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**THE BENEFITS
OF FISCAL
CONSOLIDATION
IN UNCHARTED
WATERS**

by Philipp Rother,
Ludger Schuknecht and
Jürgen Stark



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ABSTRACT

This paper looks at fiscal sustainability and fiscal risks from a comprehensive, global perspective. It argues that the benefits of consolidation have to be re-assessed given that industrialised countries have entered uncharted waters with unsustainable public debt dynamics and enormous contingent liabilities across sectors and countries coinciding with strong, non-linear and potentially highly adverse fiscal-financial interlinkages. This suggests that there would be significant benefits from fiscal consolidation without delay and that there is a need for caution against excessive faith in fiscal engineering.

Keywords: consolidation, deficits, public debt, fiscal sustainability, financial crisis, tail risks, confidence, fiscal engineering.

JEL code: E60, D62, H60

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SUMMARY

Public finances in Europe and other advanced economies are in dire straits. Public deficits and debt have reached unprecedented peacetime levels and the dynamics are clearly unsustainable. This coincides with an increased burden of private debt and government cross-border commitments. Moreover, the economically and financially interlinked environment in which the debt has been amassed renders the magnitude of the obligations that governments face more uncertain. This creates not only significant long-term risks but also short-term risks.

In this environment, the costs and benefits of consolidation need to be assessed from a comprehensive perspective. First, it is not disputed that, in the long run, fiscal consolidation supports fiscal sustainability both directly and indirectly via positive growth effects. This is all the more relevant looking forward, given the magnitude and global nature of public liabilities.

Second, the paper revisits the arguments around the costs and benefits of consolidation in the short run. In addition to the “traditional” Keynesian and non-Keynesian effects, fiscal policies affect confidence and demand through the “fiscal-financial” channel. Consolidation can have positive wealth effects on consumption or raise the collateral value of assets, which, in turn, benefits financial intermediation, consumption and investment. But it is not only these considerations about fiscal multipliers that suggest a need for fiscal prudence. Experience shows that the state of the economy is also often misjudged. Early consolidation would help compensate for potential errors concerning the size of output gaps and underlying budgetary positions.

Third, the financial crisis has shown that the financially interlinked environment may not only increase the level and volatility of the price at which markets are willing to finance governments. Sudden stops in the

availability of financing (with a need for “ad hoc” fiscal adjustment) are conceivable even in advanced economies and even at debt levels that were previously considered reasonably “safe”. Moreover, there is immense speed and non-linearity in market reactions within and across countries which has previously only been associated with emerging markets. Consolidation would provide clear benefits by guarding against such risks.

In a number of countries, markets only stabilised and access to financing by governments was only regained when regional (European) and global (IMF) insurance was activated on a major scale. In this environment, consolidation both in countries at risk and in countries providing insurance results in positive externalities: it reduces contingent liabilities for other countries and it strengthens the robustness and insurability of the system. Moreover, broad-based consolidation will reduce the political strains on international solidarity that could otherwise undermine the stability of the system. In the absence of consolidation, public finance-related instability would continue which, in turn, would raise the risk of continuing bouts of instability, renewed boom-bust cycles, financial repression, protectionism and undue pressure on central bank balance sheets and monetary policies.

Fiscal consolidation needs to be implemented without delay. To reap the full short-run and long-run benefits, it must be part of an ambitious, comprehensive and credible reform strategy which will indeed achieve a significant improvement in fiscal sustainability. All euro area countries need to correct their excessive deficits in accordance with their commitments and reach balanced budgets by 2016.

The debt reference value of the Maastricht Treaty, 60% of GDP, remains appropriate as a ceiling for safe public debt ratios. Figures of 90% that are being floated in parts of the literature are much too high given the vulnerability and sudden-stop-like experiences in the fiscal crisis of spring 2010.

Consolidation should generally be based on expenditure reduction which both strengthens spending efficiency and incentives to work and demonstrates the political resolve of governments.

Fiscal reforms should be coupled with structural reforms of social security and financial systems and of labour and product markets in order to maximise the benefits for growth and sustainability.

The chances of successful and sustained consolidation can be increased by strengthening the institutional environment for fiscal policy-making at the national and the international level.

Uncertainty about the magnitude of public liabilities and what constitutes a sustainable fiscal position, the effects of fiscal policy on the economy, the strong and non-linear reaction of markets, the risk of a cascade of policy errors and adverse political economy incentives are additional reasons for early and determined fiscal consolidation. They also suggest a need for great caution in any efforts to “fine tune” the economy via “fiscal engineering”.

“Governments can confiscate, secretly and unobserved, an important part of the wealth of their citizens (...). There is no subtler, no surer means of overturning the existing basis of society than to debauch the currency.”

John Maynard Keynes, *The Economic Consequences of the Peace*

“The curious task of economics is to demonstrate to men how little they know about what they imagine they can design.”

Friedrich August Hayek, *The Fatal Conceit*

I INTRODUCTION

Public finances in Europe and other advanced economies are in dire straits. Public deficits and debt have reached unprecedented peacetime levels and the dynamics are clearly unsustainable. This coincides with an increased burden of private debt and cross-border commitments. Moreover, the economically and financially interlinked environment in which the debt has been amassed renders the magnitude of the obligations that governments face more uncertain. This creates not only significant long-term risks but also short-term risks.

In this environment, the costs and benefits of consolidation need to be assessed from a comprehensive perspective. First, it is not disputed that, in the long run, fiscal consolidation supports fiscal sustainability both directly and indirectly via positive growth effects. This is all the more relevant looking forward, given the magnitude and global nature of public liabilities.

Second, the paper revisits the arguments around the costs and benefits of consolidation in the short run. In addition to the “traditional” Keynesian and non-Keynesian effects, fiscal policies affect confidence and demand through the “fiscal-financial” channel. Consolidation can have positive wealth effects on consumption or raise the collateral value of assets, which, in turn, benefits financial intermediation, consumption and investment. But it is not only these considerations about potentially less positive fiscal multipliers that suggest a need

for fiscal prudence. Experience shows that the state of the economy is also often misjudged. Early consolidation would help compensate for systematic errors concerning the size of output gaps and over-optimism about the underlying budgetary positions.

Third, the paper looks at the costs and benefits of consolidation from another angle that so far has seldom been discussed in the context of advanced economies. The financial crisis has shown that the credibility of public finances and the situation in financial markets are closely interlinked. Concerns about the sustainability of public finances may increase the level and volatility of the price at which markets are willing to finance governments. Sudden stops in the availability of financing are conceivable even in advanced economies and even at debt levels that were previously considered reasonably “safe”. Moreover, concerns about the sustainability of public finances and the health of the financial sector can mutually reinforce each other and, thus, exacerbate adverse fiscal-financial feedback loops. There was immense speed and non-linearity in market reactions within and across countries in 2010 which had previously only been associated with emerging markets. Consolidation would provide clear benefits by guarding against such risks.

There is another dimension to this issue: in a number of countries, markets only stabilised and access to financing by governments was only regained when regional (European) and global (IMF) “insurance” was activated on a major scale (Greek programme, European Financial Stability

Facility (EFSF)). In this environment, consolidation both in countries at risk and in countries providing “insurance” results in positive externalities: it reduces contingent liabilities for other countries and it strengthens the robustness and “insurability” of the system.¹ Moreover, broad-based consolidation reduces the political strains on international solidarity that could otherwise undermine the stability of the system. In the absence of consolidation, public finance-related instability would continue which, in turn, would increase the risk of continuing bouts of instability, renewed boom-bust cycles, financial repression, protectionism and undue pressure on central bank balance sheets and monetary policies.

In a nutshell, this paper argues for significant (expenditure-based and growth-friendly) consolidation in Europe and other advanced economies without delay. There is a need to reduce unsustainable public liabilities with their deleterious effects on long-term growth and confidence. In an environment of strong, non-linear fiscal-financial interlinkages, the benefits of consolidation are likely to outweigh their costs (notably reduced aggregate demand), even in the short term. Consolidation based on a strengthened institutional framework is needed to underpin confidence in fiscal solvency at the national level and prevent adverse international externalities and tail risks. These considerations and uncertainty about the “true” state of the economy also suggest a need for fiscal prudence and great caution in any efforts to “fine tune” the economy via “fiscal engineering”.

The paper is organised as follows: Section 2 provides a comprehensive account of public liabilities in Europe and other G7 economies. Section 3 reviews the long-term benefits of consolidation, while Section 4 looks at short-term issues. Section 5 focuses on fiscal-financial linkages. Section 6 concludes with policy lessons.

¹ The assumption here is that even if countries pay for the insurance, e.g. via penalty rates, it is not equivalent to private sector insurance. There are political and political economy issues. For example, the provision of loans in a programme (or the option thereof) and the possible write-off of a loan are not only evaluated from an economic perspective but also in terms of their political costs as, for example, they could be seen as a step towards a transfer union.

2 EURO AREA PUBLIC FINANCES IN A GLOBAL CONTEXT: WHERE DO WE STAND?

In this section we will take stock of government liabilities and adjustment needs in the euro area and other G7 economies. The findings suggest a much more vulnerable position for fiscal sustainability in the euro area and globally in 2010 than at any time in recent decades.²

There is little doubt that public finances in most advanced economies are unsustainable when looking at general government deficits, debt dynamics and additional implicit and contingent liabilities for the budget. Deficits in the euro area are expected to average above 6% in 2010 and deficit peaks will be near or above 10% in several member countries (Table 1). The situation in other G7 countries except Canada is no better: both the United States and the United Kingdom are expected to post double-digit deficits in 2010. Projected 2010

deficits would absorb about one third of gross savings in the euro area and almost 100% of domestic gross savings in the United States and the United Kingdom.

