

COMPARING THE RECENT FINANCIAL CRISIS IN THE UNITED STATES AND THE EURO AREA WITH THE EXPERIENCE OF JAPAN IN THE 1990s

ARTICLES

Comparing the recent financial crisis in the United States and the euro area with the experience of Japan in the 1990s

The global financial crisis, which began as a US sub-prime debt crisis and has subsequently undergone a number of different stages – the latest being the euro area sovereign debt crisis – sharply changed the growth trajectory in the United States and the euro area. A severe recession was followed by a relatively muted recovery and a period of modest growth is expected to follow over the next few years. Consequently, several commentators have compared the current situation in the United States and the euro area with Japan’s so-called “lost decade” in the 1990s. The latter is the most recent episode in which an advanced economy experienced a prolonged adjustment of sectoral balance sheets, persistent weak economic activity, rapidly rising government debt, and a sharp and protracted downward correction in asset prices.

However, there are important differences between the form of imbalances that occurred in Japan and those that triggered the recent financial crisis affecting the United States and the euro area. In Japan, it was mainly the corporate sector that needed to rebalance from excessive leverage, while in the United States, balance sheet problems lay with households, following the housing and credit boom. Meanwhile, in the euro area, balance sheet problems were less obvious at the aggregate level, but as the financial crisis progressed, regional imbalances intensified and leverage in some euro area Member States became excessive. Moreover, the severe deterioration in fiscal balances also led to increased risks to government debt sustainability, which lies at the heart of the sovereign debt crisis in a number of euro area countries, but also elsewhere.

The significant differences in the economic causes behind and the policy response to Japan’s “lost decade” compared with the financial crisis in the United States and the euro area suggest that each crisis is different and that the United States and the euro area are rather unlikely to tread the same path as Japan. At the same time, however, Japan’s experience highlights the difficulties for economies emerging from balance sheet recessions and having to unwind large imbalances to restore growth prospects and achieve a sustainable and enduring recovery. One lesson is that the financial system needs to be repaired before a durable economic recovery can take hold. Another lesson is that if reforms are not implemented, or if they are delayed, the recovery may be slow, fragile and prone to reversals, with problems stemming from structural deficiencies bound to reappear.

I INTRODUCTION

The recent financial crisis sharply changed the growth trajectory in the United States and the euro area. A severe recession in 2008-09 was followed by a recovery that was relatively muted by previous standards. Growth projections suggest a further period of rather weak growth over the next few years. While the factors behind the relatively poor growth performance are varied, one component has been the need for balance sheet adjustment as the private and public sectors in some countries attempt to unwind past excesses. This has led commentators to draw comparisons between the current situation in the United States and the euro area and Japan’s so-called “lost decade” in the 1990s, the most recent episode in which an advanced economy

experienced a period of prolonged balance sheet adjustment, stagnant activity and rapidly rising government debt following a sharp correction in asset prices.¹ This article reviews the Japanese experience and the implications of prolonged periods of balance sheet adjustment, drawing parallels with today and considering the possible lessons to be learnt.

Comparisons with the current situation need to be treated with some care: a particular historical episode cannot provide an exact template for subsequent events and, indeed, there are important differences between the type of imbalances that occurred in Japan

¹ See, for example, Shirakawa, M., “Deleveraging and Growth: Is the Developed World Following Japan’s Long and Winding Road?”, lecture at the London School of Economics, 10 January 2012.

and those that triggered the recent financial crisis affecting the United States and the euro area. The subsequent adjustments have also been shaped by the particular structural characteristics of each economy, the state of their public finances and the policy responses. Nonetheless, cross-country comparisons can highlight some of the causes and consequences of periods of substantial and persistent balance sheet adjustment processes.

The difficulties of comparison are particularly acute for the euro area, given the heterogeneous experiences of euro area countries since the start of the crisis. As far as possible, this article focuses on the euro area as a whole. Yet the country perspective – which is addressed in a separate box – is also necessary, particularly since the challenges facing some euro area

countries appear rather close to the difficulties of balance sheet adjustment.

The article is structured as follows. After a brief overview of Japan's experience (see Box 1), Section 2 describes the nature and size of the imbalances that built up prior to the crisis in Japan in the 1990s and those in the United States and the euro area at present. Section 3 outlines how the varied nature of the balance sheet problems shaped the subsequent adjustment, with Box 2 discussing the euro area country experience in more detail. Section 4 turns to the longer-term implications of the crises. Section 5 highlights the important role played by the financial sector in the resolution of such problems. Section 6 describes the policy response. Section 7 concludes.

Box 1

THE JAPANESE ECONOMIC EXPERIENCE DURING THE 1990s

Triggered by a collapse of stock and real estate prices in 1990-91, the Japanese economy experienced a prolonged period of balance sheet adjustment throughout the 1990s. A more sustained recovery of economic activity did not take hold before 2003 and it was not until 2005 that credit growth turned positive.

The impact of corporate deleveraging on investment and growth

Economic imbalances had built up during the investment boom of the late 1980s. At the time, the corporate sector had borrowed heavily from banks, typically with real estate as collateral. The sharp decline of property prices diminished the value of collateral and forced firms to clean up their balance sheets. This process of deleveraging manifested itself through an increase in corporate savings, a prolonged decline in private investment and a stagnation of firms' profits throughout the 1990s. However, the country-specific nature of the crisis meant that Japan's rebalancing could partly be achieved through net export growth amid rising global demand, although Japan's export-led recovery was set back by the Asian crisis in 1997 and two periods of a sharp yen appreciation in 1993-94 and 1998-99.¹

How did problems in the banking sector affect the economy?

In an attempt to limit their losses in the short run, the weakly capitalised Japanese banks initially extended loans to insolvent firms, often referred to as "zombie lending". Authorities were hesitant

¹ See Sekine, T., "Firm-Investment and Balance-Sheet Problems in Japan", *IMF Working Paper Series*, No WP/99/111, 1999; Kanaya, A. and Woo, D., "The Japanese Banking Crisis of the 1990s: Sources and Lessons", *IMF Working Paper Series*, No WP/00/7, 2000; Callen, T. and Ostry, J.D., *Japan's Lost Decade. Policies for Economic Revival*, IMF, 2003.

to strengthen banking supervision and to discourage such regulatory forbearance, which postponed loan write-offs and recapitalisation. As banks struggled with bad debt for years, they curtailed lending to new firms, which led to distortions in the allocation of credit and ultimately exacerbated the financial crisis and postponed a sustained recovery. The “zombie lending” may have hampered the entry of more efficient firms into the market place, constraining innovation and lowering long-term productivity growth.² Similarly, the strong emphasis traditionally placed on job security in Japan may have reduced flexibility by hampering sectoral adjustments in the economy. Labour market adjustment centred on wages: the unemployment rate rose slightly but nominal wages fell rapidly, which seems to have contributed to Japan entering a phase of deflation from the late 1990s onwards. Deflationary pressures became most evident in goods prices, indicating that other factors, such as strong import competition and a large output gap, were also important.³ Moreover, the uncertain outlook for economic growth at the time led to a postponement of investment and consumption plans, putting further downward pressure on prices.⁴

While Japan’s lost decade is typically attributed to the deleveraging and the problems in financial intermediation, it is important to note that structural deficiencies in the economy may also have played an important role. Some studies have suggested that the decade of economic stagnation in Japan might have been associated with a gradual finalisation of the “catch-up” process as Japan approached the technological frontier, which ultimately constrained further productivity gains.⁵ Moreover, the Japanese economy faced unfavourable demographic developments from the 1990s onwards, as the working age population reversed its previous growth trend and started to decline. This also made it more difficult to absorb the excess supply of housing.

The policy response to the crisis

Despite some initial room for manoeuvre before reaching the lower zero bound of interest rates, monetary policy responded slowly to the crisis, partly because – even two years after the stock market crash – neither the central bank nor other market observers anticipated a protracted slowdown of the economy.⁶ As inflation expectations also remained low, this kept long-term real interest rates relatively high, while credit contracted. During this period, the effectiveness of the monetary transmission mechanism may have been impeded by the underlying problems in the private sector, which were not tackled by regulatory authorities.⁷ When persistent deflationary pressures did not disappear, the Bank of Japan eventually reverted to non-conventional monetary policy measures. Its policy of “quantitative easing”, which was conducted from 2001 to 2006, may have contributed to a re-emergence of slightly positive inflation rates.

