget balance, government debt, output growth and external imbalances. The effects of fiscal policy are analysed by assessing different fiscal response functions for expenditure reflecting different assumptions on the degree of temporariness of revenues and different degrees of caution. Revenue deviations from baseline may reflect structural shocks or temporary developments reflected in asset price booms, swings in current accounts, persistent deviation of inflation and wage growth from competitors in the euro area and in countries with fixed exchange rate regimes.

2.4.2. Description of the shock

For illustrative purposes, a housing price bubble is simulated by shocking the housing risk premium so that housing prices rise more than 40% above their baseline level. In the fourth year the bubble bursts when the risk premium remerges. In somewhat more than three years the housing prices return to baseline.

To allow a more sustained deviation of output from baseline, a shock is given to labour supply. ([153]) Labour supply is positively shocked during the bubble. This coincides with the observation of immigration in e.g. Ireland and Spain. After the burst of the bubble, the labour supply shock is reversed, reflecting in particular emigration of migrant workers as labour demand falls during the bust. This requires eventually adjustment of the government expenditure path to lower revenues.

Three different stylised fiscal policy scenarios are presented in Graph IV.2.8. The corresponding budgetary rules acting on government consumption rules are applied consistently, both during the boom and the bust. In Section IV.3 alternative fiscal policies during the bust are simulated.

The first expenditure policy rule reflects an unchanged budget balance. It is pro-cyclical in the sense that windfall revenues during the boom are spent and revenue shortfalls during the bust are compensated by a reduction in government consumption. It implies a deteriorating (primary) cyclically-adjusted balance during the boom and an improvement during the bust. Note that the balanced-budget condition is unlikely to hold in a very severe downturn. It can only reasonably be expected to hold in case limited fiscal space forces policy makers into very strong pro-cyclical fiscal tightening to avoid macro-financial stress.

The second policy rule mimics a neutral fiscal policy scenario, so that the budget balance deteriorates broadly in line with the size of the automatic stabilisers. This implies that any

([152]) The QUEST III model is a multi-region dynamic stochastic general equilibrium (DGSE) model used by the European Commission for economic policy analysis. It is described in detail in Ratto, Roeger and In 't Veld (2009). The version used here contains credit and liquidity constrained consumers. It is described in Roeger and In 't Veld (2009).

([153]) Without structural shocks, the forward-looking rational expectations in the model do not allow sizeable and/or sustained endogenous deviations of prices and real variables from baseline, both in booms and busts.

possible additional windfall revenues not captured by the automatic stabilisers would be spent.

The third policy rule reflects counter-cyclical budgetary policy as the government consumption-to-GDP ratio is reduced during the boom and increases during the bust. This implies a substantial improvement of the cyclically-adjusted balance during the boom period. It reflects not only the full working of the automatic stabilisers, but e.g. also savings of revenue windfalls and/or cautious assumptions on the structural nature of revenues.

In these simulations, the fiscal policy stance during the building-up of the bubble has implications for the GDP growth path. In particular, in the boom period, the difference in growth between pro- and counter-cyclical fiscal policy is limited due to strong crowding-out of private consumption and a deteriorating current account with pro-cyclical fiscal policy. This implies that the model does not indicate strong self-reinforcing effects of expansionary fiscal policy through lowering real interest rates during the boom. ([154]) If the expenditure rules are unchanged throughout the boom and bust, the trough of GDP growth in the bust is much shallower with the neutral or countercyclical fiscal policy than with an unchanged budget balance. Deviations of GDP growth from baseline in the medium run reflect the given supply shock as well as prospective government debt developments crowding out consumption and investment.

Fiscal policy has an important effect on the current account balances in this simulation. Pro-cyclical fiscal policy with an unchanged budget balance during the boom leads to a sharp deterioration, while countercyclical policy keeps the current account balance close to baseline. After a rapid reversal due to domestic demand contraction and some slight improvement in the export performance, the current account balance reverts to baseline. Note that this baseline can reflect either a deficit or a surplus position depending on the country's characteristics (e.g. preferences as regards savings, net foreign assets or investment opportunities, etc.)

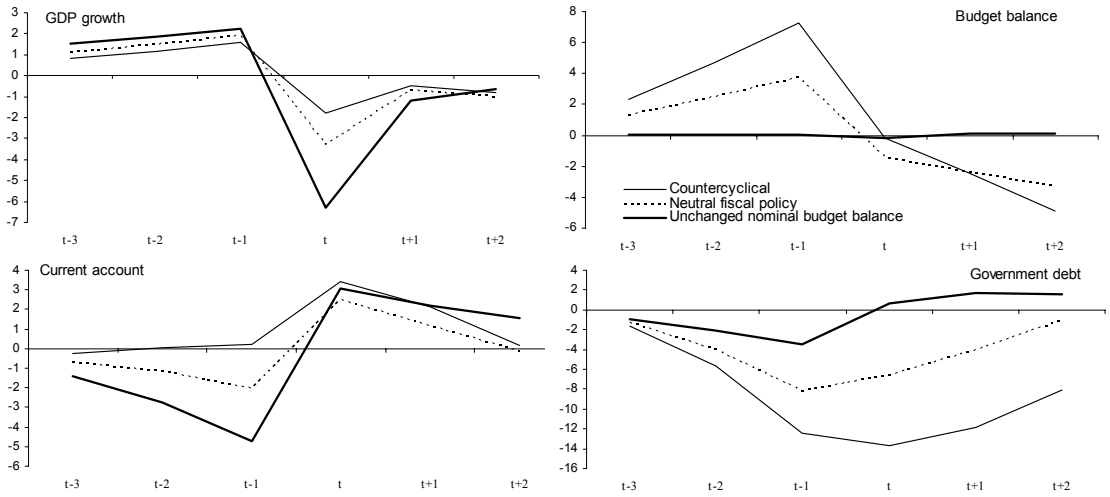
The debt-to-GDP ratio first declines for all policy rules, as output rises above baseline. As the budget balance improves in the scenarios with neutral and countercyclical fiscal policy, the decline in the debt-to-GDP ratio is much stronger than in the balanced budget scenario. The drop in output reverses this trend. The deterioration of the debt-to-GDP ratio is limited in the pro-cyclical scenario with an unchanged budget balance such that it matches the debt-to-GDP ratio of the countercyclical scenario three years after the bust.

To achieve a countercyclical effect during the boom period, a cautious rule-based expenditure path may be more effective than actual discretionary tightening measures considering the long policy lags. These caveats may play a less important role during the bust, especially in the current context, as output may remain below potential for a number of years and policy lags may be smaller during crisis periods. The simulations thus allow analysing the impact of fiscal policy on the current account and GDP growth in the immediate aftermath of the crisis, as well as the developments of government debt in the medium run with different assumptions of reversibility of the measures.

These simulations indicate that prudent fiscal policy during the good times can play an important role in containing the output drop following a boom. The latter is especially true in countries that have limited fiscal space that would prevent countercyclical policies or require procyclical tightening during the bust.