Consequently, gross public debt ratios have increased rapidly. After 66% in 2007, debt is expected to rise to 84% of GDP in the euro area in 2010 with levels near or above 100% in three countries. Gross debt in the United Kingdom and the United States will rise to similar ratios, but their much lower starting positions only three years ago point to much more adverse underlying debt dynamics. Japan is expected to post a staggering debt ratio of nearly 200% of GDP, while average G7 debt will exceed 100% of GDP in 2010.

² See Giammarioli et al. (2007) for an analysis of the factors driving fiscal sustainability.

Table 1 Public finances

(percentage of GDP)

	Budget balance	Gross debt			Increase in ageing costs (percentage points of GDP)	Fiscal adjustment needed
	2010	1999	2007	2010	2007-2060	2010-2020
Belgium	-5.0	113.7	84.2	99.0	6.9	4.7
Germany	-5.0	60.9	65.0	78.8	4.8	4.0
Ireland	-11.7	48.5	25.0	77.3	8.9	9.8
Greece	-9.3	94.0	95.7	124.9	15.9	9.2
Spain	-9.8	62.3	36.2	64.9	9.0	9.4
France	-8.0	58.8	63.8	83.6	2.7	8.3
Italy	-5.3	113.7	103.5	118.2	1.6	4.1
Cyprus	-7.1	51.8	58.3	62.3	10.8	-
Luxembourg	-3.5	6.4	6.7	19.0	18.0	-
Malta	-4.3	57.1	61.9	71.5	10.2	-
Netherlands	-6.3	61.1	45.5	66.3	9.4	5.5
Austria	-4.7	67.2	59.5	70.2	3.1	4.7
Portugal	-8.5	51.4	63.6	85.8	3.4	7.8
Slovenia	-6.1	23.9	23.4	41.6	12.8	4.0
Slovakia	-6.0	47.9	29.3	40.8	5.2	4.1
Finland	-3.8	45.7	35.2	50.5	6.3	4.4
Euro area	-6.6	71.7	66.0	84.7	5.2	-
Canada	-3.4	91.4	65.0	81.7	-	4.4
Japan	-7.6	127.0	167.0	199.2	-	13.1
United Kingdom	-12.0	43.7	44.7	79.1	5.1	9.0
United States	-10.7	60.4	61.9	89.6	-	12.0
G7 average	-8.7	77.3	78.8	106.7	-	10.0

Sources: Spring 2010 European Commission Economic Forecasts (AMECO database) and OECD Economic Outlook (June 2010) in the case of Canada, Japan and the United States. The weights for the calculation of the G7 aggregate are based on GDP data from the OECD Economic Outlook (June 2010). The fiscal adjustment needed comes from the IMF (2010a). The increase in ageing costs data are taken from European Commission and EPC (2009).

In addition, significant implicit liabilities from social security systems are expected to burden future budgets. By optimistic European Commission/Economic Policy Committee (EPC) estimates, public expenditure on health, pension and long-term care will on average rise by 5.2% of GDP over the next few decades (European Commission and EPC, 2009). Some assessments by other institutions point to much higher future burdens.³

Public debt developments in recent years have followed the broad trend of deteriorating deficit and debt positions which has prevailed since about 1970 (Chart 1). At that time, budgets were mostly in balance and public debt ratios were low. In many countries, public debt took off in the 1980s when the impact of chronic deficits (which started in the 1970s) on public debt was no longer mitigated by inflation. It is also important to note that the public debt ratios being experienced today are historically not unprecedented. Notably in the inter-war years many countries experienced public debt well

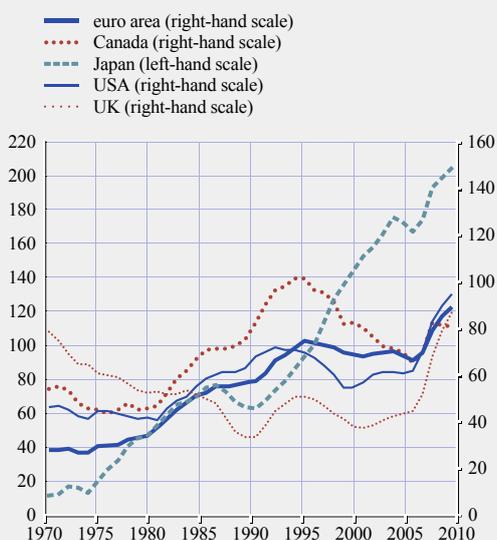
above 100% of GDP (Tanzi and Schuknecht, 2000). However, debt was often financed at very low interest rates (Homer and Sylla, 2005), so interest expenditure, even in the most highly indebted countries, did not exceed 5-6% of GDP.⁴

Looking forward, a continuation of past deficits would imply explosive debt paths as illustrated for the euro area in Chart 2. Indeed, the “no consolidation” line in the chart underestimates the likely development of the debt ratio, as continued fiscal imprudence will undermine economic confidence and thus erode the basis for a return to sound and sustainable economic growth. With GDP growth faltering, public debt ratios would rise even more steeply. But even the planned deficit of euro area countries would only bring most countries’ deficits and the average deficit to 3% of GDP by 2013. This, in turn, would mean a stabilisation of public debt at nearly 90% of GDP on average and well above 100% for a number of countries. This implies that even aggregate public balance sheets for the euro area are already far more at risk than the safe threshold of 60% suggested by the founding fathers of EMU. For the United Kingdom, the budget plans of spring 2010 foresee a stabilisation of public debt at above 85% of GDP in 2012/13. The US gross debt ratio will already reach 90% this year with significant further increases foreseeable in the years ahead.

With these debt levels and fiscal prospects, the IMF (2010a) has identified the fiscal adjustment needed over the next decade to bring public finances back onto a sustainable footing. The results are staggering: for the average of the euro area the adjustment would have to be around 6% of GDP, for the average of the G7 around 10% of GDP and for some countries well into double digits (see Table 1). If the adjustment were to come mainly on the expenditure side

Chart 1 General government gross debt in selected advanced economies

(1970-2010; percentage of GDP)

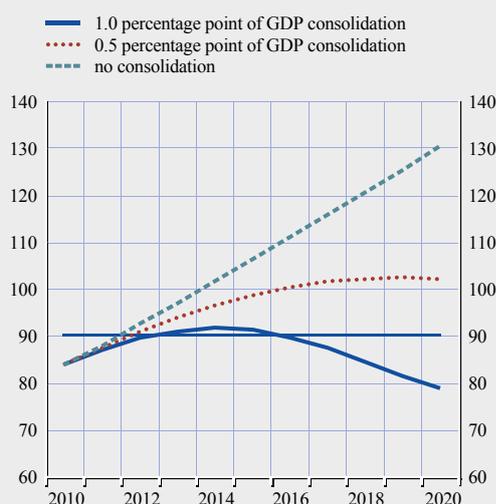


Sources: Spring 2010 European Commission Economic Forecasts, OECD Economic Outlook June 2010 in the case of Japan, the United Kingdom and the United States and ECB calculations. Note: The data for 2010 are forecasts.

3 See OECD or IMF studies on this matter. Looking backward, the root of fiscal sustainability concerns lies to a significant extent in the wasted opportunity of putting public finances on a sound footing in the “good times” of 1999-2007 (Schuknecht, 2009).
4 Moreover, financial repression and domestic debt ownership was much more prevalent than today; see the discussion on these matters below.

Chart 2 Medium-term projections for the average government debt-to-GDP ratio in the euro area

(2010-2020; percentage of GDP)



Source: ECB calculations.

Notes: All three scenarios use the European Commission's spring 2010 forecast for general government debt and primary balance up to 2010 as a starting point. Fiscal developments as of 2011 are determined by three alternatives scenarios: Scenario 1 assumes a rather rapid fiscal consolidation process, with the primary balance improving by 1.0 percentage point of GDP per year until an overall balanced budget is reached. Scenario 2 assumes a less ambitious consolidation path, with the primary balance improving by only 0.5 percentage point of GDP per year until an overall balanced budget is reached. Scenario 3 assumes that no consolidation efforts are made. The primary balance remains constant at the forecast value for 2010 over the whole simulation period. The macroeconomic assumptions underlying the three scenarios are as follows: nominal GDP growth comes from IMF (2010b) up to 2015 and afterwards it is equal to the average of nominal potential growth over 1996-2015 of 3.4% as estimated by the IMF. The nominal implicit interest rate on government debt is assumed constant at the value recorded in 2008 (as the values for the period 2009-10 could be distorted by the financial crisis).

(as discussed below and recommended by much of the literature), it would imply a decline in real spending by 10-20% or more.

When talking about fiscal sustainability one has to cover at least two additional fiscal risks which together with "visible" debt and ageing-related liabilities set the stage for considerable "fiscal stress" in the future (Leeper, 2010). First, the financial crisis has shown that private sector debt can become a contingent liability for the public sector, for example via bank bailout costs. The financial crisis has seen significant debt increases due to financial sector support, and not only in countries which featured a

bloated banking sector. This is where the global dimension of contingent liabilities comes into play: contingent liabilities can turn into "real debt" across borders as well (e.g. global bank losses on US sub-prime mortgages which turned into contingent and real liabilities for many governments). If banking problems were to spread across countries through a domino effect, significant amounts of public support might be needed. Note that the implicit contingent liabilities assumed by euro area governments to resolve the financial crisis amounted to an average of 20% of GDP, and much more in some countries (van Riet, 2010).