On the fiscal side, Japan’s initially low public debt level and its large current account surplus led the government to counter the economic stagnation with fiscal stimuli. Moreover, deteriorating

2 Caballero, R.J., Hoshi, T. and Kashyap, A.K., “Zombie Lending and Depressed Restructuring in Japan”, *American Economic Review*, 98, pp. 1943-1977, 2008; Peek, J. and Rosengren, E., “Unnatural Selection: Perverse Incentives and the Misallocation of Credit in Japan”, *American Economic Review*, 95, pp. 1144-1166, 2005; Nishimura, K.G. and Kawamoto, Y., “Why does the problem persist? ‘Rational Rigidity’ and the plight of Japanese banks”, *The World Economy*, Vol. 26, pp. 301-324, 2003.

3 Baba, N., Oda, N., Shirakawa, M., Ueda, K. and Ugai, H., “Japan’s deflation, problems in the financial system, and monetary policy”, *Monetary and Economic Studies*, Vol. 23, pp. 47-111, 2005.

4 Kimura, T., Shimatani, T., Sakura, K. and Nishida, T., “The role of money and growth expectations in price determination mechanism”, *Bank of Japan Working Paper Series*, No 10-E-11, 2010.

5 Hayashi, M., Prescott, E., “The 1990s in Japan: A Lost Decade”, *Review of Economic Dynamics*, 5, pp. 206-235, 2002.

6 Ahearne, A., Gagnon, J., Haltmaier, J. and Kamin, S., “Preventing Deflation: Lessons from Japan’s Experience in the 1990s”, *Federal Reserve Board International Finance Discussion Papers*, No 2002-729, 2002.

7 See Box 2 in the article entitled “Money and credit growth after financial crises – a historical global perspective”, *Monthly Bulletin*, ECB, February 2012.

revenues and rising social security spending also contributed to the increase in the fiscal deficit in the early 1990s. To consolidate public finances, the government raised value-added taxes in 1997 with the onset of the Asian crisis, which some observers regard as having postponed the recovery.⁸ From 1998 onwards, fiscal policy became increasingly expansionary, although the fiscal impulse of additional spending remained limited, partly because fiscal spending multipliers declined after 1990.⁹ This reflected a shift from public investment to social security spending. Moreover, amid the ongoing deleveraging, the private sector may have been less responsive to the fiscal stimulus. Over the years, expansionary fiscal policies have stretched public debt levels, reaching over 200% of GDP in 2010.

8 Posen, A., "It takes more than a bubble to become Japan" in Richards, A. (ed.), *Asset Prices and Monetary Policy*, Reserve Bank of Australia, 2004; Posen, A., "The Realities and Relevance of Japan's Great Recession: Neither Ran no Rashomon", *Peterson Institute for International Economics Working Paper Series*, WP 10-7, 2010.

9 Syed, M., Kang, K. and Tokuoka, K., "'Lost Decade' in Translation: What Japan's crisis could portend about recovery from the Great Recession", *IMF Working Paper Series*, No WP/09/282, 2009; Hemming, R., Kell, M. and Mahfouz, S., "The effectiveness of fiscal policy in stimulating economic activity – a review of literature", *IMF Working Paper Series*, No WP/02/208/, 2002.

2 THE NATURE AND CONTEXT OF THE BALANCE SHEET CRISES

The major similarity between the Japanese experience in the 1990s and the recent crisis in the United States and the euro area is that

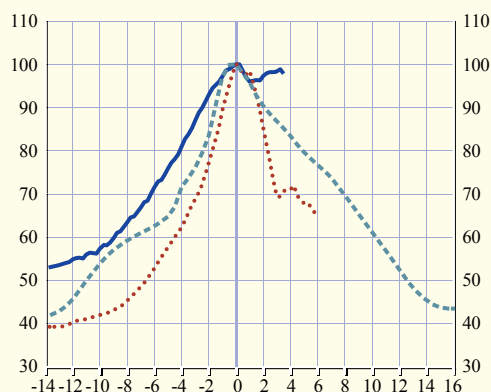
both can be seen as "balance sheet recessions", in which segments of the private non-financial sector were forced to make significant adjustments to balance sheet positions, triggered by sharp corrections in asset prices that, in turn, had been preceded by strong credit expansion.

Chart 1 Real estate prices

(index = 100 at peaks; semi-annual data for Japan, otherwise quarterly data)

x-axis: years from peak

— euro area (Q2 2008)
 United States (Q1 2006)
 - - - Japan (Q3 1991)

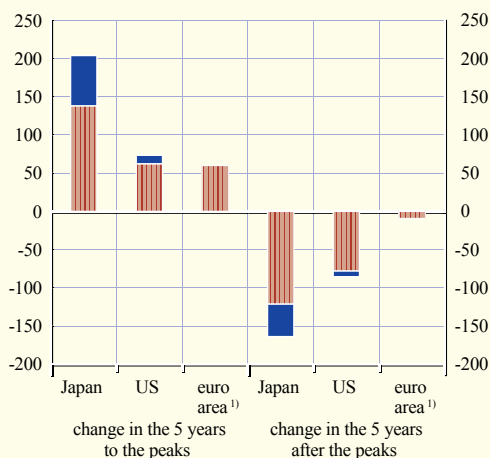


Sources: S&P, Fiserv, MacroMarkets LLC, Japan Real Estate Research Institute and ECB.
 Notes: US data refer to the Case Shiller Home Price Index. Japan data refer to the Urban Land Price Index and euro area data to the Residential Property Price Index. The peak is given in brackets. The latest observation is for the fourth quarter of 2011 for the United States and the euro area.

Chart 2 Change in market value of real estate wealth as a share of GDP

(difference in percentage points; annual data for Japan, otherwise quarterly data)

■ non-financial corporations
 ■ households

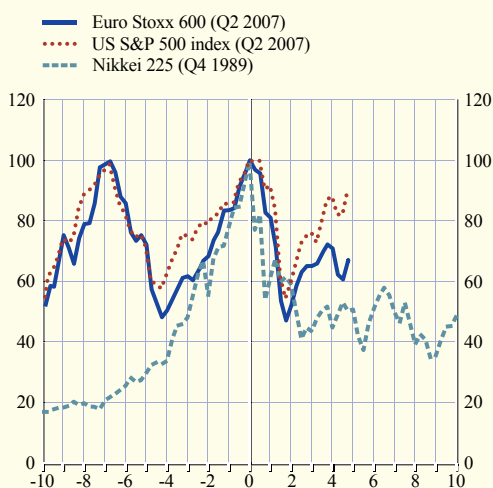


Sources: Board of Governors of the Federal Reserve System, Cabinet Office and Eurostat.
 Notes: Data refer to total real estate holdings by households and non-financial corporations as a percentage of GDP. Households include non-profit organisations and private unincorporated enterprises. The peaks are as follows: first quarter of 2006 for the United States, 1990 for Japan and the fourth quarter of 2007 for the euro area.
 1) Data for the euro area are for households only and refer to three years and nine months after the peak.

Chart 3 Equity prices

(index = 100 at peaks; quarterly data)

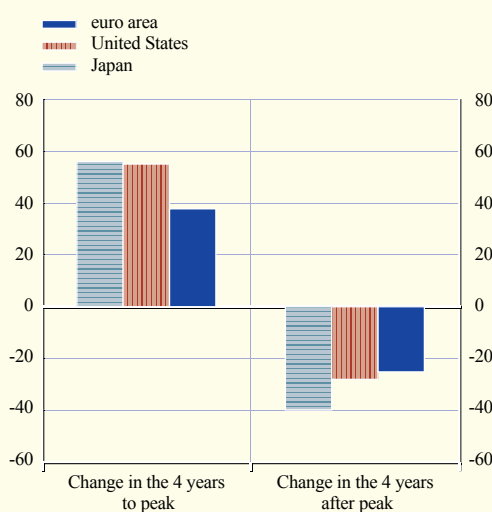
x-axis: years from peak



Sources: Nikkei, Wall Street Journal, Haver and STOXX Limited.
Notes: The peak is given in brackets. The latest observation is for the first quarter of 2012 for the United States and the euro area.

Chart 4 Change in market value of equities as a share of GDP

(difference in percentage points; quarterly data)



Sources: Board of Governors of the Federal Reserve System, Bank of Japan and Eurostat.
Notes: Data refer to domestic holdings. Holdings of corporate equity by non-financial corporations are excluded from the US data. The peaks are as follows: second quarter of 2007 for the United States and the euro area, fourth quarter of 1989 for Japan.