([154]) However, in the presence of market distortions, less rational and less forward-looking agents, fiscal-policy intervention could potentially promote a return to sustainable paths if self-reinforcing dynamics lead to overheating. A restrictive policy would be suitable for large current account deficits caused by overheating; an expansionary policy may help to jump-start an economy experiencing disinflation despite trade and current account surpluses. In practice, the characterization of accommodative and restrictive fiscal policies is tricky, especially during long phases of excess demand or inadequate demand. It is then notoriously difficult to measure potential output and growth. The reason is that the effects of automatic stabilizers - namely, the cyclical improvement of public finances in economic upswings - can conceal pro-cyclical discretionary policies or insufficiently counter-cyclical policies.

Graph IV.2.8: **Fiscal policy in the context of building-up of imbalances in a representative small euro area Member State (% of potential GDP)**



Notes: Time indicated in years.
Source: Commission services based on QUESTIII model.

3. PUBLIC FINANCES DURING THE BUST

Sections IV.1 and IV.2 illustrated the recent evolution of asset prices and credit and their impact on public finances in the EU over the past decade. The outbreak of the financial crisis initiated a reversal of these apparently favourable developments. Public finances have been affected directly through sharply declining tax revenues from the second half of 2008 and the increase in public spending through the play of automatic stabilisers and, later, the active fiscal policies deployed under the European Economic Recovery Programme. Distressed banking systems have also increased the toll on public finances via financial support to the financial sector and indirectly through increased contingent liabilities linked to mounting implicit and explicit government liabilities. The reversal of the credit and property booms might also have an impact on budgetary developments over the medium term. The anticipation of these developments affects fiscal space at present and thus risk premia on sovereign borrowing. In turn, this affects the role that fiscal policy can play in reducing the output costs of the financial crisis.

The section presents a composite indicator of fiscal space for EU countries that reflects the importance of external and internal imbalances for budgetary policies over a medium-term horizon. Together with the economic conditions, a country's fiscal space determines the appropriate fiscal policy response to the crisis and during the adjustment to imbalances. Then, illustrative simulations are run highlighting how differences in fiscal space -that could translate into fluctuations in sovereign and country-wide risk premia– affect the impact of fiscal policy on output stabilisation. The simulations are carried out using the QUEST III model in order to analyse the link between fiscal policy and macroeconomic outcome following a macroeconomic shock represented by a burst of a housing bubble.

3.1. THE FISCAL POLICY RESPONSE TO THE FINANCIAL CRISIS: FISCAL SPACE MATTERS

The level of government debt and deficit prior to the downturn determine importantly the ability to conduct countercyclical policy. A number of other factors are likely to impinge on the ability of countries to react to the negative impact of financial crisis such as the level of contingent liabilities of the financial sector, the current account deficit which signals the ability of countries to meet their commitment with potential foreign owners of domestic debt, etc. Each of these factors contributes to the exposure of a given country to the risk of failing to meet fiscal policy objectives. ([155]) These elements can be encapsulated in the concept of fiscal space, i.e., according to Heller (2005) the *"room in a government´s budget that allows it to provide resources for a desired purpose without jeopardizing the sustainability of its financial position or the stability of the economy."* Although initially developed for emerging economies, the concept of fiscal space proves to be particularly useful in the present context. In the current context, the concept of fiscal space can in particular help assessing whether EU countries have the ability to run countercyclical fiscal policies without compromising the medium- and long-run sustainability of their public finances. EU governments need to ensure that fiscal stimulus does not compromise their ability to finance expenditure from future revenues and thus, do not weigh too heavily on future growth. If debt-financed, expenditure should be assessed by reference to its effects on the underlying growth rate and the country's revenue-generating capacity.

This section presents a measurement of fiscal space based on a composite indicator. The indicator presented in this note may be particularly useful in the current context of uncertainty, where the flexibility of the Stability and Growth Pact is used to the fullest extent and the standard benchmarks for assessing Member States' room for fiscal manoeuvre (MTOs, minimum benchmarks and 3% threshold) are temporarily but effectively being superseded by broader considerations of fiscal space.

The fiscal space composite indicator includes five elements. The first aspect concerns (i) general government gross debt. A differentiation on the basis of debt level that determine Member States' ability to cater for liabilities is also included with (ii) potential government contingent liabilities to

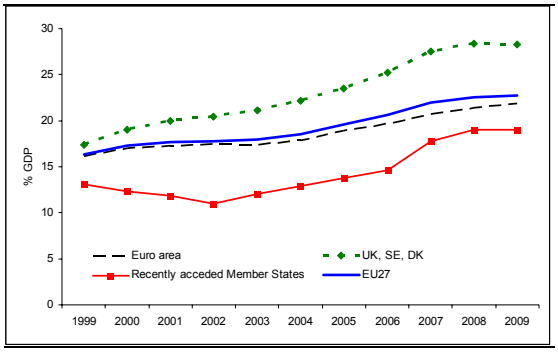
([155]) See in particular Hemming and Petrie (2000).

the financial sector. Standard fiscal indicators can give misleading signals in a context of protracted competitiveness swings. Revenue buoyancy during periods of deteriorating competitiveness and asset price booms should not be misinterpreted as durable improvements in the underlying budget position. ([156]) The composite indicator considers (partly) these distortions by adding (iii) estimates of foreseeable revenue shortfalls in the medium run and including (iv) the current account balance as an indicator of external imbalances. Government potential constraints with regards to the increase in public expenditure in the short run is further represented by (v) the share of non-discretionary expenses which is a proxy for the vulnerability of public expenses to meet short-run obligations such as interest payment on public debt and public pensions. ([157])

Contingent liabilities have increased as a result of EU governments' interventions to support distressed banking sector. Large increases in government debt and payments may indeed emerge from explicit and implicit government guarantees on banks loans and deposits. Governments' implicit and explicit guarantees to private investment may in turn feed into greater exposure through moral hazard and thus amplify the risk of an over-exposure of public finances to private liabilities. ([158]) Even if public debt is relatively low, the materialisation of contingent liabilities may weigh heavily on future debt developments. Contingent government liabilities need thus to be considered in order to assess the risk of financial crises for public finances, beyond public debt and deficit figures. ([159])

Graph IV.3.1. below reports the evolution of implicit liabilities related to the banking sector in the EU since 1999 using data from Standard & Poor's. Annex IV.1 provides more details on the calculation of this indicator. ([160]) The level of contingent liabilities has increased markedly since 2005 in most EU countries, including both euro area and non-euro area EU15 countries. At country-level, the increase was especially pronounced for small countries; in particular in Cyprus (from 68.6 of GDP in 1999 to 119.2% in 2009), Luxembourg (from 62.4% to 90.7%), Portugal (from 23.5% to 39.1%) and Slovenia (from 9.9% to 28.1%).