Private debt can also seep into government accounts when, for example, for political or financial stability reasons, the public sector supports over-indebted households through mortgage relief or corporations through financial support. Private sector indebtedness is very high in many countries (Table 2). Aggregate private sector indebtedness in the euro area is around 170% of GDP, the same order of magnitude as in the other G7 economies. Household and corporate debt exceed 200% of GDP in Spain and the Netherlands. Together with public sector debt, the total debt stock thus averages about 250% of GDP in the euro area, and it is even higher in some of its members and, on average, in the G7. Moreover, the deterioration in public balance sheets over the crisis period (which followed a strong increase in private debt) has not been accompanied by a commensurate repair in private balance sheets. This is consistent with the historical pattern of recent decades during which the overall debt stock in many advanced economies has increased continuously.

Second, governments may face contingent liabilities from third countries if they have directly or indirectly underwritten their liabilities. In the European context, such liabilities could arise from the Greek programme and the EFSF, even though it has not yet been activated and the safeguards included reduce the risk and potential magnitude of such liabilities. Nevertheless, the related total contingent liabilities exceed

Table 2 Debt ratios of non-financial corporations, households and the general government sector in selected countries

(percentage of GDP)

	Private		Households		General government		Total	
	Non-financial corporations							
	1999	2009	1999	2009	1999	2009	1999	2009
Germany	58.3	71.1	72.2	63.4	60.9	73.1	191.5	207.7
Ireland	-	204.2	-	120.8	48.2	64.0	-	389.0
Spain	54.4	140.0	42.8	86.0	62.3	53.2	159.6	279.3
France	74.9	108.7	36.4	53.6	58.8	78.1	170.1	240.4
Italy	53.0	83.2	21.6	42.2	113.7	115.8	188.4	241.1
Netherlands	95.6	94.2	83.1	127.9	61.1	60.9	239.8	282.9
Portugal	107.1	164.7	54.9	97.0	49.6	75.1	211.5	336.8
Euro area	71.9	104.6	49.6	65.8	71.9	78.7	193.4	249.1
Canada	61.4	53.6	68.3	82.9	91.4	82.5	221.0	219.0
Japan	129.5	95.9	75.8	65.5	127.0	192.9	332.2	354.3
United Kingdom	73.1	116.3	66.6	103.1	43.7	68.1	183.4	287.5
United States	64.9	77.6	69.8	96.4	60.4	83.0	195.1	257.0
G7 average	78.4	84.6	65.9	80.2	77.3	100.8	221.6	265.7

Sources: Private sector: OECD (National Accounts), ECB (Quarterly Euro Area Accounts) in the case of the euro area and ECB calculations; public sector: ECB (Government Statistics) in the case of EU countries and the euro area aggregate, OECD (Economic Outlook) for Canada, Japan and the United States and ECB calculations.

Notes: The debt of non-financial corporations sector covers loans and securities other than shares of this sector. The debt of the household sector consists of loans. The G7 figures have been aggregated using GDP weights.

5% of euro area and country GDP and are thus not negligible. Moreover, the nominal figures are likely to understate the marginal fiscal burden, as related liabilities are likely to fall due (if at all) during times of financial stress when national imbalances may already be costly and/or difficult to finance.

There are two important implications of this discussion. First, while there are precedents for the magnitude of debt for individual countries, this is not the case at the global level, where the level of overall indebtedness is unprecedented. The public liabilities of not many advanced countries would still be regarded as entirely “safe” by the standards applied only a few years ago. We will come back to this issue below. Second, the magnitude of public liabilities itself is uncertain and, in reality, not fully under the control of governments, contrary to past beliefs. While budgetary balances and ageing costs reflect short and long-term policy decisions and are broadly predictable and controllable by policy makers, the crisis has shown that this may not be the case for contingent liabilities from the private sector. Only theoretically could

governments have refused to support banks, households, firms and other governments. Moreover, the magnitudes turned out to be much higher and more uncertain than anybody had predicted before the crisis.

Given these facts about the size and uncertainty of public liabilities, it is not a surprise that there is no clear benchmark to determine when deficits or debt have become unsustainable or when markets will start perceiving fiscal developments and dynamics to be unsustainable. During the crisis, the Italian Government has not had financing difficulties, in spite of public debt well in excess of 100% of GDP, and the Japanese Government seems to be able to manage debt of 200% of GDP without any significant interest penalty. However, there are reasons to believe that the threshold for safe debt ratios is “normally” much lower, especially for small countries. These do not benefit from an entrenched safe-haven status, and they may be more restricted in their potential recourse to financial repression at home while being dependent on investor confidence from abroad. A few years ago the IMF broadly defined

Table 3 Cross-border contingent liabilities in the euro area

Country	EFSF (EUR billions)	Greece (EUR billions)	EFSF (percentage of GDP)	Greece (percentage of GDP)	Total (percentage of GDP)
Belgium	15.3	2.9	4.4	0.8	5.2
Germany	119.4	22.3	4.9	0.9	5.8
Ireland	7.0	1.3	4.4	0.8	5.2
Spain	52.4	9.8	5.0	0.9	5.9
France	89.7	16.8	4.6	0.9	5.4
Italy	78.8	14.7	5.1	0.9	6.0
Cyprus	0.9	0.2	5.0	0.9	5.9
Luxembourg	1.1	0.2	2.8	0.5	3.3
Malta	0.4	0.1	6.8	1.2	8.0
Netherlands	25.1	4.7	4.3	0.8	5.1
Austria	12.2	2.3	4.3	0.8	5.1
Portugal	11.0	2.1	6.6	1.2	7.9
Slovenia	2.1	0.4	5.9	1.1	7.0
Slovak Republic	4.4	0.0	6.6	0.0	6.6
Finland	7.9	1.5	4.5	0.8	5.3
Greece	12.4	0.0	5.2	0.0	5.2
Total euro area	440.0	79.2	4.8	0.9	5.7

Source: EFSF and European Commission.

the benchmark for safe public debt ratios for countries with “emerging market character” as below 40% and for unsafe ratios as above 60% (Hemming et al., 2003).

When looking at the experience of euro area countries, a number of them became subject to increased market scrutiny with much higher risk premia and limited market access in the fiscal crisis of spring 2010. At that time, the Greek debt outlook was certainly far above the IMF thresholds. However, public debt in Spain, Portugal and Ireland was projected to be 65-85% of GDP for 2010 and the European Commission (2010) projected debt to stabilise at between 75% and 90% of GDP in these countries. It was notably the expected magnitude of and uncertainty about contingent liabilities from the financial sector that contributed to fast and strong adverse market reactions despite “moderate” visible public debt. The market reaction could have been much stronger and might have spread to other countries if the fiscal crisis of spring 2010 had not been mitigated and kept “local” by international “insurance” measures. “Safe” debt ratios may therefore be lower for all but the biggest and most credible

developed countries and perhaps not far above the 60% that the founding fathers of EMU agreed on.⁵

⁵ See also Ostry et al. (2010) for a probabilistic approach to safe debt ratios.

3 THE BENEFITS OF CONSOLIDATION IN THE LONG RUN

Long-run benefits of fiscal consolidation derive from the fact that with smaller deficit and debt ratios governments have to draw less on resources that need to be provided by the private sector. In addition, given the importance of government action in today's economies, any perception of financial vulnerability has the potential to undermine economic confidence. This can drive economic decision makers into projects with a short pay-off horizon, thus foregoing long-term investment in physical and human capital. Finally, empirical evidence suggests that in many countries there is considerable scope to improve the efficiency of public spending, i.e. to achieve the same or even greater effects with less public expenditure.

3.1 LONG-TERM EFFECTS ON GROWTH AND DEMAND

Fiscal consolidation has a range of positive effects on long-term growth. Most fundamentally, it reduces the amount of savings used by the public sector, leaving more resources for private investment. Moreover, fiscal consolidation strengthens fiscal sustainability and contributes to an overall improvement in macroeconomic stability. In addition, the composition of the fiscal adjustment can induce substantial long-run growth effects, including by reducing distortive tax rates and improving the quality of public finances. These aspects will be discussed in greater detail below.

All else being equal, a decline in the fiscal deficit improves government savings and consequently national savings. This reduces real interest rates and supports demand for interest-sensitive assets, notably private sector investment. This in turn raises long-term growth. This argument is particularly true for highly developed countries. While for countries at an earlier stage of development the case has been made that debt-financed investment spending can contribute to overall welfare in the light of the potentially large social returns on such

investment (e.g. in the area of infrastructure), evidence for industrial countries points to relatively low rates of return and net public investment is generally very low anyway.

A number of beneficial effects of fiscal consolidation result from the improvement in projected fiscal sustainability in an uncertain economic environment. In periods of uncertainty, economic agents are aware that governments are subject to default risk or may need to change policies abruptly to remain solvent. The reduction of these risks has a positive effect on growth via various channels. On the financing side, an improvement in the sustainability outlook reduces risk premia on government bond yields (Laubach, 2009). To the extent that private sector borrowing rates depend on government borrowing rates, this decline will also result in lower financing costs for private investment. Moreover, similar to the effect described above, lower real interest rates increase private wealth.

With regard to expected government policies, an improvement in fiscal sustainability reduces the risk of abrupt policy changes. With uncertain sustainability, investors may at some point reduce their lending to the government or demand sharply higher yields. This could force a government to adopt distortive emergency policy measures (e.g. tax hikes or deep expenditure cuts). Enhanced fiscal sustainability also supports the expectation of low inflation, as it reduces the perceived incentives for a government to seek to alleviate its financial situation through higher inflation. The expectation of such risks reduces investors' willingness to engage in long-term projects which otherwise would contribute to long-term growth. The formation of physical and human capital is particularly relevant in this regard.