However, the primary source of the problems was concentrated in different sectors: in Japan, the excesses were mainly in the corporate sector, which suffered from excessive leverage (see Box 1), while in the United States, balance sheet problems lay notably with households, following the housing and credit boom. In the euro area, while lending also increased in the run-up to the crisis, sector-specific balance sheet problems were less obvious at aggregate level, but prominent in some countries, resulting in significant regional imbalances and excessive leverage in some sectors in individual euro area Member States; this is discussed in Box 2.

The magnitude and speed of adjustment also differed. First, the asset price correction in real estate and ensuing balance sheet adjustments have occurred at a faster pace in the United States recently compared with Japan during the 1990s, while the adjustment in the euro area has been much more measured. Second, the Japanese economy experienced a relatively larger shock in

terms of negative wealth effects from the decline in real estate prices. In Japan, the corporate and household sectors suffered considerable losses on their real estate assets, while in the United States and the euro area it was mainly households that were affected (see Charts 1 and 2). For the euro area in aggregate, the decline in housing wealth has been comparably muted – although there was considerable heterogeneity at the country level, with excessive house price growth and, correspondingly, larger corrections in some countries (see Box 2). While the United States saw a very strong decline in house prices, the overall impact on the economy was dampened by the considerably smaller ratio of housing wealth to GDP in the United States (234% at its peak, compared with 355% in Japan). Third, the boom-bust cycle in equity and real estate prices was much more persistent and simultaneous in Japan, which aggravated the shock. By contrast, equity prices rebounded in the euro area and in the United States, unlike in Japan, which witnessed a decade-long stagnation (see Charts 3 and 4).

Overall, economy-specific comparisons of the speed and size of the asset price adjustment suggest that the problem was somewhat more acute in Japan than in the United States and the euro area: a larger pre-crisis bubble across several asset classes, followed by a larger, more simultaneous and prolonged decline. However, as the current crisis is still unfolding, it might be premature to draw definitive conclusions as to the gravity of the shock experienced by each economy in the two episodes considered. The materialisation of systemic risk at the global level during the recent financial crisis, which was considerably more widespread, magnified the overall shock to individual economies via financial and trade spillovers. With many economies struggling simultaneously to repair imbalances, the United States and the euro area have clearly faced a less favourable external environment than Japan did.

3 THE ADJUSTMENT PERIOD: DIFFERENCES BY SECTOR AND ECONOMIC IMPLICATIONS

Historically, “balance sheet recessions” are typically followed by a prolonged period of depressed demand, driven by the need for particular sectors to reduce leverage. The nature of sectoral imbalances also tends to shape the subsequent economic adjustments. A significant difference between the episodes considered is that the need for post-bubble restructuring lay with an overleveraged corporate sector in Japan, while for the United States and some euro area countries, the housing bubble predominantly affected households’ balance sheets (see Charts 5 and 6).²

Thus in the United States, and also in some euro area countries, the adjustment has required, in particular, an increase in the household saving rate (see Chart 7). By contrast, in Japan, deleveraging came in the form of a persistent rise in corporate savings, together with a prolonged decline in investment as the corporate sector needed to downsize (see Chart 8). Net corporate

saving also rose following the onset of the recent crisis. However, in the United States and in most euro area countries, corporate deleveraging often reflected a combination of demand and supply factors, such as a higher propensity to retain earnings in the face of uncertainty about future demand and tight credit standards, which differed from the active attempt of Japanese firms to adjust to the decline in collateral values.

The nature of the adjustment also has implications for the composition of demand. In the United States and the euro area – especially in countries where deleveraging needs were large (see Box 2) – higher household savings implied a sustained moderation in consumer spending and a correction in residential investment from the unsustainably high levels reached during the housing and credit boom. Since the end of the recession, both components have made a smaller contribution to GDP growth than in past recoveries.

In addition, the adjustment in the United States and the euro area has been shaped by global circumstances. The Japanese crisis was largely domestic, with the rest of the world relatively unaffected. That made it possible for net exports to contribute to the “rebalancing”. The recent crisis has been substantially wider in reach and the general downturn in global growth has likely hampered the ability of the United States and the euro area to recover from the crisis by relying on higher export growth (see Chart 9).

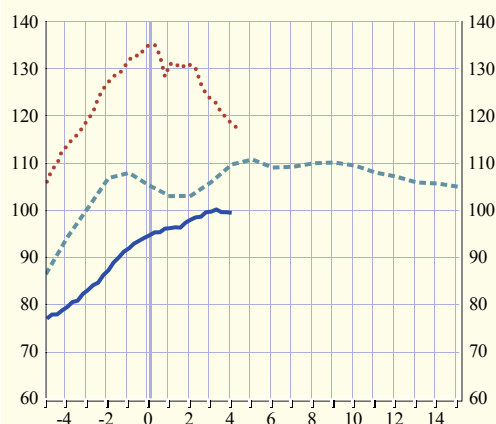
2 If not otherwise mentioned (e.g. Charts 1 to 4 and Chart 18), the choice of reference year for most charts throughout this article denotes the respective peak in economic activity, identified as the last quarter before the start of the recession, namely the first quarter of 1991 for Japan and the third quarter of 2007 for the United States. Given the simultaneous onset of the global financial turmoil in the third quarter of 2007 and the global nature of the subsequent crisis, the reference year for the euro area is the same as for the United States.

Chart 5 Household debt as a share of personal disposable income

(percentages; annual data for Japan, otherwise quarterly data)

x-axis: years from onset of crisis

— euro area (Q3 2007)
 United States (Q3 2007)
 - - - Japan (Q1 1991)



Sources: Board of Governors of the Federal Reserve System, Bank of Japan, ECB and Eurostat.

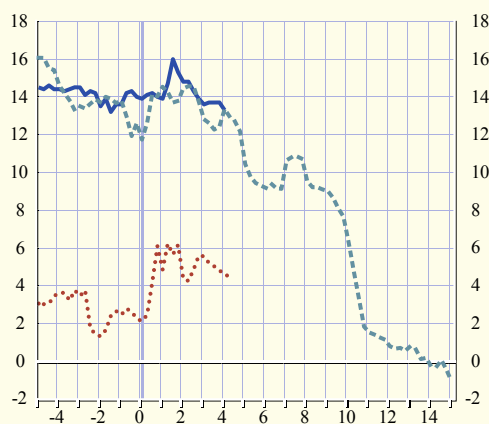
Notes: Data refer to total liabilities of households and non-profit organisations. The quarters in brackets refer to the onset of the respective crises. The latest observation is for the third quarter of 2011 for the euro area and the fourth quarter of 2011 for the United States.

Chart 7 Household saving rates

(as a percentage of disposable income; quarterly data)

x-axis: years from onset of crisis

— euro area (Q3 2007)
 United States (Q3 2007)
 - - - Japan (Q1 1991)



Sources: Bureau of Economic Analysis, Cabinet Office, ECB and Eurostat.

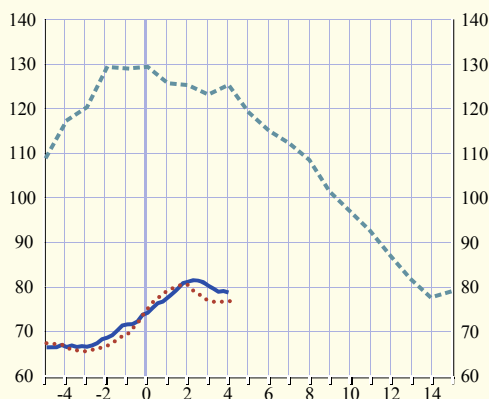
Notes: Data refer to household saving rate. The quarters in brackets refer to the onset of the respective crises. The latest observation is for the third quarter of 2011 for the euro area and the fourth quarter of 2011 for the United States.

Chart 6 Debt ratios of non-financial corporations as a share of GDP

(percentages; annual data for Japan, otherwise quarterly data)

x-axis: years from onset of crisis

— euro area (Q3 2007)
 United States (Q3 2007)
 - - - Japan (Q1 1991)



Sources: Board of Governors of the Federal Reserve System, Bank of Japan, ECB and Eurostat.