Graph IV.3.1: **Government contingent liabilities related to the banking sector in the EU, 1999-2009**



Source: Standard&Poors and Commission services

Annex IV.1 provides the definition and source of the above individual indicators while Annex IV.2 provides the method used to construct the fiscal space indicator summarising the information contained therein. The fiscal space indicator is calculated the annual (unweighted) average of variables (i)-(v) for the period 1999-2009. This is the longest time span that can be considered given data availability. ([161]) The value of the indicator varies between +30 and -30, positive values

([156]) In a context of domestically-led growth with strong wage growth and inflation, tax elasticities are usually exceptionally high due to composition effects and property price booms. In addition, part of the increase in nominal tax revenues may be temporary if competitiveness needs to be restored through relative price and wage declines. As a result, measures of the structural balance and debt to GDP improve strongly, while in fact, the competitiveness loss could impinge on the ability to maintain sound fiscal positions in the long run if future wage and price adjustment is necessary.

([157]) See in particular Hemming and Perrie (2000).

([158]) See for instance, Corsetti et al. (1999) for an analysis in the context of the 1990s Asian crisis.

([159]) For a comprehensive review of the fiscal risks linked to implicit liabilities, see Polackova and Schick (2002).

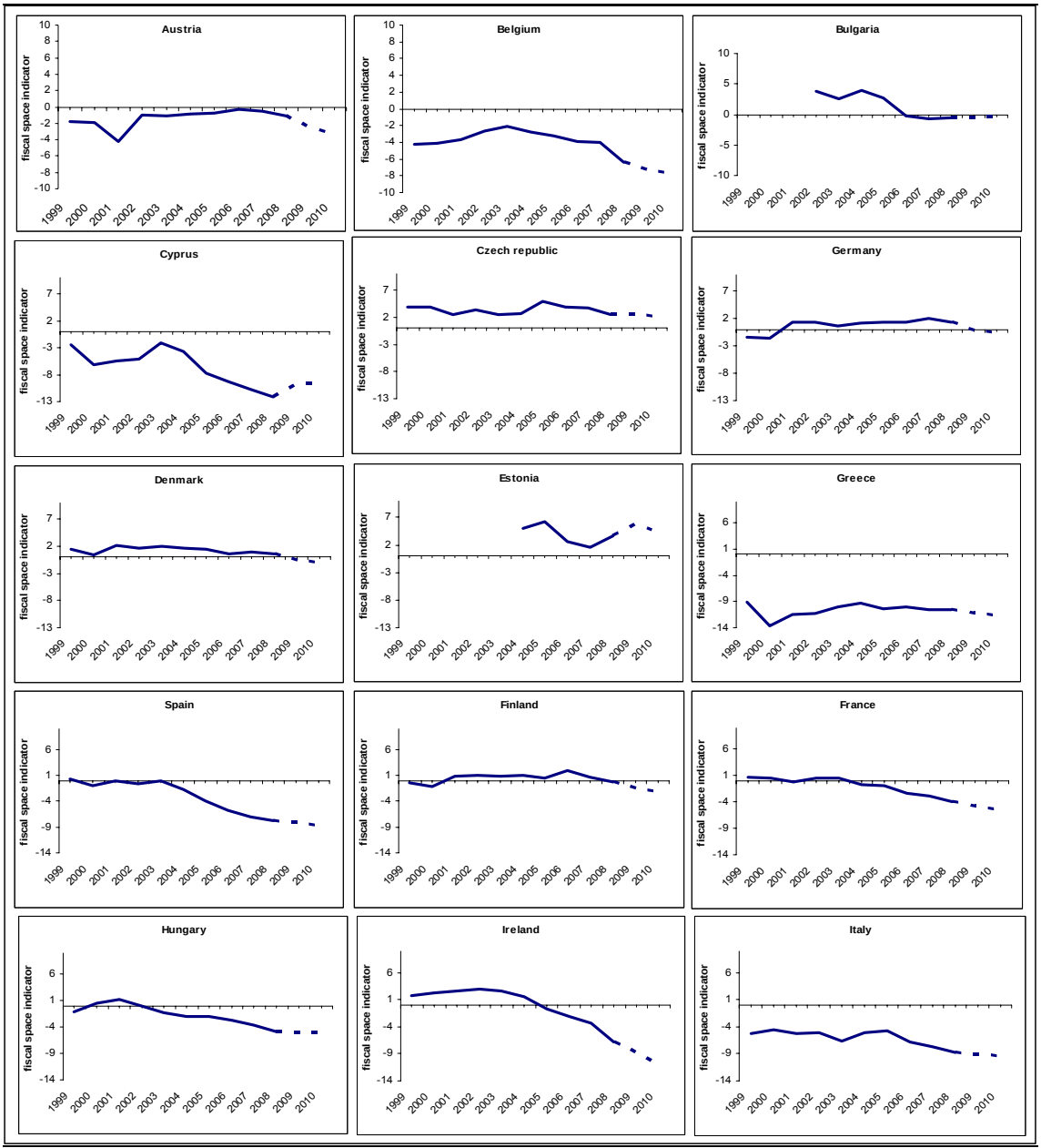
([160]) See also Standard & Poor's (2002) for detailed analysis of contingent liabilities in the European banking sector.

([161]) In an alternative version of the fiscal space indicator a variable measuring the medium-term primary balance gap (relative to the debt-stabilising level and including pre-financing of additional cost of ageing up to 2020 has also been included, based on the methodology described in European Commission, 2006). The fiscal space indicator presented here does not include this variable, however, given that it primarily focuses on charting the evolution of fiscal space in EU countries, while the sustainability indicator is only available at three-year intervals, in line with the updating of projections for age-related expenditures.

indicating good performance. Importantly, the benchmark used to assess countries' evolution is based on the EU average composite indicator at the beginning of the period, i.e., in 1999, thereby allowing to chart the evolution of EU countries' fiscal space over the past ten years.