In a similar vein, a strengthened financial position allows governments to ensure stable long-term growth by smoothing out economic shocks via the operation of automatic stabilisers or (if necessary) discretionary policy measures. This contributes to a more stable overall

economic environment. The financial and economic crisis has clearly shown the different ability of governments to respond to the sharp downturn. Those governments which had built up and maintained sound fiscal positions were able to commit to credible short-run support measures with a view to preventing a downward spiral of financial sector losses driving down aggregate demand which would further erode financial stability. By contrast, those governments that entered the downturn with weak fiscal positions (having failed to make use of the previous “good times” to consolidate) had their hands tied by financial constraints (see European Commission, 2009).

Finally, as will be discussed in greater detail in Section 5, a fragile fiscal position can directly influence the behaviour of banks, enterprises and households, with severe consequences for the economy. But fiscal vulnerability can adversely affect the stability of the financial sector, including in the longer term, via its exposure to sovereign risk, with negative implications for growth. On the household side, a weak fiscal position can undermine the ability of fiscal policies to smooth out negative economic shocks. With a fragile fiscal situation, forward-looking households are likely to offset a deterioration in the fiscal position by increasing their own savings in anticipation of the future tax increases that will be necessary to restore fiscal sustainability (Ricardian equivalence). Such behaviour effectively reduces (or even cancels out) the growth-supporting effect of fiscal loosening, impeding the insurance function of the government sector with regard to reducing the impact of economic shocks (Nickel and Vansteenkiste, 2008). The reduced ability of governments to smooth out economic fluctuations when debt is high is also brought out by research on the effect of government policy on short-term growth when different debt levels are taken into account (IMF, 2009).

In addition to the literature quoted above, empirical evidence supports the view that the growth-enhancing effects of fiscal consolidation

are statistically significant and important in size. Looking at very long-term economic developments in developed countries, Reinhart and Rogoff (2010) establish a pattern of significantly lower average growth for countries with debt-to-GDP ratios above 90%. Using econometric approaches, important growth-reducing effects of high debt levels (above around 90% of GDP) are found by Checherita and Rother (2010) for the euro area and, similarly, Kumar and Woo (2010) find that GDP growth in 38 advanced and emerging countries is more adversely affected once debt levels exceed 90% of GDP.

While the observed critical debt threshold of around 90% of GDP is remarkably robust across different data samples and methodologies, it is most likely not invariant to changes in the economic environment. As the above discussion has shown, important aspects of the interaction between fiscal sustainability and GDP growth rest on the implications of fiscal sustainability for overall macroeconomic and financial stability. For these channels, the overall level of risk taking in all sectors of the economy and the degree of risk aversion play important roles. In times of high actual levels of risk exposure and increased risk aversion, economic agents will be more cautious in their decisions. The growth-reducing effects of fiscal imbalances are then likely to occur at lower levels of fiscal deficit and debt. At the same time, the long-term benefits of fiscal consolidation will also be larger in such an environment.

The findings of the literature also refer to a period when only few countries had very high debt above 90% of GDP. Hence, the adverse effects on individual countries mentioned above did not have major repercussions for the global savings pool and for the potential stabilising role of government at the global level. This is likely to be different when global debt levels are very high, crowding out effects across countries emerge and expectations of economic and financial stability deteriorate. We will come back to this issue in Section 5.

3.2 THE COMPOSITION OF ADJUSTMENT

In addition to the overall beneficial long-run effects of fiscal consolidation, an appropriate composition of the adjustment effort can make an important contribution to the beneficial growth effects (Alesina and Ardagna, 2009; Larch and Turrini, 2008). Expenditure ratios in the euro area were generally already high before the crisis and have risen steeply over the past two years (Table 4). Reducing public expenditure with a focus on non-productive items can add to the success and benefits of consolidation in several ways.

The main reason for the unfavourable deficit and debt dynamics over the boom and bust cycle has been lax expenditure policies. During the good times, countries generally failed to realise planned expenditure reductions (Holm-Hadulla et al., 2010; Hauptmeier et al., 2010). As a result of the financial crisis, not only deficits and debt, but also expenditure ratios are at or near their historical peaks in 2010 (see Table 4).

On the supply side, over time, reducing public expenditure helps to make room in the budget to reduce distortive taxes, thereby supporting private sector activity. Moreover, as the net present value of taxes declines, household wealth increases and thereby contributes to supporting aggregate demand. In addition, all else being equal, the interest rate effect of expenditure-based consolidation is likely to exceed that of revenue-based adjustments, as the latter have a negative impact on private sector incomes and, thus, capacity to save. These three effects add to the beneficial effects of consolidation via lower interest rates and higher wealth, as discussed above.

Political economy effects add substantially to the benefits of expenditure-based consolidation. Given that fiscal consolidation efforts are generally politically costly, the implementation of ambitious expenditure reforms gives a clear signal of the government's commitment and ability to improve fiscal sustainability. This increases the probability of lasting

Table 4 Total expenditure

(percentage of GDP)			
	Total expenditure	Change in expenditure ratio (percentage points of GDP)	
		2010	1999-2007
Belgium	53.7	-1.8	5.4
Germany	48.0	-4.4	4.4
Ireland	47.1	2.5	10.5
Greece	48.4	0.4	3.7
Spain	45.7	-0.6	6.5
France	56.1	-0.3	3.8
Italy	51.3	-0.3	3.4
Cyprus	48.3	5.4	6.1
Luxembourg	43.2	-3.0	7.0
Malta	46.0	-0.6	3.5
Netherlands	52.3	-0.5	6.8
Austria	52.5	-5.0	3.9
Portugal	51.0	2.5	5.3
Slovenia	50.7	-4.1	8.3
Slovakia	40.3	-13.8	6.0
Finland	55.9	-4.4	8.6
Euro area	50.8	-2.1	4.8
Canada	43.2	-3.5	4.0
Japan	40.8	-2.7	4.9
United Kingdom	52.6	5.3	8.4
United States	41.6	2.6	4.8
G7 average	44.8	1.0	4.5

Sources: Spring 2010 European Commission Economic Forecasts (AMECO database) and OECD Economic Outlook (June 2010) in the case of Canada, Japan and the United States. The weights for the calculation of the G7 aggregate are based on GDP data from the OECD Economic Outlook (June 2010).

success for the announced adjustment plans. The expectation of successful consolidation policies triggers an adjustment in private sector behaviour with regard to the perception of overall macroeconomic and fiscal stability. In a more stable environment, consumption and investment will pick up and support economic growth, which in turn facilitates the consolidation process.

Evidence shows that substantial debt reductions are possible over periods of ten years or more if appropriate policies are implemented consistently (Nickel et al., 2010). The benefits of ambitious fiscal consolidation can be gained at very limited economic cost when it is conducted in the context of a medium-term framework and is focused on expenditure reforms. Hauptmeier et al. (2007) show that those countries that reduced public primary expenditure by more than 5% of

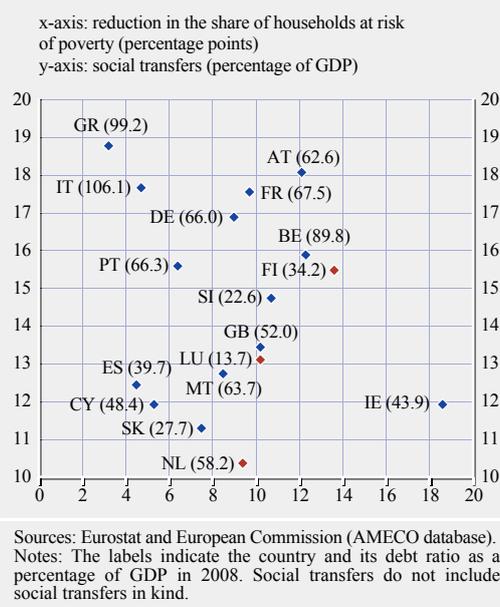
GDP in the 1980s and 1990s experienced large improvements in fiscal and economic growth indicators. These countries focused spending restraint on transfers, subsidies and public consumption (while largely sparing education) in comprehensive reform programmes, and they strengthened their institutional frameworks.

Finally, by boosting overall spending efficiency, governments can achieve policy objectives with fewer resources, thus leaving scope for expenditure reductions. The scale of such improvements in the quality of public finances can be significant (Barrios and Schächter, 2009; Afonso et al., 2005). Reforms in this direction would protect (or even increase) growth-enhancing public expenditure. Expenditure that supports long-term growth is likely to focus on education and human capital formation in general and possibly also on productive public investment in areas where private markets provide insufficient supply. But even in such areas the full cost of such expenditure, including induced distortions and the need to finance via taxes, needs to be taken into account.

The efficiency of non-productive expenditure can be increased by improving the targeting of transfer payments and by reducing disincentives to work and save in tax/benefit systems. Similarly, cross-country studies show that large efficiency improvements in the areas of health and education expenditure could be gained in many countries by bringing spending efficiency to the level of the best performers.⁶ At a more general level, evidence suggests a negative relationship between government transfers and regional economic growth (Checherita et al., 2009).

The potential for efficiency improvements in the area of social transfers can be gleaned from Chart 3. Using the latest available data for 2008, the chart shows the volume of social transfers for a number of EU countries on the vertical axis and the reduction in the share of households at risk of poverty on the horizontal axis. Using public money efficiently suggests that countries strive for positions as far to the right of the chart as possible for any given level of expenditure.

Chart 3 Social transfers and the reduction in the share of households at risk of poverty in 2008



Treating Ireland as an outlier, the Netherlands, Luxembourg and Finland present a kind of efficiency frontier. For their respective spending levels (relatively low for the Netherlands, relatively high for Finland), they achieve the largest reduction in poverty risks in the sample. Countries above and to the left of this frontier achieve less reduction of poverty risk at the same or even higher expenditure (relative to their GDP).