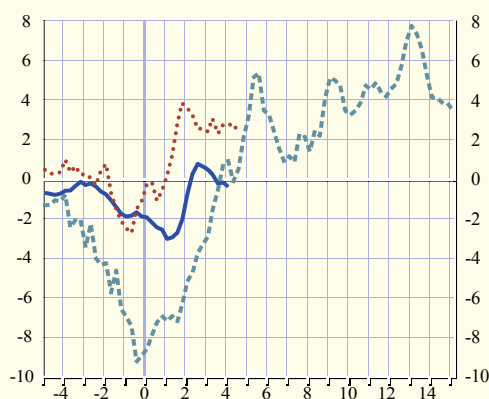
Notes: Data refer to loans and debt securities excluding trade credit. The quarters in brackets refer to the onset of the respective crises. The latest observation is for the third quarter of 2011 for the euro area and the fourth quarter of 2011 for the United States.

Chart 8 Savings-investment balance of the corporate sector

(as a percentage of GDP; quarterly data)

x-axis: years from onset of crisis

— euro area (Q3 2007)
 United States (Q3 2007)
 - - - Japan (Q1 1991)



Sources: Board of Governors of the Federal Reserve System, Bank of Japan, ECB and Eurostat.

Notes: Data refer to net lending/borrowing of non-financial corporates. The quarters in brackets refer to the onset of the respective crises. The latest observation is for the third quarter of 2011 for the euro area and the fourth quarter of 2011 for the United States.

Box 2

BALANCE SHEET ADJUSTMENTS IN INDIVIDUAL EURO AREA COUNTRIES

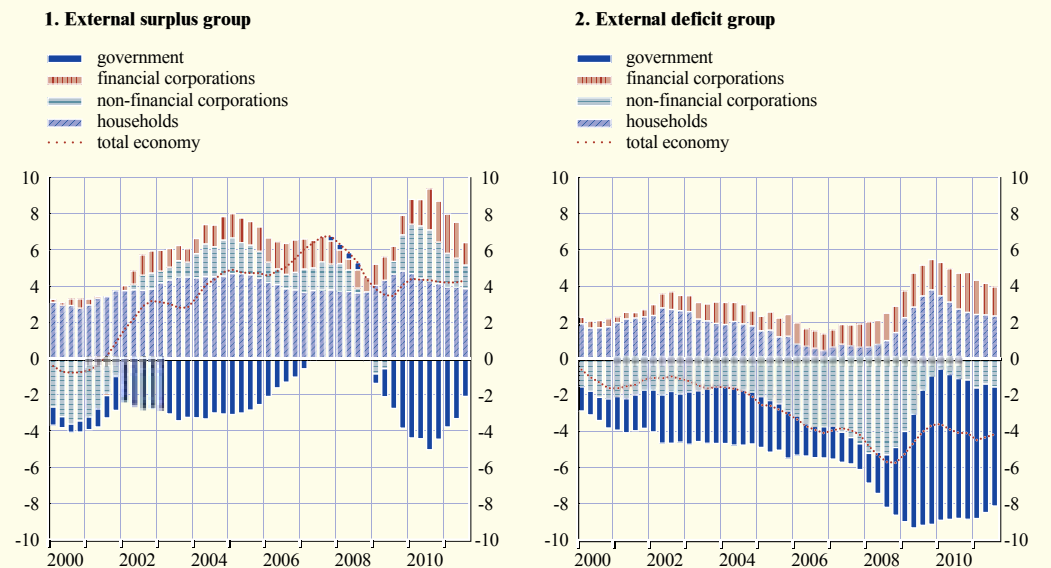
At the aggregate level, the euro area does not share the full extent of the balance sheet problems observed in Japan in the 1990s or in the United States currently. Private sector indebtedness has remained limited overall and the net international investment position of the euro area aggregate is broadly balanced. However, the current problems of some euro area countries are primarily related to excessive leverage.¹ In particular, some countries have faced deleveraging pressures following strong credit expansion and a sharp correction of asset prices, and the challenges faced by those countries thus appear rather close to the difficulties associated with balance sheet adjustment.

An analysis of imbalances at the euro area level based on the euro area accounts shows that while the aggregate euro area external position has remained close to balance, there has been an increasing divergence between two groups of countries: the “external surplus group”, which includes those countries that had run external current account surpluses over a period of five years ending at the onset of the financial crisis in 2007, and the “external deficit group”, which includes those countries that ran current account deficits² (see Chart A). Obviously, the composition of the groups is closely tied to the reference period and would change over time. While part of the increase in financial deficits of the

- 1 See the article entitled “The financial crisis in the light of euro area accounts: a flow-of-funds perspective”, *Monthly Bulletin*, ECB, October 2011.
- 2 The “external surplus group” includes Belgium, Germany, Luxembourg, the Netherlands, Austria and Finland. The “external deficit group” includes Ireland, Estonia, Greece, Spain, France, Italy, Cyprus, Malta, Portugal, Slovakia and Slovenia. Further details on the analysis of euro area accounts during the financial crisis and on the grouping of euro area countries is available in the box entitled “A sectoral account perspective of imbalances in the euro area”, *Monthly Bulletin*, ECB, February 2012, pp. 38-43.

Chart A Net lending/net borrowing by country grouping

(as a percentage of GDP; four-quarter sums)



Sources: Eurostat and ECB.
 Notes: The net lending/net borrowing shown in the charts in this box has been adjusted, for convenience, so as to exclude “acquisitions less disposals of non-financial non-produced assets” (in order to avoid the distortions caused by the large proceeds from the sale of UMTS mobile phone licences in 2000). Positive/negative figures correspond to net lending/borrowing. The latest observation is for the third quarter of 2011.

private sector in the external deficit group might have reflected increased financial integration within the euro area, they have also originated from the consequences of credit booms in some countries. In the external deficit group, the recession following the crisis – together with sharp corrections in house prices in some countries – led to strong deleveraging by the private sector. Households' net lending increased significantly and the pre-crisis expansionary financial balances of non-financial corporations reverted quickly.

In parallel, budget balances deteriorated considerably and government debt rose rapidly, though differing markedly across the euro area countries. As a result, risks to debt sustainability intensified in a number of euro area countries amid an environment of financial instability and low growth. However, contrary to Japan, where the increase in public indebtedness was mostly due to subsequent public works programmes to kick-start the economy, financial sector support has been more important in the euro area. In this respect, government support of the repair of the financial system can be seen as positive for long-term growth, as long as it restores financial health and does not put public debt sustainability at risk.

The table below shows the heterogeneity across the euro area countries in terms of indebtedness, as reported by the European Commission in the context of the surveillance of macroeconomic imbalances in the EU and the euro area (published on 14 February 2012 in the European Commission's Alert Mechanism Report). It also shows the extent of the balance sheet adjustment that will be necessary in some euro area countries over the coming years. In particular, Ireland, Spain, Cyprus and Portugal all face high levels of private and public debt and their net international investment positions are also clearly in excessive deficit. Spain and Ireland are also examples of countries where balance sheet problems originated from a boom-bust cycle in the real estate sector. In this respect, their experience is to some extent comparable to the balance sheet adjustments in Japan in the 1990s and in the United States currently. In both countries, credit to the private sector increased sharply from the early 2000s, leading to a housing and

The alert mechanism scoreboard for the euro area economies and selected indicators

(as a percentage of GDP)

Year 2010	Net international investment position	Private sector debt	Public sector debt
Belgium	77.8	232.8	96.2
Germany	38.4	128.1	83.2
Estonia	-72.8	176.1	6.7
Ireland	-90.9	341.3	92.5
Greece	-92.5	124.1	144.9
Spain	-89.5	227.3	61.0
France	-10.0	159.8	82.3
Italy	-23.9	126.4	118.4
Cyprus	-43.4	289.2	61.5
Luxembourg	96.5	253.9	19.1
Malta	9.2	212.0	69.1
Netherlands	28.0	223.4	62.9
Austria	-9.8	165.7	71.8
Portugal	-107.5	248.5	93.4
Slovenia	-35.7	128.8	38.8
Slovakia	-66.2	69.0	41.0
Finland	9.9	177.7	48.3
Memorandum item: thresholds	-35.0	160.0	60.0

Source: European Commission.

Note: The cells with grey shading indicate countries that exceeded the threshold in 2010.

construction boom. After peaking in 2007, residential investment declined rapidly in the subsequent years and the bulk of the correction of residential investment appears to have been completed. House prices also peaked in 2007 in both countries. While the correction has been significant in Ireland, the overvaluation in Spanish house prices has been corrected more gradually (see Chart B).