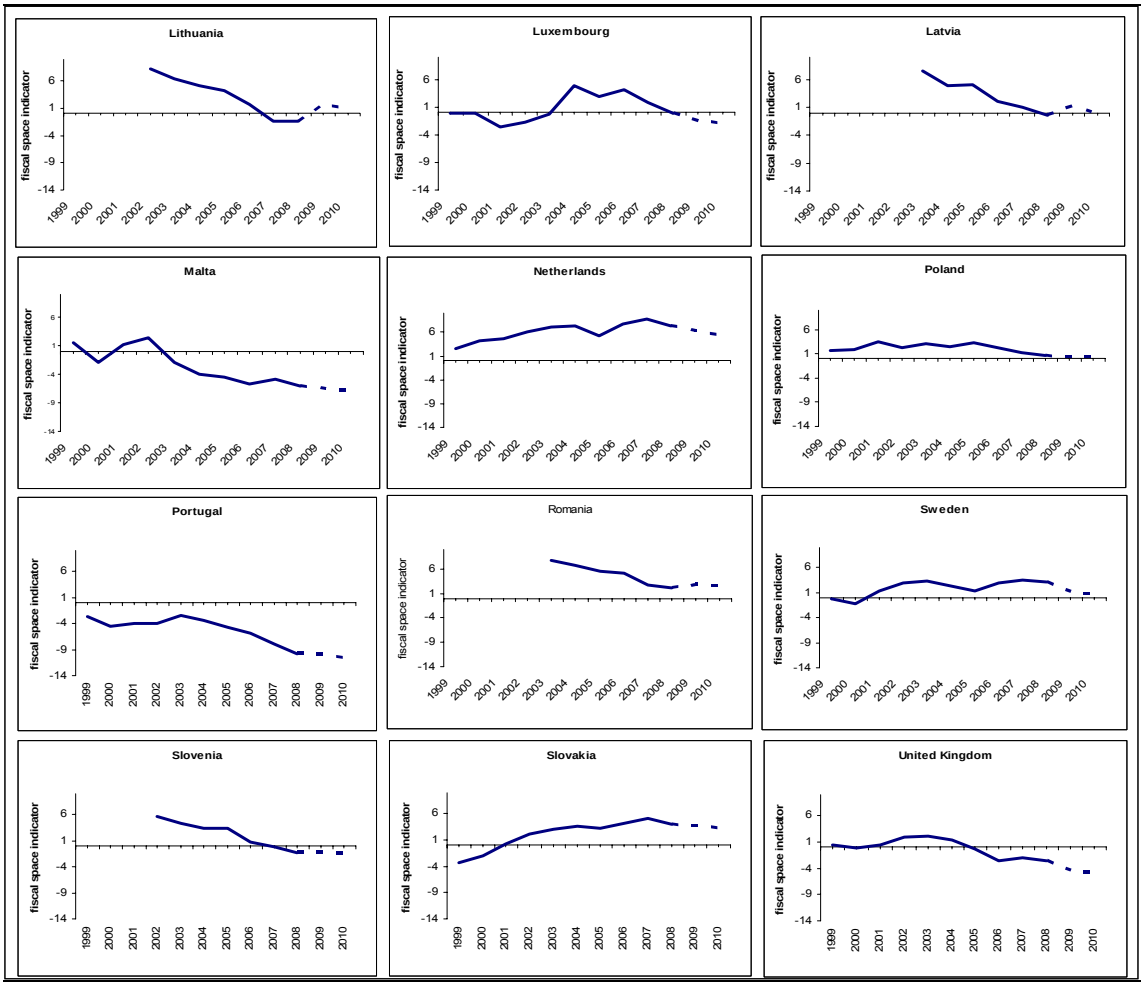
The results presented in Graphs IV.3.2 indicate that fiscal space varies widely across countries. However, in all countries fiscal space deteriorates over time. In a large majority of cases, this trend started long before the outbreak of the financial crisis in the EU in 2008. This is particularly true for Ireland, Spain, the UK and Hungary, which, at least until 2004-2005, had relatively favourable positions compared to the rest of the EU but experienced rather sharp falls. A similar and even more pronounced deterioration can be observed for Malta, Latvia and Lithuania. Very few countries have managed to maintain a relatively favourable fiscal space (e.g. Finland, Poland, Sweden, the Netherlands, the Czech Republic and Slovakia). Italy, Belgium, Cyprus, Greece and Portugal, which started from relatively unfavourable positions, have seen their fiscal space shrink rather rapidly since 2005. The estimations made for the most recent years 2008 and 2009 (based on The Commission services Spring 2009 forecast) signal further deterioration in countries' fiscal space suggesting that the scope for active fiscal policies would strongly be constrained in most Member States.

Graph IV.3.2: **Shrinking fiscal space in the EU**



Notes: Annex IV.2 provides details on the calculations of the fiscal space indicator.
Source: Commission services

(Graph IV.3.2. continued)



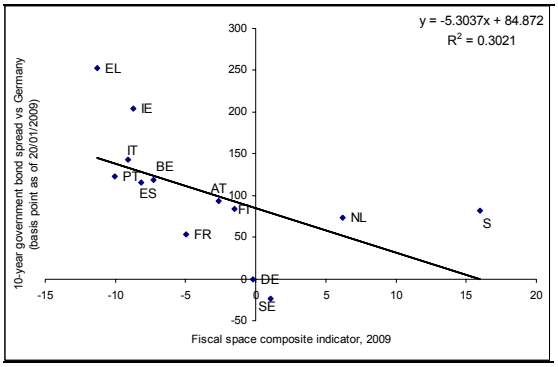
Source: Commission services.

3.2. FISCAL SPACE AND SOVEREIGN BOND SPREADS

Changes in government bond spreads arguably reflect overall market perceptions of EU countries relative fiscal space. Graph IV.3.43 shows the correlation between the fiscal space and the spread of the 10-year government bonds over the German bonds for the EU countries. ([162]) The relation between these two variables is clearly negative. Deviations from the fitted values may be partly stemming from liquidity premia, as the total outstanding amount of debt is lower for smaller Member States. In particular in France, Germany and Italy interest rates on sovereign bonds benefit from the liquidity of the bond market, while the opposite effect plays in smaller Member States with low debt. The Netherlands, Sweden, Denmark and Finland appear to be in the most favourable position with regards to fiscal space but pay some liquidity premium.

([162]) Bond yields data as of the 20/01/2009.

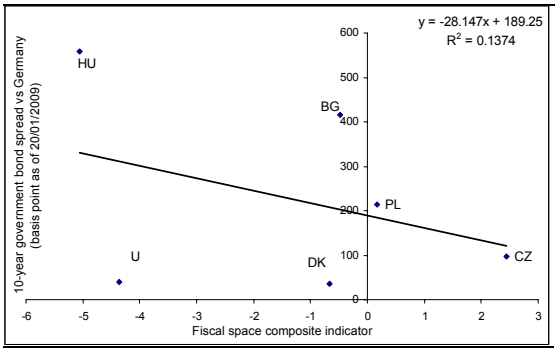
Graph IV.3.3: **Fiscal space and government bond spreads in the euro area**



(1) Details about the fiscal space indicator provided in Annex IV.2.
Source: Commission services

Importantly, for non-euro area countries, such as Denmark, Sweden and the UK, government bond spreads also reflect exchange rate risks, which makes a comparison with euro area countries problematic. Also the perceived risk of default on sovereign debt may be correlated with the exchange rate risk. This may concern especially recently acceded Member States. Graph IV.3.4 provides a similar plot for the non euro area countries for which comparable data on spreads and fiscal space are available. Although the limited number of observations prevents any conclusive statements on the relationship between fiscal space and spreads, the countries considered also show a negative correlation between fiscal space and spreads. It must be said, however, that the relationship between fiscal space and government bond spreads is less clear-cut in the non-euro area compared to the euro area case.