The chart suggests that the room for improvement in expenditure efficiency is generally large. In fact, it appears very large for some southern European countries, which incidentally are the also the ones with the highest debt-to-GDP ratios (shown in parentheses) in the sample. It is important to note that the possible efficiency gains as suggested by the chart would not result in a reduction in living conditions for the poor. The same (or improved) conditions could be achieved with less money by allocating funds in a better way.

⁶ See, for example, Afonso and St. Aubyn (2006) in the case of education.

Finally, reforms of public pension systems are of particular interest. Given projected increases in life expectancy, the extension of working lives should not be inhibited by legal or economic disincentives to continue working. Reforms in this area can lead to substantial improvements in fiscal sustainability, as longer working lives tend to raise GDP, while the duration of pension payments is also reduced.

The beneficial effect of reforms in these areas depends critically on sufficiently flexible structural conditions, in particular with regard to labour market flexibility. This is necessary so that the additional supply of labour can be absorbed into the productive economy. Structural reforms, such as liberalisation of labour markets, may be necessary in some countries.

4 THE BENEFITS OF CONSOLIDATION IN THE SHORT RUN: THE CONVENTIONAL VIEW

Fiscal consolidation has, by definition, an adverse direct effect on domestic demand in the short run. However, the economic literature has identified a number of reasons why the overall effect may be less negative than the pure effect of the fiscal contraction, and it may even be positive (Giavazzi and Pagano, 1990; Alesina and Perotti, 1995). It is therefore important to determine whether any such reasons are likely to apply, particularly in the situation in 2010 and beyond. Moreover, it is important to know whether consolidation would work pro-cyclically, i.e. during a period of weak growth and negative output gaps, or counter-cyclically, i.e. during a period of strong growth and positive output gaps, in order to better gauge its appropriateness. At the same time, significant caution is warranted when extrapolating past findings on fiscal demand effects and multipliers into the future. In particular, the pre-conditions underlying earlier studies of i) generally modest public debt and only isolated incidences of large public debt, ii) little uncertainty over public liabilities and iii) calm financial markets are currently not met. Therefore, it is inappropriate to extrapolate from such past findings the impact of consolidation in the fiscal and financial environment of the autumn of 2010 (see, for example, IMF, 2010b).

4.1 UNCERTAINTIES ABOUT THE EFFECTIVENESS OF FISCAL POLICIES AND MULTIPLIERS

In the short run, fiscal consolidations reduce aggregate demand and thus have a negative impact on economic activity. At the same time, via the expectation channel some of the long-term effects discussed above can induce economic reactions which may offset the negative demand effect already in the short run. In particular, the decline in the real interest rate induced by consolidation increases wealth by increasing the net present value of future income streams. This positive wealth effect supports household consumption in the short run. For a comprehensive assessment, it is therefore

important to identify the conditions under which such offsets are likely to be particularly large.

It should be noted that the positive fiscal multiplier established in the literature on expansionary fiscal policies should not be interpreted as evidence for the opposite case, i.e. for the growth-reducing effects of fiscal consolidation. First, what is needed is a permanent improvement in fiscal sustainability. Moreover, the economic conditions underlying fiscal expansions are likely to be different from those prevailing for fiscal consolidation. Notably, expectation effects are likely to work in a growth-supporting direction in both cases, i.e. supporting the impact on growth of fiscal loosening but offsetting the negative demand effect of fiscal tightening.

The positive expectation effects will be particularly large under the following conditions (ECB, 2010): i) the fiscal starting position is weak, so consolidation is expected to lead to a significant improvement in sustainability and overall stability; ii) the fiscal consolidation plan is ambitious and credible, possibly part of an overall structural reform agenda, so that the expectations of lasting improvement in the fiscal situation rise; iii) the composition of the adjustment focuses on reducing disincentives to work and save, enhancing expenditure efficiency and protecting growth-friendly expenditure so that the supply conditions in the economy improve swiftly; iv) the share of households that can adjust their saving in response to the fiscal consolidation (i.e. Ricardian households) is high, and v) part of the consolidation impact is offset via the exchange rate or low interest rates.

Looking at the situation in the autumn of 2010, the condition regarding the starting position is clearly fulfilled and there are substantial gains in sustainability to be expected from the implementation of consolidation strategies. In particular, it is clear that the cost of inaction would be huge: not addressing the fiscal imbalances swiftly and decisively would only

lead to higher adjustment needs in the future. The choice of consolidation strategy is in the hands of governments. It is up to governments to set out consolidation strategies which are sufficiently credible and ambitious to convince economic agents of the future sustainability of public finances. At the same time, the need for consolidation provides a good starting point to initiate long overdue structural reforms that will strengthen long-term growth expectations. In practice, the verdict on the quality of consolidation is still pending, as the implementation of consolidation plans has either only just started in 2010 or will start in 2011. A number of countries in the euro area, notably those with the largest imbalances, have set out important structural reforms as part of their medium-term strategies.

The different channels through which fiscal consolidation affects the economy can be modelled in a dynamic stochastic general equilibrium (DSGE) framework. Results from the ECB's own euro area model show that the short-run costs of fiscal consolidation are limited, and they are further reduced when positive expectation effects are taken into account. In particular, fiscal consolidation leads economic agents to reduce the required risk premium on government bonds, which also affects the overall level of interest rates in the economy. This stimulates overall activity. Over time, the consolidation allows distortive taxes to be reduced, which contributes to stronger long-term growth. The effect is particularly strong for expenditure-based consolidations (ECB, 2010). Naturally, such model-based results need to be interpreted with caution. In particular they depend to some extent on the specificities of the model applied, including, for example, assumptions on the elasticity of labour supply in response to changes in take-home pay.

4.2 UNCERTAINTY ABOUT THE ECONOMIC AND FISCAL POSITION

A further consideration for the desirability of consolidation relates to its timing over the business cycle and its degree of pro-cyclicality.

However, experience has shown that it is often difficult to know in real time the “true” situation of the economy, in particular around economic turning points. For example, in the spring of 2007, just before the outbreak of the financial crisis, it was widely held that advanced economies had not really been in a boom and the output gap was still negative or at most slightly positive. Three years and a big crisis later, figures have been revised dramatically (Table 5). On average, for the euro area the output gap in 2007 was +2.5%, or 3 percentage points higher than assumed in real time. For a few countries the revision exceeded 5 percentage points. Consequently, cyclically adjusted balances (CABs) as an indicator of fiscal soundness were also revised significantly.⁷

The implications of this are two-fold: first, fiscal policies were much less prudent in boom times than originally thought, as the revision in the output gap figures was mainly due to a downward revision of trend growth; second, looking at the situation in 2010, when the economy has seemingly turned around, the question again arises as to whether output gap and CAB figures produced for 2010 in real time are anywhere near what forecasters assume. Output gap forecasts for 2010-11 for the euro area, the United States, Japan and the United Kingdom were between 1% and 4% in spring 2010. However, OECD estimates are much higher. And 2011 figures for some countries were already revised significantly downwards between the autumn of 2009 and the spring of 2010. Given structural economic distortions, such as over-investment in cars, construction and finance, it is not inconceivable that output gap estimates are again too high if they reflect over-investment rather than lack of demand. Hence, conducting fiscal consolidation in 2010-11 may prove much less pro-cyclical than perceived. It is also worth recalling the experience of the 1970s, when the Federal Reserve assumed the

⁷ In retrospect, one could have been more sceptical about output gap figures, particularly in countries where strong real estate and financial sectors pointed to significant resource misallocation and current account deficits pointed to excess demand. For a more detailed discussion, see Schuknecht (2009).

Table 5 Output gap and cyclically adjusted balance revisions

	Output gap – 2007 (percentage of potential GDP)		Output gap – 2010 (percentage of potential GDP) Spring 2010	Cyclically adjusted balance – 2007 (percentage of GDP)		Cyclically adjusted balance – 2010 (percentage of GDP) Spring 2010
	Spring 2007	Spring 2010		Spring 2007	Spring 2010	
Belgium	-0.5	2.3	-2.4	0.1	-1.4	-3.7
Germany	0.4	2.7	-2.7	-0.8	-1.2	-3.6
Ireland	-0.9	4.4	-7.3	1.8	-1.6	-8.7
Greece	1.5	4.5	-2.7	-3.1	-7.0	-8.2
Spain	-1.0	1.7	-4.6	1.8	1.2	-7.8
France	-0.9	1.9	-2.7	-2.0	-3.7	-6.6
Italy	-1.0	3.0	-3.4	-1.6	-3.0	-3.6
Cyprus	-0.8	2.4	-2.1	-1.1	2.5	-6.3
Luxembourg	-0.4	5.2	-4.1	0.6	1.1	-1.4
Malta	-0.6	0.9	-1.6	-1.9	-2.5	-3.8
Netherlands	-0.4	2.2	-2.6	-0.4	-1.0	-4.9
Austria	0.5	2.6	-2.3	-1.1	-1.6	-3.6
Portugal	-1.7	0.8	-2.4	-2.7	-3.0	-7.5
Slovenia	0.5	6.3	-3.7	-1.7	-2.9	-4.4
Slovakia	1.7	6.3	-2.3	-3.4	-3.7	-5.4
Finland	0.3	5.0	-4.6	3.5	2.6	-1.4
Euro area	-0.4	2.5	-3.1	-0.8	-1.9	-5.1
Canada	-0.4	1.0	-3.4	0.8	1.2	-1.9
Japan	0.3	2.2	-3.1	-2.7	-3.0	-6.6
United Kingdom	-0.4	2.7	-3.9	-2.5	-3.9	-10.4
United States	0.1	0.9	-3.2	-2.8	-3.1	-9.3

Sources: Spring 2007 and Spring 2010 releases of European Commission Economic Forecasts in the case of Europe and June 2007 and June 2010 releases of the OECD Economic Outlook in the case of Canada, Japan and the United States.
Note: Cyclically adjusted balance numbers in the case of Canada, Japan and the United States are ratios of potential GDP.

existence of a huge output gap after the first oil crisis which later turned out to be much smaller. Unduly expansionary policies then became the harbinger of inflation (Orphanides and van Norden, 2002). The benefits of fiscal prudence are more concealed in the sense that prudence only proves itself to be the more appropriate fiscal policy ex post.