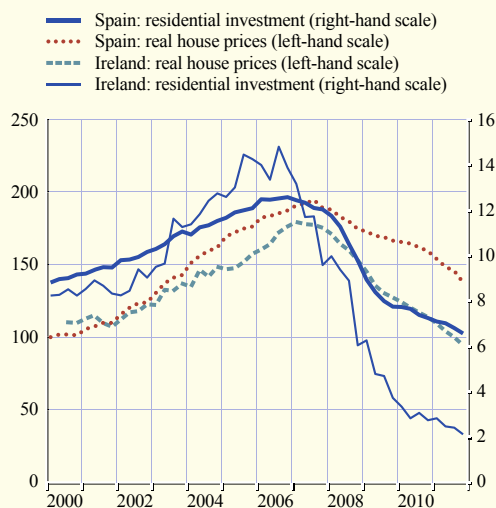
A sharp increase in private sector indebtedness in the two countries can be observed in the years preceding the asset price booms. Focusing on the household sector, debt grew significantly up to the financial crisis, reaching close to 130% of GDP in Ireland and 90% in Spain. By comparison, the euro area level of household indebtedness levelled off to 65% of GDP. Since then, private sector deleveraging has been stronger in Ireland than in Spain (see Chart C).³

Moreover, both countries experienced a particularly strong rise in government debt. Compared with pre-crisis levels in 2007, the government debt-to-GDP ratio is expected to have risen by 83.2 percentage points to 108.1% in Ireland in 2011 and by 33.4 percentage points to 69.6% in Spain,⁴ reflecting, among other things, substantial support to ailing financial institutions.

Overall, the process of deleveraging is ongoing in some euro area countries and the reduction in private and government debt is likely to limit growth in the years to come as the balance sheet adjustment weighs on the investment expenditure of firms and on households' consumption. At the same time, a period of low growth in these countries may also be part of the adjustment, as imbalances mainly reflected demand booms in the run up to the crisis. Without the ongoing adjustment, a more painful correction might have followed later on.

Chart B Residential investment as a percentage of GDP and real house prices in Spain and Ireland

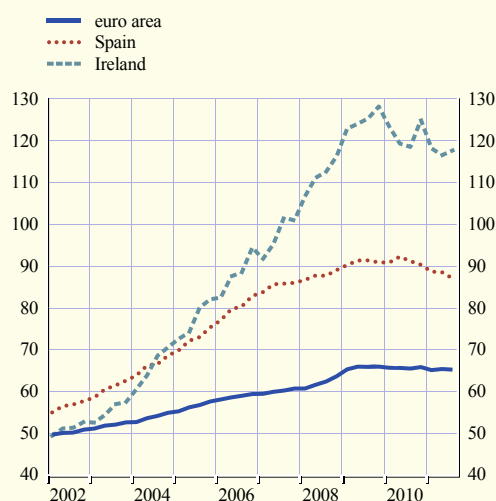
(left-hand scale: 2000 = 100; right-hand scale: as a percentage of GDP; quarterly data)



Sources: Central Statistics Office, Instituto Nacional de Estadística and Eurostat.
Notes: House prices deflated with HICP. The latest observation is for the fourth quarter of 2011.

Chart C Household sector debt

(as a percentage of GDP; quarterly data)



Sources: Central Statistics Office, Instituto Nacional de Estadística and Eurostat.
Note: The latest observation is for the third quarter of 2011.

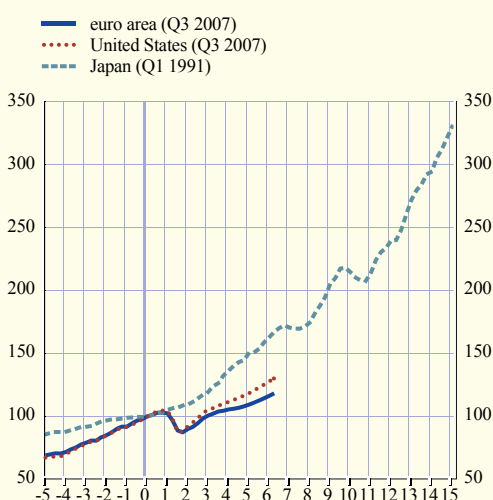
3 An analysis of corporate indebtedness in the euro area, including a comparison with the United States, is available in the article entitled "Corporate indebtedness in the euro area", *Monthly Bulletin*, ECB, February 2012, pp. 87-103.

4 See the European Commission's 2011 Autumn Economic Forecast, Brussels.

Chart 9 Foreign demand

(index = 100 in the third quarter of 2007 for the United States and the euro area, and in the first quarter of 1991 for Japan; quarterly data)

x-axis: years from onset of crisis



Source: OECD Economic Outlook.

Notes: The quarters in brackets refer to the onset of the respective crises. For the United States and the euro area, projections are from the third quarter of 2011 until the fourth quarter of 2013.

4 THE UNWINDING OF IMBALANCES AND GROWTH POTENTIAL

Beyond the demand effects involved in the rebalancing phase, economic growth may also deteriorate if the supply potential of the economy is affected. Severe economic adjustment may result in a decline in flexibility and loss of non-tangible or human capital, as firms or households suffer long periods of underutilisation or underemployment, which would imply a period of lower growth in the production potential of the economy. Recent estimates indicate that potential output growth in both the euro area and the United States has fallen significantly during the recent economic downturn. Although it remains difficult to measure potential output in real time, the OECD, IMF and European Commission estimate a decline of about 1 percentage point in the average rates of potential growth over the period from 2008 to 2011 compared with the previous decade.³ Over similar horizons, Japanese

potential growth declined on average by around 2 percentage points after 1992.

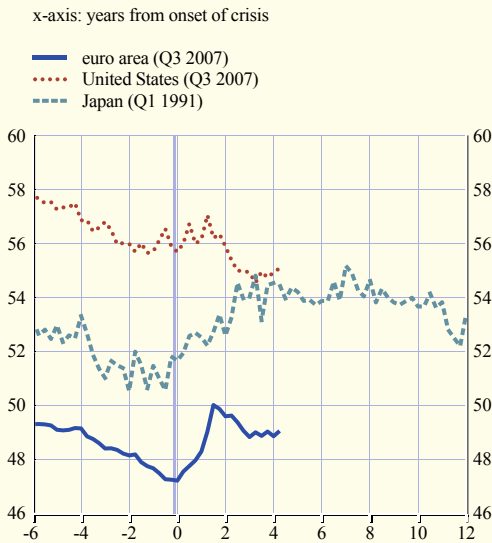
The precise effects on long-term economic growth are likely to reflect differences in the structure of each economy as well as the form of economic rebalancing. In particular, not all of the decline in potential output in Japan was the result of the balance sheet adjustments and rigidities in the corporate sector (as discussed in Box 1), but also related to ageing and the resulting decline in the labour force. In this respect, the United Nations project that the United States and the euro area are also likely to face increasing challenges related to an ageing population, although to a lesser degree compared with Japan.

In the United States, reflecting the relatively higher degree of labour market flexibility, it is the level of employment that has borne the brunt of the adjustment. Labour shedding supported productivity growth and corporate profits, at the expense of soaring unemployment and a declining share of labour income in the overall economy (see Chart 10). The proportion of those unemployed for more than half a year relative to the total remained close to record-high levels in early 2012 (see Chart 11). Such long spells of unemployment could result in a reduction of human capital because of erosion of skills. This also tends to lower the probability of being re-employed, as idle workers lose employment networks, reputation or attachment to the labour force, thus turning part of the cyclical increase into structural unemployment. In addition, employment prospects could be affected for years to come because of reduced incentives to work owing to continued extensions of unemployment insurance benefits, which may lead to a reduction in search efforts by recipients. Finally, the adjustment of labour across sectors and geographic areas might be hampered by the fall in labour mobility as reflected in lower household mobility compared with the 2000-01

³ See Box 1 in the article entitled, "Patterns of euro area and US macroeconomic cycles – what has been different this time?", *Monthly Bulletin*, ECB, May 2011.