Graph IV.3.4: **Fiscal space and government bond spreads in non euro-area countries**



(1) Details on the fiscal space composite indicator given in Annex IV.2.
Source: Commission services

3.3. FISCAL STIMULUS WITH LIMITED FISCAL SPACE: SIMULATION RESULTS WITH THE QUESTIII MODEL

In the aftermath of the financial crisis, fiscal stimulus is widely used to reduce the depth of the downturn. The impact of fiscal stimulus depends crucially on whether it is credibly temporary or perceived to be permanent. In the latter case, economic agents would anticipate higher tax liabilities and –in case of limited fiscal space- risks to macrofinancial stability, increasing savings and demanding risk premia, leading to stronger crowding out and a smaller GDP effect. Therefore, in countries with limited fiscal space it is particularly important that the stimulus should not be perceived as permanent so as to avoid adverse reactions in debt markets. Convincing economic agents of the temporary nature of the fiscal stimulus is not straightforward, especially as history does not speak in favour of most governments' capacity to rapidly reverse stimulus.

This section shows simulations for the effect of a fiscal stimulus that is not perceived to be temporary. Economic agents anticipate that the stimulus measures will not be discontinued after one or two years. This may be due to concerns about the political incentives and track record of the government, in relation to the expected state of the economy. In case of a protracted period of very low growth, policy makes may be reluctant to discontinue fiscal measures as announced if the economy remains weak.

Graph IV.3.5 shows four different GDP paths following a 1% of GDP government expenditure shock in the QUESTIII model: ([163])

(i) A short-term fiscal multiplier of close to 1.5 is obtained in case of a credible temporary shock reversed after one year. The model does not give any negative long-run effects due to the assumed accompanying monetary accommodation.

(ii) If the shock is permanent instead, the short-term multiplier drops to less then 0.4. The

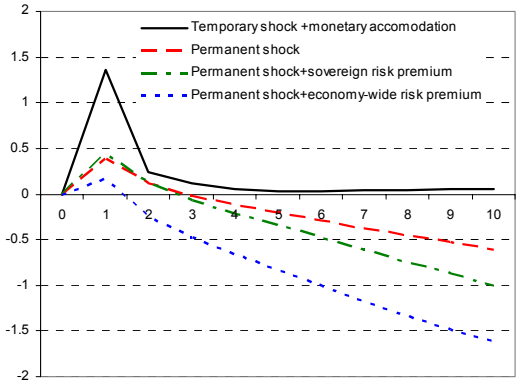
([163]) The simulations assume the monetary accommodation of the shock (i.e. keeping the nominal interest rate unchanged), which in the aftermath of the financial crisis seems a reasonable assumption. The initial level of government debt is 60% of GDP.

increase in debt and the higher future taxes lead to output loss of 0.6% of GDP after ten years.

(iii) If the shock is permanent and there is limited fiscal space leading to an increase in the sovereign risk premium by 100 basis points, the output loss after 10 years is 0.4% of GDP higher due to the further increase in taxes required by the still higher debt.([164]) Surprisingly, the short-term multiplier –at just above 0.4- is fractionally higher than without the risk premium, due to the marginal effects of the interest payments on consumers disposable income. ([165])

(iv) Adding an economy-wide risk premium of 25 basis points lowers GDP further in the short and long run. The short-run multiplier is only marginally above zero, while after ten years, output is more than 1.5% of GDP below baseline. There is some empirical evidence that private sector risk premia are correlated to the sovereign risk premium. ([166])([167])

Graph IV.3.5: **Fiscal stimulus and risk premia (% of GDP)**



Notes: Time indicated in years.
Source: Commission services based on QUESTIII model.

This simulation shows that the effect of a fiscal stimulus – even if consisting of government expenditure with a direct impact on demand and GDP - could easily turn negative in vulnerable countries with limited fiscal space. The simulations indicate that an increase of the risk premium on sovereign debt significantly reduces the fiscal multiplier in high-debt countries in the medium to long run. An economy-wide increase in risk premia would imply that not only a large part of the fiscal stimulus leaks across borders and through Ricardian behaviour, but the increase in risk premia counteracts the positive effect on output and demand even in the short term.

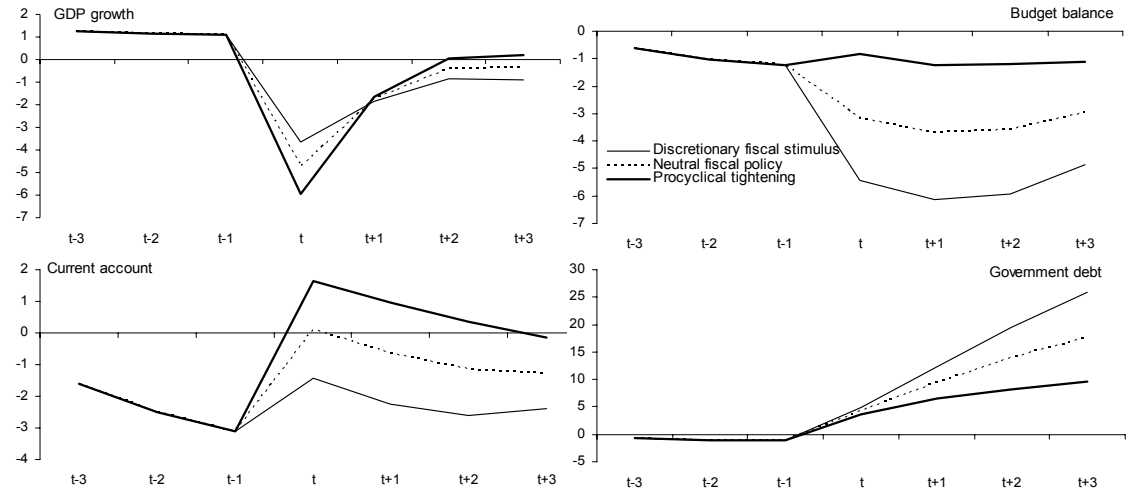
3.4. FISCAL POLICY DURING THE BUST: THE ROLE OF FISCAL SPACE

In this section the QUEST III model is used to analyse the effects of different fiscal policy stances as the economy experiences a severe downturn following a boom driven by a property price bubble and an undervalued initial real exchange rate. ([168]) The difference between countries with

([164]) The simulation assumes an initial debt-to-GDP ratio of 60%.
([165]) The model assumes that government debt is refinanced annually which implies that the risk premium feeds through on government interest expenditures within a year, rather than over a number of years. Government debt is assumed to be bought by domestic Ricardian consumers who only increase savings to the extent that it reflects future taxes that they need to pay. The credit- and liquidity-constraint consumers do not adjust their savings.
([166]) See Peter and Grandes (2005).
([167]) Note that when increases in sovereign risk premia represent a transfer of credit risk from the private to the public sector, the correlation between private and sovereign risk premia would be negative (bank rescues and guarantees). See ECB (2009).