All in all, there are good reasons to believe that the short-term negative demand effects of well-conceived fiscal consolidation are likely to be small if, indeed, they are negative at all. Moreover, it is quite conceivable that consolidation starting in 2010/11 will turn out much less pro-cyclical than suggested by real-time figures for 2010 and beyond.

5 THE SHORT AND LONG-TERM BENEFITS OF CONSOLIDATION: NON-LINEARITIES VIA FISCAL-FINANCIAL LINKAGES

The biggest positive confidence-related effects of consolidation on the economy and demand would probably arise from reducing the risk of adverse feedback-loops between concerns about public finances and financial instability. There are a number of channels worth discussing briefly here. As mentioned above, concerns about fiscal sustainability can be exacerbated by contingent or materialising obligations from the financial sector. The resulting increase in interest rates and government bond spreads not only feeds back into public finances but also into the health of the financial sector. Changes in the nominal value of government bonds (lower value due to higher interest rates and spreads) or a rating downgrade of a government bond, for example, can affect the quality and eligibility of a bank's collateral pool and result in margin calls, thereby limiting access to and raising the costs of external funding. Lower bond values can also affect the size of banks' balance sheets and erode their capital base. Funding and capital problems can then, in turn, feed back to the government and worsen its fiscal problems.

Spillovers to the real economy can strengthen this adverse feedback loop. Funding and capital

problems can force banks to extend fewer loans to the private sector. A loss of public confidence in governments and banks can further worsen the funding problems for these sectors and the real economy. Cross-border linkages through international government bond ownership or bank deposits can exacerbate these problems. In particular countries deemed to be in a similar situation and with net foreign funding needs may become subject to contagion and "sudden stops" where all market-based funding ceases. A vicious circle of bad fiscal positions which push up government bond spreads, which, in turn, undermine financial stability and, thus, the real economy and the fiscal outlook, is certainly conceivable. Moreover, as we will show, the speed at which market confidence can be lost and financial and even real sector repercussions can emerge has turned out to be extremely fast. As a result, non-linearities with tail risks of very drastic events can be significant.

There is one aspect of potential fiscal-financial transmission where important changes over the past decades are worth flagging. If public debt is mainly in the hands of domestic economic agents, there may be less risk of volatility in market access, assuming that there is less asymmetric information among domestic debt holders. The risk of "runs" and "sudden stops" is therefore smaller. Moreover, access to market

Table 6 Debt ownership

(percentage of total debt)

	Domestic		Foreign	
	1999	2009	1999	2009
Germany	65.1	47.0	34.9	53.0
Spain	73.2	54.8	26.8	45.2
France	72.0	32.1	28.0	67.9
Italy	66.3	57.2	33.7	42.8
Netherlands	67.0	28.9	33.0	71.1
Euro area	67.5	46.5	32.5	53.5
Canada	-	-	-	-
Japan	93.2	94.0	6.8	6.0
United Kingdom	82.7	71.8	17.3	28.2
United States	60.8	47.5	39.2	52.5

Sources: National sources (Germany – Deutsche Bundesbank; Spain – Tesoro Público; France – Agence France Trésor; Italy – Banca d'Italia; Netherlands – Dutch State Treasury Agency; Japan – Bank of Japan; the United Kingdom – Debt Management Office; the United States – Department of the Treasury) and the ESCB in the case of the euro area.

Notes: The numbers may not be fully comparable across the countries due to different definitions of debt. For some countries the data is based on a narrower concept of debt than general government debt (marketable debt; national, regional and local government debt).

financing can be increased if debt holders are induced to keep holding this debt (for instance via regulation or capital controls) and/or to accept a low interest rate (financial repression). This is more likely to hold for domestic than for foreign debt holders.

In this regard, developments over the past decade are enlightening, as shown by data on the share of specific countries' outstanding debt that is held outside the issuing country (Table 6). They suggest greatly increased financial globalisation and a greater dependence of governments on foreign investor confidence. By 2009, for example, over half of euro area debt was held outside the issuing country. This compares to one third only a decade ago. The picture is similar for the United States where less than half of government debt is held by residents. Japanese public debt remains almost entirely in domestic hands.

The relevance of strong, fast and non-linear fiscal-financial interlinkages in the context of the various stages of the financial crisis that culminated in the fiscal crisis of spring/summer 2010 can be illustrated with a number of charts (see Chart 4, panels a to f). First, looking at money market rates since the start of the crisis in panel a, the sharp increase in the spread

between secured and unsecured rates after the Lehman Brothers default (the second phase of the crisis after the first wave of turmoil from August 2007) is well-known. At that time, even money market funds posted negative returns and threatened serious disruptions due to the withdrawal of investments that induced fire sales of assets and contributed to adverse financial-real economy spillovers. When looking at the third phase of fiscal crisis in the spring of 2010, it can be seen that money market rates were edging up again, this time reflecting concerns over fiscal positions.

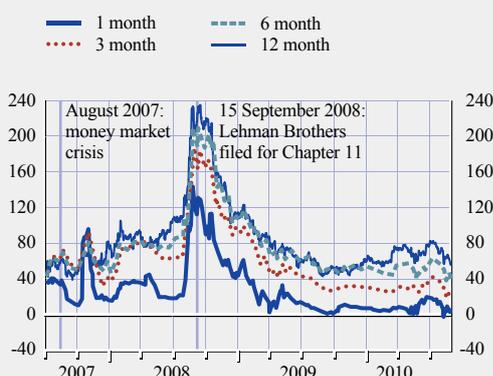
The serious repercussions of the Lehman Brothers default on corporate bond markets are visible in panel b. As a consequence, securities values declined (wealth and collateral effects) and markets became very thin. This risked disturbing the financing of corporations and financial institutions. Spreads increased again in the spring of 2010, most notably in the markets of countries affected by the fiscal crisis.

Panel c reports government bond spreads as compared to Germany for a set of euro area countries over the financial crisis. Spreads went up somewhat in the post-Lehman period clearly reflecting a sharper distinction between government borrowers. In fact, elasticities

Chart 4 Fiscal-financial interlinkages

(1 July 2007 – 15 October 2010; basis points)

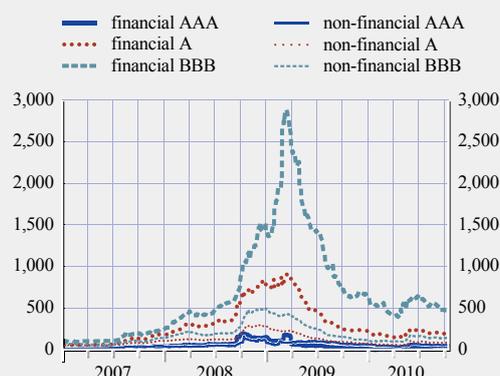
a) Spreads between Euribor and EONIA swap rates



Sources: Bloomberg and ECB calculations.

(1 July 2007 – 15 October 2010; basis points)

b) Corporate bond spreads for different rating categories

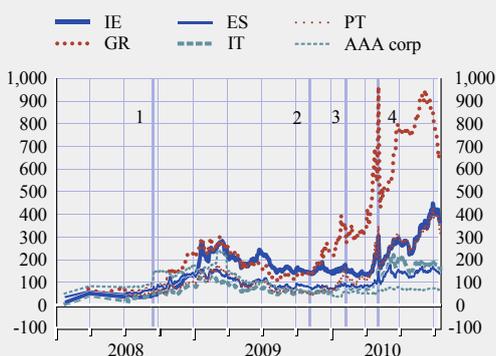


Source: Thomson Reuters Datastream.
Notes: Daily data. Euro issues.

Chart 4 Fiscal-financial interlinkages (cont'd)

(January 2008 – 15 October 2010, end-of-month until mid-2008, daily data thereafter; basis points)

c) Spread over German 10-year government bond yield

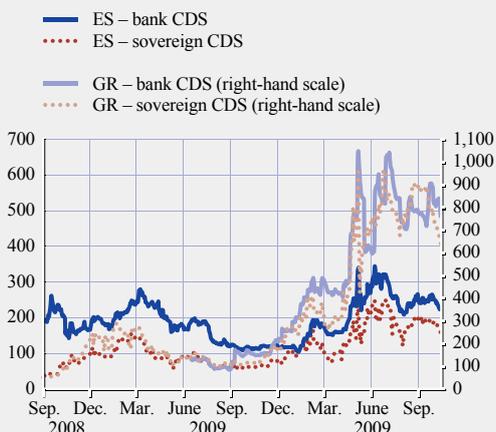


- 1 15 September 2008: Lehman filed for Chapter 11
- 2 5 November 2009: revision to 2009 estimate deficit in GR
- 3 11 February 2010: EU announcement to safeguard financial stability
- 4 9 May 2010: approval of European Financial Stability Facility

Sources: Bloomberg, Thomson Reuters Datastream and ECB calculations.
Notes: Bond yield spreads vis-à-vis the German 10-year government bond, end-of-the-month and end-of-day data (last value 15 October 2010 17:00 CET; 15 October 2010, 19:00 CET for AAA corporate). Euro Area corporate AAA rated bond yields (maturity 7-10 years).