Chart 10 Employee compensation

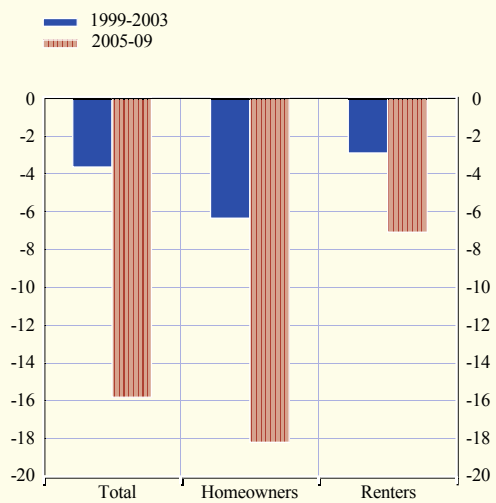
(as a percentage of GDP; quarterly data)



Sources: Bureau of Economic Analysis, Cabinet Office and Eurostat.
Notes: The quarters in brackets refer to the onset of the respective crises. The latest observation for the United States and the euro area is for the fourth quarter of 2011.

Chart 12 Changes in the household mobility rate in the United States

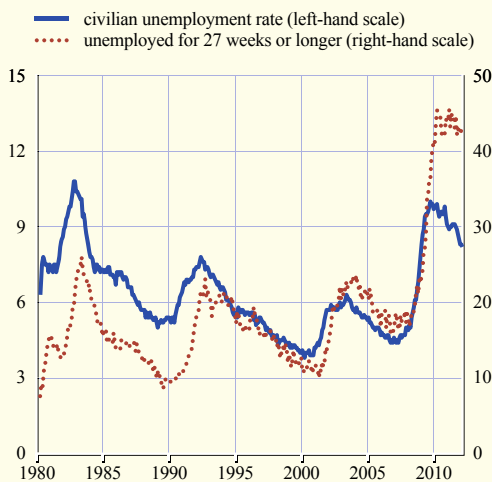
(percentage points)



Sources: American Housing Survey, US Census Bureau and ECB staff.
Notes: Biannual data. The mobility rate is defined as the share of householders who reported having moved in the previous 12 months. The reference years are chosen to compare the change in household mobility over a period of four years, encompassing the latest (2007-09) and the previous (2000-01) recessions.

Chart 11 US unemployment rate and duration of unemployment

(left-hand scale: percentage; right-hand scale: percentage of the total number of unemployed civilians that have been unemployed for 27 weeks or longer, monthly data)



Source: Bureau of Labor Statistics.
Notes: Unemployment rate among civilian population aged 16 and older. The latest observation is for March 2012.

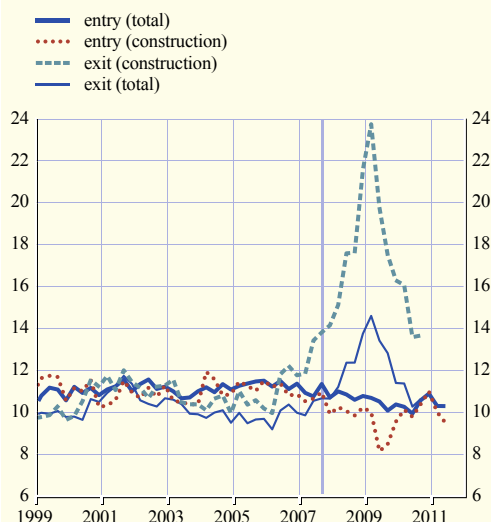
recession, in particular for homeowners (see Chart 12). This may be connected to problems in the housing market, as a significant portion of households remain stuck with properties valued below the remaining mortgage balance, making it more difficult to move as it would require the immediate recognition of losses.⁴

In contrast to the decline in labour mobility, there is little evidence of declining flexibility in the US corporate sector. The crisis witnessed a sharp increase in the rate of firms exiting the market, particularly in sectors in need of adjustment such as construction, while firms' entry rates remained relatively stable, suggesting that a mechanism of "creative destruction" was at work (see Chart 13). This is in stark contrast to

4 In Ferreira, F., Gyourko, J. and Tracy, J., "Housing Busts and Household Mobility: An Update", *Federal Reserve Bank of New York Staff Reports*, No 526, 2011, negative housing equity is found to have reduced household mobility by 30%.

Chart 13 Firm entry and exit rates in the United States

(as a percentage of total private establishments; quarterly data)

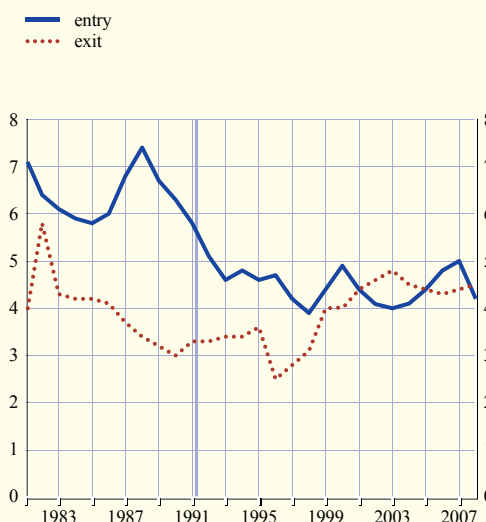


Sources: Bureau of Labor Statistics and ECB staff.

Notes: The latest observation is for the first quarter of 2011 for firm entries and the third quarter of 2010 for firm exits. The vertical line marks the third quarter of 2007, the onset of the crisis.

Chart 14 Overall firm entry and exit rates in Japan

(as a percentage of the average number of all businesses; annual data)



Sources: Ministry of Health, Labour and Welfare and Ministry of Economy, Trade and Industry.

Notes: Entries and exits of business establishments, including openings and closures resulting from opening, closure and movement of branches and factories. The latest observation is for 2008. The vertical line marks the first quarter of 1991, the onset of the crisis.

the Japanese experience in the 1990s, where the increase in the rate of firms' bankruptcies was relatively mild, but the number of newly created enterprises declined sharply, which ultimately prevented potentially more efficient firms from entering the market place (see Chart 14). The United States also appears to have avoided distortions related to the "evergreening" of loans, as – unlike the experience in Japan – the share of loans towards troubled sectors such as commercial real estate in total lending declined or remained relatively low.

The euro area faces similar structural challenges. Unlike the United States, several euro area countries faced high levels of long-term unemployment even before the recession – the recent increase in unemployment has therefore reinforced the need for enhanced flexibility in labour markets. This has been especially clear in countries which saw large increases in

employment in the construction sector during housing booms. These economies now have a high number of former construction-sector workers, which poses a challenge in terms of activation and training policies. Moreover, while there has been evidence of changes in net migration patterns within the euro area since the recent economic downturn, inter-country migration in the euro area is less widespread than labour movement between US states and a less important channel for alleviating specific regional problems.

Finally, the recent crisis has highlighted the challenges for several euro area countries that lost competitiveness during the first decade of monetary union. While for the euro area as a whole, unit labour costs grew by 1.5% on average between 1999 and 2007, in countries such as Greece, Portugal, Spain and Ireland the increases were close to double that rate.

The losses in competitiveness reflected high nominal wage growth in each of these countries. However, in some countries it also reflected poor productivity performance. The cumulative impact of those sustained differences was a gradual erosion of the competitiveness positions of those countries and, as Box 2 discusses, the accumulation of external imbalances with large net international investment liabilities. In a monetary union, with a single currency and a single monetary policy, the main adjustment mechanism – in the absence of a high degree of labour mobility or cross-country fiscal transfers – is the competitiveness channel. In order to restore competitiveness, wages will need to grow more slowly than productivity for some time in some countries. Without swift action to restore competitiveness, in particular by reducing unit labour costs, countries are likely to face a prolonged period of slower growth until imbalances are corrected and competitiveness is restored.

5 POTENTIAL LONG-TERM DISTORTIONS IN FINANCIAL INTERMEDIATION

A further implication of long periods in which imbalances are unwound is the impact on the financial sector. The need for balance sheet adjustment as either financial or non-financial sectors attempt to unwind past excesses can hamper the availability of credit and induce distortions in financial intermediation. In Japan, the effects of the bursting of the stock market bubble were mainly limited to a weakening of the health of the domestic banking system.⁵ By contrast, the prominence of the “originate-to-distribute” model in the United States via securitisations (which was also common in some countries in the euro area) meant that the effects from the dramatic increase in delinquencies and defaults on US mortgages were not limited to US banks only, but were propagated outside the banking sector and globally via capital losses suffered by investors in US mortgage-backed securities. That had knock-on effects for the euro area financial sector, prompting

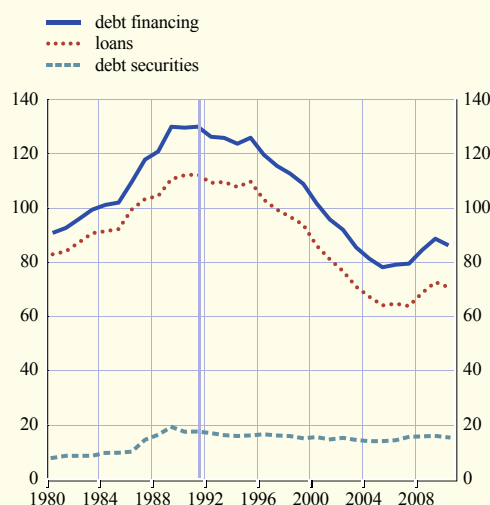
recapitalisation needs of banks in most euro area countries.