([168]) The undervalued real exchange rate has been proxied by a series of shocks to foreign prices rather than a single shock to avoid an excessively rapid adjustment. The shock triggers an increase in wage and price inflation of over 1 percentage point above the baseline, implying a drop in the real interest rate. Imports increase more than exports, leading to a current account deficit. After the bubble bursts current account and real exchange rate adjustment is required. This appears matching the necessary unwinding

Graph IV.3.6: **Quest III simulations of the unwinding of imbalances and fiscal policy: countries with large fiscal space (% of GDP)**



Notes: Time indicated in years.
The graphs show deviations from the baseline (the path without given shocks) which is represented by the horizontal axis.
Source: Commission services based on QUESTIII model.

large and small fiscal space is simulated by changes in country risk premia in response to fiscal policy.

As the financial crisis develops, global demand shortfalls and depreciations of key trading partners affected by the crisis imply a reduction of foreign prices. This can be considered a stylised characterisation of key features of the present financial crisis for some euro-area Member States and EU Member States with fixed exchange rate regimes and currency boards.

The simulations consider a representative small euro-area Member State. Different policy reactions during the bust may be due in particular to (i) uncertainty about the depth of the downturn in real time; (ii) constraints due to limited fiscal space (which in turn is related to the conduct of fiscal policy during the boom period); (iii) preferences as regards fiscal policy intervention; and (iv) uncertainty about the effectiveness of fiscal policy. The starting position is the scenario in which windfall revenues during the boom have been spent and the government debt-to-GDP ratio is at baseline at the start of the downturn, such that the boom has not been used to save for rainy days. During the downturn, several fiscal policy scenarios are presented in Graph IV.3.6.

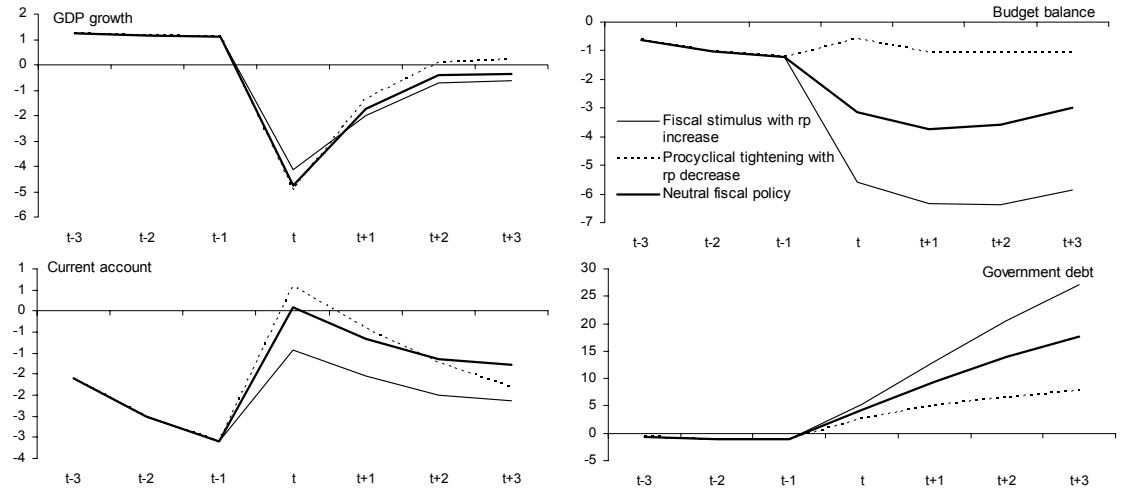
- The first fiscal policy scenario shows a substantial discretionary increase in government consumption by 2.5% of GDP compared to the government consumption before the downturn. In the three following years, the fiscal stimulus is gradually reversed as government consumption returns to baseline. That means that it does not only reverse the discretionary fiscal stimulus of 2.5% of GDP that was given during the downturn, but also the gradual increase in government spending compared to baseline during boom period of 2 % of GDP as windfall revenues were partly spent. ([169])

- The second policy scenario mimics neutral fiscal policy with full working of the automatic stabilisers in t and t+1. In t+2 and t+3, government consumption returns to baseline, i.e. it reverses the 2% of GDP increase in

of imbalances in most EU Member States that have experienced the strongest and most protracted booms. The housing price bubble is simulated by a series of shocks to the risk premium on housing investment that decreases each quarter and than returns to baseline in the 13th quarter. It pushes up property prices (in particular the land component), stimulates housing investment and consumption, through wealth effects and reduced collateral constraints for liquidity constraint households.

([169]) Note that the effectiveness of the stimulus is substantially reduced if the stimulus is perceived to be permanent rather than temporary.

Graph IV.3.7: **Quest III simulations of the unwinding of imbalances and fiscal policy: countries with small fiscal space (% of GDP)**



Notes: Time indicated in years, rp = risk premium.
The graphs show deviations from the baseline (the path without given shocks) which is represented by the horizontal axis.
Source: Commission services based on QUESTIII model

government expenditure that occurred during the boom.

- The third policy scenario is pro-cyclical as the budgetary deterioration due to the automatic stabilisers is countered by a reduction in government consumption and the budget balance is brought back close to baseline from the outbreak of the crisis. This will occur in particular in case fiscal space is depleted due to incautious policies during the boom period.

The simulations indicate that fiscal policy can potentially make a considerable difference in the depth of the downturn, especially in countries with sufficient fiscal space that would not suffer from a substantial increase in country risk premia. Further contracting aggregate demand deepens the downturn in our simulation of an unchanged budget balance by more than 2 percentage points compared to the neutral fiscal policy in which the automatic stabilisers are allowed to play fully. If in addition government consumption is discretionarily increased further immediately after the bust, the output loss is further contained.

These effects are mirrored in the current account developments and the budgetary indicators. High real interest rates due to real exchange rate depreciation, reversing the appreciation during the boom period, together with substantial budget deficits and low output growth lead to a very rapid and substantial increase in the government debt-to-GDP ratio. Remarkably, these effects imply also a substantial increase in the debt ratio in the case of strong procyclical consolidation efforts.

If however, a country with limited fiscal space engages in countercyclical fiscal policy, the effect on GDP is uncertain. Consider for instance the case in which the fiscal stance affects risk premia discussed in Section IV.3.3. If only sovereign risk premia are affected, the economic effects are not substantial.

Graph IV.3.7 provides a stylised illustration of the effects of changes to the country risk premium in countries with very limited fiscal space. It combines the fiscal shocks of Graph IV.3.7 with possible financial market reactions to increased risk of sovereign default and repercussions for risk premia in the overall economy (this can be due to exchange rate risk, but also to other links between sovereign and private defaults). That means not only the sovereign risk premium is shocked, but also the risk premia for households and firms change, although to a lesser extent than the country risk premium. Three scenarios are considered:

- The first scenario shows a substantial discretionary increase in government consumption by 2.5% of GDP compared to the government consumption before the downturn. In the three following years, the fiscal stimulus

is gradually reversed as government consumption returns to baseline. The fiscal stimulus is assumed to lead to an increase of the sovereign risk premium by 100 basis points and of the overall country risk premium by 50 basis points compared to the baseline scenario.