(1 September 2008 – 15 October 2010; basis points)

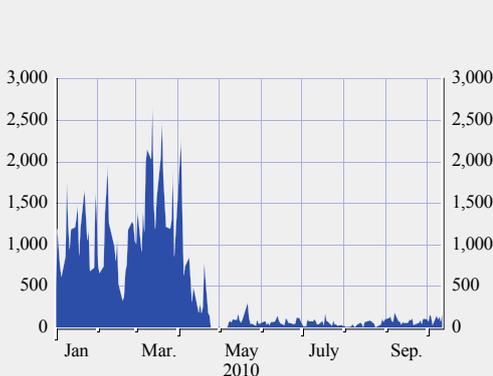
e) Sovereign and bank CDS spreads



Sources: Bloomberg, Thomson Reuters Datastream and ECB calculations.
Note: For each country, the CDS spreads of the largest banks for which CDS quotes were available were used to calculate the average CDS spread of banks in that country.

(1 January – 15 October 2010; daily data; EUR millions)

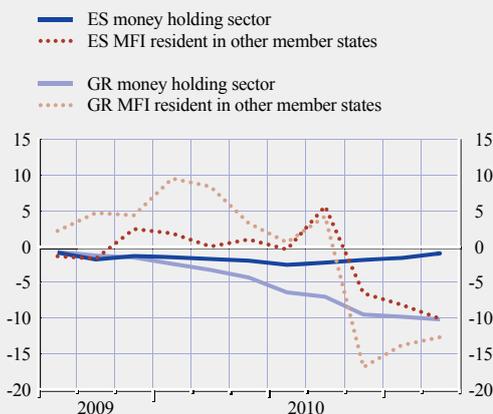
d) Trading volumes in Greek government bonds



Source: Bank of Greece.
Note: Volumes traded on secondary market platform run by the Bank of Greece (HDAT).

(October 2009 – August 2010; cumulative percentage change; stock; seasonally adjusted)

f) MFI deposits held by money-holding sector and by MFI resident in other member states in Greece and Spain



Source: ECB (BSI statistics).
Notes: Growth rates at the end of the period; monthly data.

of spreads in relation to deficits and debt are estimated to have increased 8 to 12-fold in the post-Lehman period compared to before (Schuknecht et al., 2010). However, this is much less than after the onset of the fiscal crisis. In October 2009 Greece announced a deficit ratio for that year of 12.5%. The true extent of Greek troubles was more widely recognised in the spring of 2010 and notably just before 7 May. In that period Greek government debt spreads increased seven-fold from about 130 basis points to above 900 basis points on 7 May.

At first, the rise in risk premia on Greek government debt had no major effect on other government debt in the euro area. However, in April 2010 Portuguese and Spanish spreads in particular (where debt prospects were much more favourable, as discussed above) started rising in tandem with those of Greece.

Not only did risk premia in government bond markets increase considerably after Greece announced its huge fiscal imbalances, but trading in Greek debt also came to a virtual standstill rather suddenly in early May 2010 (Chart 4, panel d). While other countries avoided this type of “sudden stop”, some of their markets also became much more erratic and less liquid.

The severe adverse fiscal-financial linkages due to government solvency concerns and insufficiently ambitious fiscal policies can be illustrated further by the remaining two panels in Chart 4. Panel e shows credit default swap spreads in the Greek and Spanish banking systems. Before the end of 2009, Spanish CDS and government bond spreads were not particularly closely correlated (Greek data was not available). However, with the start of the fiscal crisis, bank CDS spreads moved very much in tandem with government CDS spreads. It is no secret that banks from these countries increasingly financed themselves through ECB operations as market access became more limited. Panel f illustrates another risk from fiscal concerns, i.e. deposit outflows and tightening bank lending standards as customers withdraw support and banks have increasing

funding difficulties. This was relatively gradual in the case of Spain and rather sudden for Greece.

Even with this evidence of strong non-linearities and sudden stops, market behaviour might have been even more extreme had it not been for the combined efforts of European governments, the IMF and the ECB and the countries’ own adjustment efforts. We do not know for certain, but it needs to be stressed that, without the ambitious adjustment effort under the Greek programme and by Ireland, Spain and Portugal in the context of their medium-term fiscal strategy and as an ad hoc package in the spring of 2010, it is hard to conceive that international support would have come forth and that markets would have calmed down. This, in turn, could well have resulted in major spillovers into confidence in the real economy of the affected countries and, via contagion and contagion fears, also to other countries.

All in all, this discussion has shown that fiscal-financial spillovers can be significant even in countries with seemingly less vulnerable positions that are willing to consolidate and that have the prospect of international financial support. Major pre-emptive fiscal adjustment can then become the best option from a demand perspective if the alternative is bankruptcy or a very strong adjustment in the context of an international adjustment programme.⁸

It is also important that the “core” countries that are able to serve as regional or global insurers maintain their safety margins and do not become a case for insurance themselves. Given that the transmission of a loss in confidence via fiscal-financial channels has been extremely strong and fast even for rather small countries, this argument is all the more important for “core” countries in order to anchor expectations of stability at the country level and at the more

⁸ It would, however, be a misunderstanding of our argument to conclude that consolidation would quickly result in the resumption of strong growth. It is rather that the prospect of a gradual and moderate recovery is much better than the alternative of lower growth or even macroeconomic instability.

systemic, international level. This is a strong argument in favour of ambitious consolidation in all countries in a timely manner. At the same time, there is no doubt that a country with manageable imbalances can afford a more gradual adjustment path than a country with very large imbalances or even acute financing difficulties.

**5 THE SHORT AND
LONG-TERM BENEFITS
OF CONSOLIDATION:
NON-LINEARITIES
VIA FISCAL-FINANCIAL
LINKAGES**

6 CONCLUSIONS AND POLICY IMPLICATIONS

In summary, the fiscal situation in the euro area and G7 countries with very high public debt levels, unsustainable debt trends and large and uncertain contingent liabilities is very serious. While, overall, the financing of public debt has not been a problem for most large countries so far, market participants have questioned the sustainability of debt in some countries. This paper argues for significant consolidation in Europe and other advanced economies without delay. First, there is a need to reduce unsustainable public liabilities with their deleterious effects on long-term growth and confidence. But even in the short term, the benefits of consolidation are likely to outweigh their costs in an environment of strong, non-linear fiscal-financial interlinkages. Consolidation is needed to underpin confidence in fiscal solvency at the country level and prevent adverse international externalities.

There are two further important policy considerations. First, how should the consolidation be undertaken, and how far should it go? To reap the full short-run and long-run benefits, consolidation needs to reflect a regime change, moving away from discretionary and disjointed ad hoc policy decisions towards an ambitious, comprehensive and credible reform strategy based on a sound institutional framework.

More concretely, announced plans and immediate measures must convince economic agents that the (present and any future) government will indeed achieve a significant improvement in fiscal sustainability, while strengthening the foundations for strong and balanced economic growth (Cottarelli and Schaechter, 2010). Given the size of the challenge, such strategies need to cover the medium term. In the situation of the autumn of 2010, this means governments need to implement immediately plans to return to positive primary balances over the next few years. All euro area countries need to correct their excessive deficits in accordance with their commitments and reach balanced budgets by

2016. This would imply high primary surpluses which would, in turn, help to achieve the necessary debt reduction.

The debt reference value of the Maastricht Treaty, 60% of GDP, remains appropriate as a ceiling for safe public debt ratios. Figures of 90% that are being floated in parts of the literature are much too high given the vulnerability and sudden-stop-like experiences in the fiscal crisis of spring 2010. Moreover, contingent liabilities, including from the household and financial sectors, need to be accounted for and reduced immediately via ambitious social security and financial sector reform.

The above discussion and the literature have shown that consolidation should generally be based on expenditure reduction. Public expenditure ratios were high before the crisis and rose sharply between 2007 and 2009/10. At the same time, there is considerable evidence of scope to improve expenditure efficiency in many countries. Reducing expenditure ratios at least to below the pre-crisis levels of about 45% in the euro area economies is a first goal. Further expenditure reductions could provide additional support to long-term growth via lower taxes and reduced distortions in the economy.⁹

The implementation of sizeable and well-targeted expenditure cuts early in the consolidation phase will induce additional confidence effects as they demonstrate the political resolve of governments. Medium-term fiscal structural reforms need to address already identified future burdens, notably in the areas of pension and health care systems.

The chances of successful consolidation can be increased by adapting the institutional environment of fiscal policy-making at the national level. The ambitious expenditure reduction may best be achieved by setting binding, comprehensive medium-term expenditure targets which are translated into annual budget allocations (Holm-

⁹ See, for example, Tanzi and Schuknecht (2000) for further discussion.

Hadulla et al., 2009). Independent national fiscal councils can support a de-politicised assessment of policies, leaving policy makers to focus on agreeing on the objectives to be achieved.

Moreover, fiscal reforms should be coupled with structural reforms in order to maximise the benefits for growth and sustainability. Labour and product markets need to be flexible. Financial sector regulation needs to ensure sound incentives and early detection of emerging risks. In addition, central bank independence, the prohibition of monetary financing of government obligations and constraints on intergovernmental bailouts in Europe are aimed at reducing the incentives for profligate fiscal policies and should therefore be fully respected in order to prevent moral hazard.¹⁰

The second consideration complements the first. It calls into question the prevailing engineering approach to macroeconomic policy making that seems to be based on the belief that economic recovery can be fine-tuned via fiscal policies.¹¹ The sections above have shown that little is known about the size of fiscal multipliers. There is also generally great uncertainty about the true state of the economy and even the scale of public liabilities. As a result there have already been inappropriate policies, such as the fiscal stimuli in Spain and Ireland in 2007 and 2008, in Portugal in 2009 and in Greece up to 2009, before financial markets forced a drastic turnaround first in market confidence and then in fiscal policies in these countries. The experiences of these four countries are also good examples of how little we know about sustainable debt ratios, and how strong, fast and non-linear market reactions can be. But while many observers complain that markets which ultimately punish unsustainable fiscal behaviour may not get it perfectly right, and react too late and too strongly, few observers seem to remember that politicians may not get it right either. In this environment of uncertainty and non-linearity, which is akin to the environment for emerging markets in the past, fiscal engineering is a very risky approach.