The impact of the crisis on credit intermediation depended, in part, on the role that financial intermediaries play in the financial systems of Japan, the euro area and the United States. In the United States, where businesses rely to a larger extent on market financing, the impairment of the selection mechanism in the allocation of corporate credit related to banking sector problems might be less relevant (see Charts 15 to 17). This is because market lending decisions are less susceptible to regulatory forbearance, which seems to have played a role in Japanese banks’ decisions (see Box 1). Indeed, one distinguishing aspect of the credit cycle in the United States and, to a lesser extent, in Europe has been the faster normalisation of asset markets relative to banking systems and a shift

5 Unlike US and euro area banks, Japanese banks typically hold large equity positions in non-banking corporations.

Chart 15 Debt financing of non-financial corporations in Japan

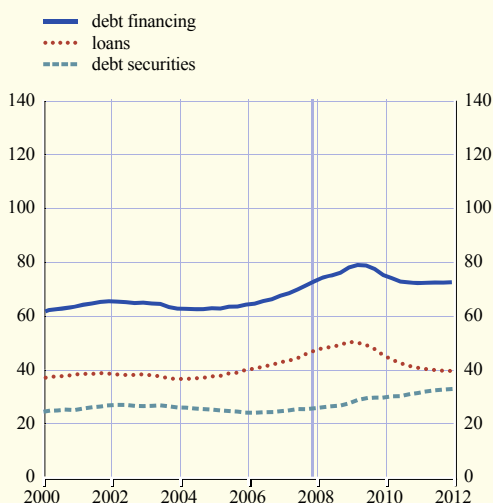
(as a percentage of GDP; quarterly data)



Sources: Bank of Japan and ECB staff.
Notes: Debt financing corresponds to credit market instruments in the Japanese flow-of-funds data. The latest observation is for 2010. The vertical line marks the first quarter of 1991, the onset of the crisis.

Chart 16 Debt financing of non-financial businesses in the United States

(as a percentage of GDP; quarterly data)

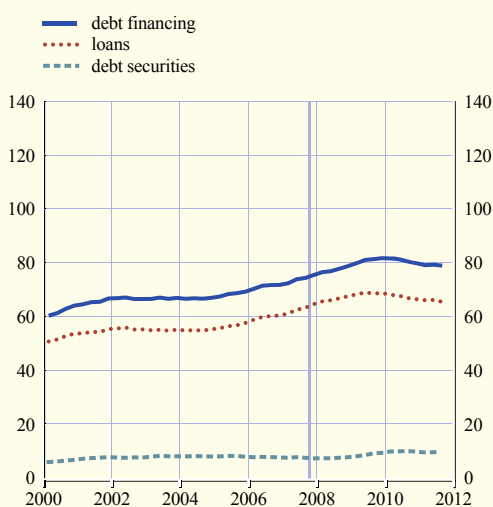


Sources: Board of Governors of the Federal Reserve System and ECB staff.

Notes: Debt financing corresponds to credit market instruments in the US flow-of-funds data. The latest observation is for the fourth quarter of 2011. The vertical line marks the third quarter of 2007, the onset of the crisis.

Chart 17 Debt financing of non-financial corporations in the euro area

(as a percentage of GDP; quarterly data)



Sources: ECB and ECB staff.

Notes: Debt financing of euro area non-financial corporates is reported on a consolidated basis by netting out inter-company loans from the original non-consolidated data and includes pension fund reserves. The latest observation is for the third quarter of 2011. The vertical line marks the third quarter of 2007, the onset of the crisis.

from banks to capital markets as the preferred source of corporate financing.⁶

While market finance is one avenue for alleviating credit constraints caused by banking sector problems, small and medium-sized enterprises tend to rely almost exclusively on bank financing.⁷ In this regard, the policy response to resolve banking problems is crucial. While Japan suffered from a delayed response, by contrast, US and euro area banks recognised losses and recapitalised at an early stage with the support of public funds⁸, and banks in both economies now operate with higher capital ratios than before the crisis. The more timely response was in part determined by the different nature of the problem. In the recent crisis, losses stemmed notably from securitised products where typically mark-to-market valuations apply. This facilitated the early recognition of losses, in contrast to Japan where problems focused primarily on non-performing loans held on the books of Japanese banks.

Nonetheless, the US and euro area financial sectors face specific challenges which have the potential to restrain lending and the speed of the economic recovery. In the face of market concerns about the creditworthiness of some euro area governments, euro area banks have recently faced questions about the strength of their balance sheets, related to their sovereign exposures. With banks required to raise capital as a buffer against such exposures, banks across Europe are expected to reduce their balance sheets over the coming years, which

6 See IMF, *Global Financial Stability Report*, September 2011.

7 Another way to reduce the dependence on banks would be to rely on trade credits and inter-company lending. See, for instance, the article entitled "The financial crisis in the light of the euro area accounts: a flow-of-funds perspective", *Monthly Bulletin*, ECB, October 2011.

8 At the peak of the crisis, the US government made investments in banks representing approximately 88% of US bank holding companies by assets (USD 245 billion disbursed) under the Troubled Asset Relief Program (TARP). By 2011 the amounts not yet repaid to the Treasury represented less than 8% of bank holding companies by assets and taxpayers recovered USD 256 billion including interest and other income (see US Treasury, *Three Year Anniversary Report*, October 2011).

may affect credit supply for productive sectors of the economy.

In the United States, a problem that might bear similarities to Japan's "zombie lending" is the slow restructuring and distortions in the mortgage market related to the dominance of government-sponsored enterprises (GSEs), which crowd out private financing because of their low funding costs. The retreat of private investors from the market and pending regulatory reform aimed at more stringent conditions for mortgage securitisations and a reduced role of GSEs are likely to restrict access to credit for households and raise the cost of mortgages in the future.⁹

6 THE POLICY RESPONSE TO THE CRISIS

Monetary and fiscal policies in the United States and the euro area responded to the initial economic downturn with larger and timelier measures compared with Japan in the 1990s. As for monetary policy, interest rates in Japan remained at a considerably higher level than in the euro area and the United States after the start of the corrections in stock markets and land prices (see Chart 18). The Bank of Japan reacted more slowly and in addition monetary policy was complicated by a rapid disinflation process, which turned into deflation from the late 1990s (see Box 1). By contrast, inflation expectation measures in both the euro area and the United States have remained well anchored close to pre-crisis levels, meaning that the current low interest rate environment translated into negative real interest rates (see Chart 19).

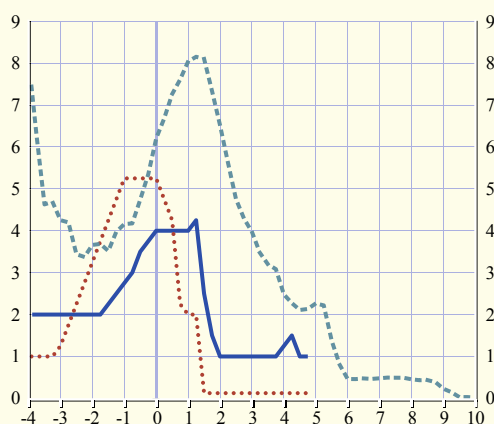
One lesson from the Japanese experience during the 1990s is that, in the presence of structural needs for private sector balance sheet repair, overly indebted sectors may become insensitive to monetary policy easing, leading to an impairment of the interest rate transmission mechanism.¹⁰ This is relevant in the United States, where the large proportion of borrowers with negative equity on their mortgage loans has impaired the refinancing of

Chart 18 Key policy rates

(percentages per annum; quarterly data)

x-axis: years from peak in stock market indices

— euro area (Q2 2007)
 United States (Q2 2007)
 - - - Japan (Q4 1989)



Sources: Federal Reserve Board, Bank of Japan and ECB.