- The second policy scenario mimics neutral fiscal policy with full working of the automatics stabilisers in t and t+1. In t+2 and t+3, government consumption returns to baseline, i.e. it reverses the 2% of GDP increase in government expenditure that occurred during the boom. The country risk premia are not affected.

- The third policy scenario is pro-cyclical a reduction in government consumption largely counters the budgetary deterioration due to the automatic stabilisers and the budget balance is brought back close to baseline from the outbreak of the crisis. Both sovereign and country risk premia are reduced by 100 basis points. This could occur in countries with severe risk of balance of payment and/or a currency crisis.

As in the simulations for countries with large fiscal space (i.e. no risk premium response), procyclical tightening leads to a debt-to-GDP ratio that is 20 percentage points lower than in the strong fiscal stimulus scenario and a rapid return to baseline growth. However, these simulations illustrate how the benefits to economic growth in the short run may be nullified by movements in risk premia.

While the financial market reaction to fiscal policy and expectations of fiscal space developments cannot be accurately forecast, these simulations highlight the need to differentiate fiscal policy across Member States according to their fiscal space and the market spreads on sovereign, corporate and financial sector bonds. When considering the pace of deficit reduction over the coming years, taking account of fiscal space may enhance the growth path and lead to a better outcome for individual Member States and the euro area and the EU as a whole.

4. CONCLUSIONS

While the global financial crisis represents a common shock of unprecedented scale, the impact on EU countries and their ability to conduct active fiscal policies is far from homogenous. This chapter analysed in particular the effect of property prices and credit expansions on fiscal policy. The analysis suggests that rapid credit expansions and asset price booms and busts as experienced in EU countries over the past decade can have a large impact on public finances. Booms feed substantial government revenue windfalls, which often are matched by government expenditure increases.

The effects of such automatic fiscal stabilisers on budget balances -and thus economic activity- are large during boom-bust phases; larger than measured by the differences between actual balances and conventional measures of "structural budget balances". In addition to the automatic stabilisers governments may take discretionary measures when the recession sets in to sustain economic activity to reduce its depth. However, besides the asymmetry it introduces in the operation of fiscal policy, the effectiveness of typical expansionary Keynesian policies in downturns may be limited if fiscal space is constrained; more so, if it leads to rising sovereign and economy-wide risk premia.

A core concern is to ensure sufficient consolidation during apparent "good times". Revenue windfalls during asset price boom periods are often misread as durable improvements in the underlying budget position. Creating a sufficient safety margin to accommodate debt increases during bust phases, can avoid amplification of booms, and assure greater resilience during downswings. Countries with limited fiscal space - i.e., a high public debt, a high share of non-discretionary expenses and potential large tax revenue shortfalls together with competitiveness challenges threatening medium-term growth perspectives– need to engage in particularly cautious fiscal policies in booms to avoid adverse financial market reactions and constraints on the fiscal stabilisation tool during busts, leading to deep recessions.

Broader surveillance based on a wider set of indicators could provide a useful signalling device for the capacity of countries to meet their financial obligations. A broad definition of fiscal space, covering a wider set of variables would facilitate early indication of risks of budgetary stress and, by the same token, of the ability to conduct counter-cyclical fiscal policies when favourable conditions revert sharply. Such monitoring also needs to be consistent with a deeper analysis of underlying fiscal positions during booms, when revenues may be swollen by transient factors not captured in cyclical adjustment calculations. In addition to the usual indicators of government debt and deficit, particular attention could be given to external and domestic imbalances, including contingent liabilities related to private sector credit, foreign currency liabilities and current account developments.

While the results presented here provide evidence on the effect of boom-bust periods on public finances, questions remain regarding the potential medium-run effects of boom and busts periods on public finances as well as -crucially- the way public finances can help prevent the occurrence of or at least mitigate most damaging effects of such asset related cycles.

First, while a number of authors have provided insights regarding the impact of credit conditions and asset prices on fiscal variables, the evolution of private credit to the economy and its potential link to property prices in particular should be more closely analysed in the context of the EU given the evidence of their disruptive effects on economic activity and their potential for imparting a pro-cyclical bias to discretionary fiscal policy. ([170]) Structural features of EU credit and housing markets and their link with fiscal policy and economic activity would need to be analysed in depth.

Second, the existing literature is relatively scant on the effects of unwinding of macroeconomic imbalances on budgetary developments over the medium term. Little evidence is available on the long-run fiscal adjustment following a prolonged period of deteriorating competitiveness and increasing current account imbalances. Existing studies tend to suggest, however, that post-boom periods accompanied by the correction of current

([170]) See for instance, Jaeger and Schuknecht (2004) and Morris and Schuknecht (2007).

account imbalances may be particularly costly from a growth perspective and fiscal policy may play an important role during both the building-up and unfolding of such external imbalances.([171])([172]) Existing evidence on the fiscal cost of unwinding internal imbalances suggests also that wide asset price variations may have durable impact on public finances. ([173]) The dynamics of current account and competitive adjustment in the euro area are of particular interest. The loss of the exchange rate as adjustment instrument may imply protracted periods of self-reinforcing destabilising dynamics due to price and wage rigidities. Current account imbalances and net foreign asset positions can in turn play an important role in a context of exacerbated tensions in financial markets. The current reversal in countries with the largest imbalances provides scope for further analysis of the role of fiscal policy in the build-up and unwinding of external imbalances, in particular in the euro area. ([174])

Third, whereas the effectiveness of across-the-board counter-cyclical fiscal policy is subject to well-known caveats, targeting fiscal measures on microeconomic channels during periods of boom, bust and external adjustment have to be further investigated. In particular, policy incentives that favour investment in non-productive capital (housing) or debt over equity can contribute to the build up of macroeconomic imbalances. ([175]) While there seems to be a good case for removal of such incentives as they amount to tax distortions, it is much more controversial whether tax policy should be actively aiming at combating asset price bubbles and affecting competitiveness (e.g. through their impact on unit labour costs), since taxation is normally best though of as a long-term issue.

Fourth, unsustainable booms are easier to identify ex-post than during the good times. An improved identification of large tax revenue windfalls, especially taxes linked to the most volatile components of government revenues such as property and corporate taxes, could provide timely warning of difficult times ahead and better identification of underlying temporary developments of government revenues. ([176]) A better and more regular identification and forecasting of tax revenue windfalls, possibly using infra-annual information on budgetary data, could also prove instrumental to better understanding the temporary nature of fiscal developments. ([177])

([171]) See for instance Corsetti et al. (1999) and Mussa (2005).