The risks and costs of fiscal engineering with too little consolidation too late are exacerbated by two further factors. Policy makers may react to solvency concerns and loss of confidence with macroeconomic stop-gap measures such as financial repression and interference with central banks (although for the euro area this is legally excluded). This could, of course, mitigate fiscal solvency risks in the short run, but at a high price in the long run. Moreover, there is a serious risk of microeconomic policy errors such as trade protection, regulatory measures etc. It is now widely accepted that such policy errors further aggravated the great depression (e.g. Kindleberger, 1973; Smiley, 2002). Such policy errors, which would themselves be consequences of fiscal-financial turmoil, would have major consequences for the financial sector and real economy, shift the supply curve inward and further undermine economic stability.

¹⁰ For the euro area, one can argue that the institutional framework had shown deficiencies in the fiscal area. The Stability and Growth Pact was watered down in 2005 (ECB, 2005; Morris et al., 2006). In late 2008, it was de facto suspended with the European Economic Recovery Programmes. The surveillance process (and related communications) under the Pact then stressed the importance of fiscal expansion rather than compliance with Pact rules. In spring 2010, euro area countries (together with the IMF) undertook another “ad hoc” adjustment to their institutional framework. They first agreed on an adjustment and support programme for Greece and subsequently introduced two support facilities. While the first can tap EU funds, the second (the European Financial Stability Facility) is a special purpose vehicle that can support Member States in need by issuing debt that is guaranteed by the other Member States. The ECB lifted the rating threshold for Greek government debt in its collateral framework and started the Securities Market Programme for buying certain government bonds. In the other G7 countries, budgetary institutions were already much weaker at the outset of the crisis and played no role in the debate on constraining fiscal imbalances. Moreover, some central banks engaged in major purchases of government debt. The UK and Japanese central banks held about 15% of GDP in government debt in the first quarter of 2010 with the Bank of England financing more than the full UK deficit in 2009 (IMF, 2010b). Holdings of US government debt at the Federal Reserve were about 5% of GDP in the same period.

¹¹ In the summer/autumn of 2010, for example, many expert and political opinions argued against fiscal consolidation and even advocated further stimulus in some countries in the belief that fiscal policies could engineer the recovery. There also appeared to be an unspoken belief that “a little” inflation might help to eliminate the public (and private) debt overhang without any adverse fiscal-financial repercussions (even though investors would then take flight out of assets denominated in the inflationary currency).

Finally, it is well known that fiscal policy is subject to a deficit bias. Politicians are all too willing to seize upon excuses that allow them to delay difficult decisions. In this environment, expert advice needs to be particularly prudent so as not to induce destabilising policies. If things go fundamentally wrong, the pressure on central banks to accommodate fiscal problems could increase enormously.

All in all, uncertainty about the magnitude of public liabilities and what constitutes a sustainable fiscal position, the effects of fiscal policy on the economy, the strong and non-linear reaction of markets, the risk of a cascade of policy errors and adverse political economy incentives are additional reasons for early and determined fiscal consolidation. They suggest a need for great caution in efforts to “fine tune” the economy via “fiscal engineering”.

BIBLIOGRAPHY

- Afonso, A. and St. Aubyn, M. (2006), “Cross-country efficiency of secondary education provision: A semi-parametric analysis with non-discretionary inputs,” *Economic Modelling*, Vol. 23(3), pp. 476-491, May.
- Afonso, A., Schuknecht, L. and Tanzi, V. (2005), “Public Sector Efficiency: An International Comparison”, *Public Choice*, 123, pp. 321-347.
- Alesina, A. and Ardagna, S. (2009), “Large changes in fiscal policy: taxes versus spending”, *NBER Working Paper*, No 15438.
- Alesina, A. and Perotti, R. (1995), “Fiscal expansions and fiscal adjustments in OECD countries”, *Economic Policy*, 10/21, pp. 205-248.
- Barrios, S. and Schächter, A. (2009), “Gauging by numbers: A first attempt to measure the quality of public finances in the EU”, *European Economy. Economic Papers*, No 382.
- Checherita, C. and Rother, P. (2010), “The impact of high and growing government debt on economic growth: an empirical investigation for the euro area”, *Working Paper Series*, No 1237, ECB.
- Checherita, C., Nickel, C. and Rother, P. (2009), “The role of fiscal transfers for regional economic convergence in Europe”, *Working Paper Series*, No 1029, ECB.
- Cottarelli, C. and Schächter, A. (2010), “Long Term Trends in Public Finances in the G-7 countries”, *IMF Staff Position Note*, SPN/10/13, Washington DC.
- European Central Bank (2010), “The effectiveness of euro area fiscal policies”, *Monthly Bulletin*, July.
- European Central Bank (2005), “The reform of the Stability and Growth Pact”, *Monthly Bulletin*, August.
- European Commission and Economic Policy Committee (2009), “The 2009 Ageing Report: economic and budgetary projections for the EU-27 Member States (2008-2060)”, *European Economy*, No 2.
- European Commission (2010), “Public Finances in EMU – 2010”, *European Economy*, No 5, Brussels.
- European Commission (2009), “Public Finances in EMU – 2009”, *European Economy*, No 5, Brussels.
- Giammarioli, N., Nickel, C., Rother, P. and Vidal, J. P. (2007), “Assessing fiscal soundness: theory and practice”, *Occasional Paper Series*, No 56, ECB.

- Giavazzi, F. and Pagano, M. (1990), “Can severe fiscal contractions be expansionary? Tales of two small European countries”, *NBER Macroeconomics Annual*, Vol. 5, National Bureau of Economic Research, Cambridge MA.
- Hauptmeier, S., Heipertz, M. and Schuknecht, L. (2007), “Expenditure Reform in Industrialised Countries: A Case Study Approach”, *Fiscal Studies*, 28(3), pp. 293-342.
- Hauptmeier, S., Sanchez-Fuentes, A.J. and Schuknecht, L. (2010), “Towards expenditure rules and fiscal sanity in the euro area”, mimeo, Frankfurt.
- Hayek, F.H. (1960), *The Fatal Conceit*.
- Hemming, R., Kell, M. and Schimmelpfennig, A. (2003), “Fiscal Vulnerability and Financial Crisis in Emerging Market Economies”, *IMF Occasional Paper*, No 218, Washington DC.
- Holm-Hadulla, F., Hauptmeier, S. and Rother, P. (2010), “The impact of numerical expenditure rules on budgetary discipline over the cycle”, *Working Paper Series*, No 1169, ECB.
- Homer, S. and Sylla, R. (2005), *A History of Interest Rates*, Wiley, Hoboken NJ.
- International Monetary Fund (2010a), *Fiscal Monitor*, Washington DC, May.
- International Monetary Fund (2010b), *World Economic Outlook*, Washington DC, April, Chapter 3.
- International Monetary Fund (2009), *World Economic Outlook*, Washington DC, April.
- Keynes, J. M. (1919), *The economic consequences of the peace*.
- Kindleberger, C.P. (1973), *The world in depression, 1929-1939: History of the world economy in the twentieth century, Vol. 4*.
- Kumar, M. and Woo, J. (2010), “Public Debt and Growth”, *IMF Working Paper*, 10/174.
- Larch, M. and Turrini, A. (2008), “Received wisdom and beyond: Lessons from fiscal consolidation in the EU”, *European Economy. Economic Papers*, No 320.
- Laubach, T. (2009), “New evidence on the interest rate effects of budget deficits and debt”, *Journal of the European Economic Association*, Vol. 7(4), pp. 858-885.
- Leeper, E. M. (2010), “Monetary Science, Fiscal Alchemy”, paper presented at Jackson Hole Conference.
- Morris, R., Ongena, H. and Schuknecht, L. (2006), “The reform and implementation of the Stability and Growth Pact”, *Occasional Paper Series*, No 47, ECB.
- Nickel, C. and Vansteenkiste, I. (2008), “Fiscal policies, the current account and Ricardian equivalence”, *Working Paper Series*, No 935, ECB.

- Nickel, C., Rother, P. and Zimmermann, L. (2010), “Large public debt reductions”, *Working Paper Series*, No 1241, ECB.
- Orphanides, A. and van Norden, S. (2002), “The Unreliability of Output Gap Estimates in Real Time”, *Review of Economics and Statistics*, Vol. 84(4), pp. 569-583.
- Ostry, J. D., Ghosh, A. R., Kim, J. I. and Qureshi, M. S. (2010), “Fiscal space”, *IMF Staff Position Note*, SPN/10/11, Washington DC.
- Reinhart, C. and Rogoff, K. (2010), “Growth in a Time of Debt”, *NBER Working Paper*, No 15639.
- Schuknecht, L. (2009), “Booms, busts and fiscal policy: where does the future lie?”, *Politeia*, London.
- Schuknecht, L., von Hagen, J., and Wolswijk, G. (2010), “Government Bond Risk Premiums in the EU revisited: The Impact of the Financial Crisis”, forthcoming in *European Journal of Political Economy*.
- Smiley, G. (2002), *Rethinking the Great Depression*, Ivan R. Dee, Chicago IL.
- van Riet, A. (ed.) (2010), “Euro area fiscal policies and the crisis”, *Occasional Paper Series*, No 109, ECB.
- Tanzi, V. and Schuknecht, L. (2000), *Public Spending in the 20th Century: A Global Perspective*, Cambridge University Press.

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