Notes: The policy rates are the main refinancing operations rate for the euro area, the federal funds target rate for the United States and the Tokyo uncollateralised overnight call rate for Japan. The peak is given in brackets. The latest observation for the United States and the euro area is for the first quarter of 2012.

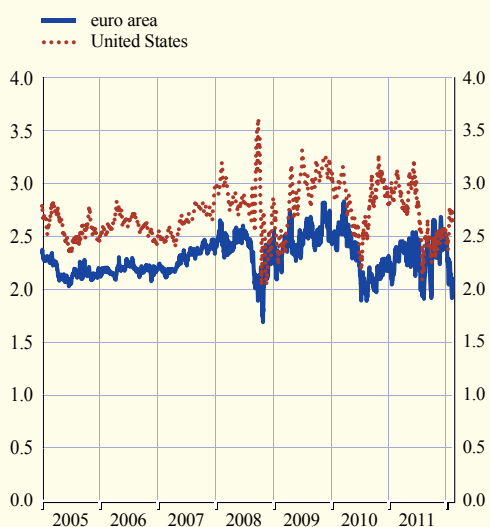
loans at lower costs, despite record-low mortgage rates. Similarly, the euro area sovereign debt crisis has impeded the pass-through of lower policy rates to the private sector in some euro area countries, partly because of the strong correlation between the cost of market funding for sovereigns and banks. Such evidence shows that monetary policy can treat the symptoms and buy time, but is not a substitute for overdue structural adjustments and regulatory reforms. Moreover, a prolonged period of policy accommodation and excess

⁹ In 2011 private-label residential mortgage-backed securities markets remained effectively shut down and 90% of residential mortgage origination in the United States came under the umbrella of the GSEs and the fully government-guaranteed Federal Housing Administration (see IMF, Article IV Consultation on the United States, Selected Issues, Chapter 4, *IMF Country Report*, No 11/202, 2011).

¹⁰ In contrast to previous cyclical downturns in Japan, the reduction in the policy rate in the early 1990s failed to prevent a sharp decline in investment, as firms needed to repair balance sheets and were unwilling or unable to take on new debt in the face of declining collateral values. See for instance, Nishimura, K.G., "This Time May Truly Be Different: Balance Sheet Adjustment under Population Ageing", speech given at the 2011 American Economic Association Annual Meeting in Denver, 7 January 2011.

Chart 19 Five-year forward five-year ahead break even inflation rates

(percentage per annum; five-day moving averages of seasonally adjusted daily data)



Sources: Reuters and ECB calculations.

Notes: The latest observation is for 6 April 2012 for the United States and 10 April for the euro area.

liquidity may create inefficiencies by keeping unviable firms and banks alive, or distort incentives and delay necessary adjustments such as a return to sound public finances.

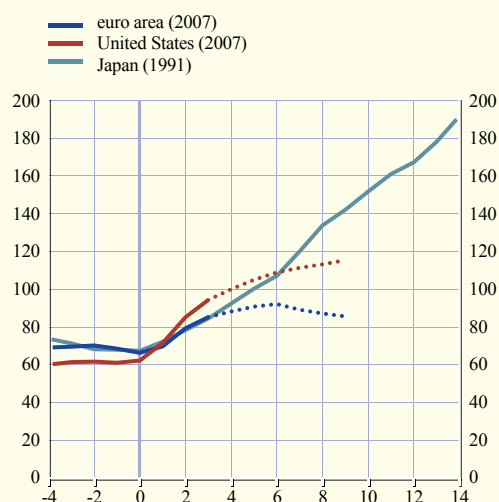
As regards fiscal policies, the crises were associated with a rapid rise in government debt, the magnitude of which differed between Japan, the United States, the euro area and its Member States (see Box 2 and Charts 20 and 21). The increase in debt-to-GDP ratios resulted, among other things, from the strong deterioration in economic growth, sizeable fiscal stimuli, as well as support to the banking sector as the balance sheet recessions fed through to excessively leveraged financial institutions.

While Japan, the United States and many euro area countries responded to their respective economic downturns with large fiscal expansions, the sovereign debt crisis has put particular pressure on euro area countries to initiate

Chart 20 Gross debt-to-GDP ratios

(percentages; annual data)

x-axis: years from onset of crisis



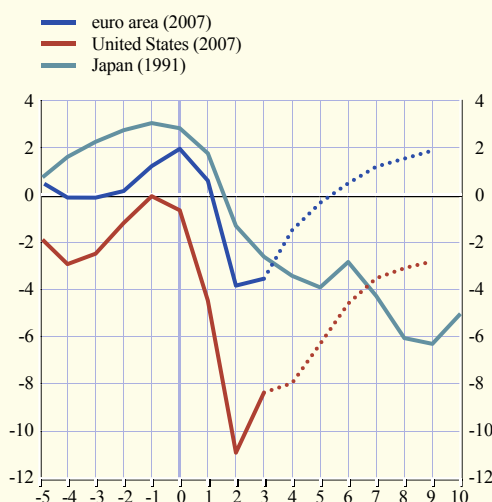
Sources: IMF World Economic Outlook, October 2011.

Note: For the United States and the euro area, actual data is until 2010 and projections are for 2011 to 2016. The years in brackets refer to the onset of the respective crises.

Chart 21 General government primary balance

(as a percentage of GDP; annual data)

x-axis: years from onset of crisis



Sources: IMF World Economic Outlook, October 2011.

Note: For the United States and the euro area, actual data is until 2010 and projections are for 2011 to 2016. The years in brackets refer to the onset of the respective crises.



comprehensive fiscal consolidation. Neither Japan in the 1990s nor the United States in the recent crisis faced considerable market pressure to adjust their high government debt levels.¹¹ As a consequence, fiscal consolidation so far has been more frontloaded and more comprehensive in the euro area. Moreover, the need to regain financial market confidence in the sustainability of public finances has triggered comprehensive reforms of the EU fiscal framework, strengthening fiscal discipline.

7 CONCLUDING REMARKS

This article has described several differences both in the causes as well as in the policy response behind Japan's "lost decade" and the recent crisis in the United States and the euro area. The latter two are rather unlikely to tread precisely the path of Japan. At the same time, Japan's experience highlights the difficulties for economies emerging from balance sheet recessions and unwinding large imbalances and shows that both the United States and the euro area face significant challenges to restore growth prospects and achieve a sustainable and enduring recovery. The recovery in both economies is thus likely to be sluggish and prone to uncertainty, in line with previous episodes following financial crises.

Japan's experience also shows that temporary improvements may not be self-sustained if the underlying root causes of the crisis are not sufficiently corrected. One lesson is that the repair of the financial system is a precondition for a durable recovery, since a dysfunctional financial sector might hamper productivity growth by curtailing investment, the forces of "creative destruction" and, ultimately, innovation. A more sustained recovery in Japan took hold only after a comprehensive strategy to restore financial health had been put in place (2001-03).¹² Even with a comprehensive policy response, balance sheet repair takes time and may lead to a reduction in flexibility and loss of capital owing to a long period of underutilisation of resources and underemployment. The Japanese experience also

underlines the importance of removing impediments to growth through structural reforms. In the absence of these reforms, problems stemming from structural deficiencies are bound to reappear and the recovery is likely to be slow, fragile and prone to reversals. While unique in its own root causes and with a legacy which is not yet fully known, the euro area sovereign debt crisis has brought to the fore structural deficiencies and shortcomings in institutional arrangements. The growing awareness of the need for reforms in Europe, together with the concrete measures undertaken aimed at a return to sound public finances, a better capitalised banking system, strengthening of euro area governance and restoring countries' competitiveness, represent welcome steps in this direction.

11 Such lack of market pressure reflects, in the case of Japan, the effect of home bias as domestic debt holdings account for close to 95% of the debt. The United States has benefited from a relatively stable investor base in the face of strong demand from institutional investors and foreign official entities. Significant central bank debt purchases under quantitative easing have also excluded portions of outstanding public debt from market pressures. See IMF, *Fiscal Monitor*, October 2011.

12 See Syed M., Kang, K. and Tokuoka, K., "Lost Decade" in Translation: What Japan's Crisis could Portend about Recovery from the Great Recession", *IMF Working Papers*, WP/09/282, 2009.