([172]) Freund and Warnock (2005) investigate characteristics of current account adjustments in industrial countries. In their sample of 25 episodes the peak current account deficit is mostly around 5 to 6 % of GDP. The authors find that the current account adjustments typically take three to four years to resolve and involve slowing economic growth, a significant real depreciation (10 to 20%), accelerating real export growth, declining investment and eventually an improvement in the budget balance. There are just few exceptions of current account adjustment in which these characteristics did not occur. In the context of the current account imbalances in the euro area and in countries with a currency board, it would thus be interesting to have a closer look at these exceptions that did not experience nominal or real depreciation of the exchange rate.

([173]) See for instance Kuttner and Posen (2001) and Eschenbach and Schuknecht (2002).

([174]) Adjustment dynamics in EMU have been studied intensely over the past decade. See e.g. Langedijk and Roeger (2007) and Deroose et al. (2004). The role of fiscal policy and the effect of adjustment on fiscal developments are however only scantly analysed due to the short timeframe and lack of reversals in fortunes. However, recent developments showing a reversal in countries with the largest imbalances provides scope for further analyses.

([175]) See Keen and Perry (2009) who argue that while not a proximate cause of the crisis, tax distortions may have intensified its effects and shaped some aspects of its form.

([176]) See Kremer et al. (2006).

([177]) While challenging from a policy perspective given coverage limitations and statistical definitions, the use of intra-annual data has attracted growing attention in the forecasting literature given the potentially wealth of information contained in disaggregated data with high frequency. See for instance Onorante et al. (2008) and Leal et al. (2008).

ANNEX IV

DATA SOURCE AND METHODS

AIV.1. DETERMINANTS OF REVENUES WINDFALLS AND SHORTFALLS

The variables used to estimate the determinants of government revenues windfalls/shortfalls in the euro area are the following:

***Growth surprise**:* This indicator was calculated by making use of the information contained in the SCP regarding GDP growth forecasts made by national governments in year t-1. The growth surprise is equal to:

$$Growth\ surprise = \Delta\ GDPt^{\ ex\text{-}post} - \Delta\ GDPt,t\text{-}1^{\ SCP}$$

where Δ GDPt,t-1 ^{SCP} is the annual percentage change in nominal GDP forecast in year t-1 for the year t and ΔGDPt $^{ex\text{-}post}$ is the percentage change in nominal GDP that has effectively taken place in year t. Note that nominal rather than real GDP figures are considered in order to account for the influence of inflation developments.

Source: *Commission services.*

Composition effect: For an unchanged rate of GDP growth, tax revenues can change depending on the composition of GDP growth if, for instance, GDP growth is driven by tax-poor rather than tax-rich GDP components. The growth rates of each tax basis can thus be compared to the overall GDP growth rate in order to investigate whether GDP growth composition is likely to influence tax yields. The following formula can be used in order to obtain an aggregate measure of the composition effect:

$$Composition\ \ effect = \sum_{i=1}^{4}\left(\frac{\Delta Taxbase_i}{Taxbase_i} - \frac{\Delta GDP}{GDP}\right)\times\frac{Tax_{i,t-1}}{GDP_{t-1}} \quad (1)$$

where the tax bases are considered at time t-1 and include private consumption (for indirect consumption taxation), the gross operating surplus (as a proxy for the tax bases used for profit taxes) and the total wage bill (for wages and social security expenditures). These different tax bases are added up in order to obtain an aggregate measure of the composition effect.

Source: *Commission services.*

Asset prices development: Asset prices developments (including the equity and housing markets) may also play a role in explaining revenue windfalls given that taxation of capital revenues and transactions in housing market (VAT and/or stamp duties) can significantly influence tax revenues, especially during periods of abrupt price changes. The variables used are the annual change in equity prices and housing prices and are taken from the BIS database. It must be noted that this data contains information for a limited set of countries only (Belgium, Germany, Spain, Finland, France, Ireland, Italy and the Netherlands) such that estimations using this information could yield results different from the overall sample. Source: *Bank for International Settlements and Commission services*.

Oil prices: Oil prices can have an influence of revenue windfall as abrupt changes in these prices can be expected to also exert an influence on tax revenues through indirect taxes. The data used for the regressions is the annual change of the Brent price expressed in euro per barrel. Source: *Reuters*.

Trade balance: The effect of trade balance can be investigated separately by calculating the annual change in the deficit/surplus in total international trade (including intra-area trade) in percentage of GDP of each country. Source: *Commission services.*

AIV.2. VARIABLES DEFINITION, SOURCES AND CALCULATION OF THE FISCAL SPACE COMPOSITE INDICATOR

(i) Gross debt– is defined in percentage of GDP at market prices. Source: *Commission services.*

(ii) Contingent liabilities in the financial sector –The potential contingent liability represents the potential level of problematic banking assets in the system, and estimates the potential scale of costs to the government. The risks are quantified by developing estimates of the potential contingent liability arising from financial sector difficulties in a reasonable worst-case economic downturn, modified by the likelihood of that downturn

occurring over the medium to long-term. Deepening stress in a financial system often contributes to a downgrade. Importantly this indicator is not a prediction of the potential up-front or final direct costs to the government but rather an indicator of the potential risk linked to financial distresses for governments' finances. The potential liabilities are calculated by multiplying domestic credit as a percentage of GDP to a measure the potential contingent liability in relation to the size of the economy. The stock of domestic credit to the private sector and non-financial public enterprises are the basis in this computation, because it represents the subset of financial system assets in which losses are most likely to occur, and because systemic figures on bank credit to this sector are readily available. Claims against the government sector, conversely, are excluded. This component of domestic credit is not a potential additional source of burden to the government as it is already part of the government's debt burden. Source: *Standard & Poors*.

(iii) Medium term tax shortfalls - The estimate of revenue shortfalls in the medium term concern the two most volatile components of tax revenues: corporate taxes and property taxes, the latter including taxes on transactions in the housing market. The estimate of the tax shortfall is made assuming that corporate taxes and property taxes return to their pre-bubble ratio to GDP identified by the breaking points in the trend level of each tax revenues. The difference between the current level of tax revenues related to corporate and property taxes (expressed in percentage of GDP) and their pre-bubble value is used as proxy of tax revenue shortfalls. Source: *Commission services.*

(iv) Current account balance – is defined in percentage of GDP at market prices. Source: *Commission services.*

(v) Non- discretionary expenses are the sum of interest payment on debt, and payments on social benefits other than social transfers in kind of the general government. This latter variable is mostly represented by payment of pensions. The sum of these two variables is measured in percentage of GDP at market prices. Source: *Commission services.*

Accordingly a large government debt, high contingent liabilities, potentially high tax revenues shortfalls and a large share of non-discretionary expenses are expected to deteriorate countries' fiscal space and thus enter the composite indicator with a negative sign. The indicators (i)-(v), hereby *xi*, are standardised using the procedure described in OECD (2005) according to the following formula):

(1) xi = 10* (Indicator – average of indicator) / Standard deviation of indicator

This normalisation assumes that observations are normally distributed and assigning a maximum and minimum score to outliers would deliver scores ranging from -30 to +30. The benchmarks are given by the reference group represented by the EU average of the fiscal space indicator in 1999.