

ARTICLES

PATTERNS OF EURO AREA AND US MACROECONOMIC CYCLES – WHAT HAS BEEN DIFFERENT THIS TIME?



Economic activity in the euro area and the United States is now slowly recovering, following a recession that was deep and highly synchronised across countries around the globe. This article describes the likely reasons for the differences in the downturn in the euro area in comparison with the United States and provides some reflections regarding the prospects for recovery in both regions. The main findings are that the degree of synchronisation of economic activity in the euro area and the United States during the current cycle is largely consistent with historical evidence. That said, there have been some differences in euro area and US activity during this cycle compared with the past, and these appear to be largely explained by the nature of the current downturn, the fundamentals prior to the crisis and the way in which the private sector and policies adjusted in the two economies.

I INTRODUCTION

The recent global financial crisis and ensuing recession have had major repercussions for the euro area and US economies. The crisis was initially triggered by a precipitous decline in the US housing market that knocked down the value of large volumes of assets linked to it that were widely held across the world.¹ However, diverse vulnerabilities were present on a global scale, allowing the crisis to spill over rapidly to the euro area and the rest of the global economy. Global industrial production and trade contracted sharply and synchronously, with financial market turbulence quickly spreading across borders and continents. This article aims to address three main questions: what sets this cycle apart from past recessions and recoveries, and what were the similarities? Why was the euro area so deeply affected by a shock that began in the US housing market and at first appeared to be contained? And what are the key factors influencing the recovery in economic activity in both the euro area and the United States?²

The article is organised as follows. Section 2 describes some stylised facts about the relationship between US and euro area business cycles as derived from historical experience, as well as from previous recessions associated with financial crises. In Section 3 the article turns to the current cycle by providing a description of the downturn and the recovery in economic activity in the euro area and the United States against the background of past cycles. The following sections then seek some explanations

for recent developments, with Section 4 focusing on the nature of the shock and its transmission, and Section 5 looking at the private sector and policy adjustments made in each economy. The article concludes with some reflections regarding the evolution of the economic recovery in both areas and by highlighting the possible factors that might set this recovery phase apart from past cycles.

2 STYLISED FACTS FROM PAST CYCLES

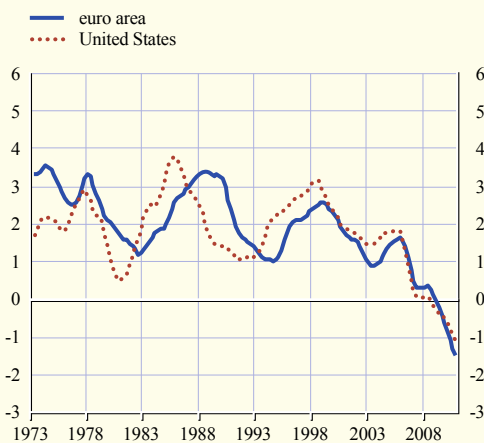
Four main stylised facts based on historical relationships may be relevant for understanding the dynamics of this recession and the subsequent recovery in the euro area and the United States and in detecting how this cycle differs from the past. These stylised facts are derived partly from looking at the characteristics of past business cycle dynamics in the United States and the euro area and partly from a historical analysis of the nature of recessions.

A first fact is that there is strong co-movement between real GDP per capita in the United States and the euro area over low frequencies (see Chart 1), with euro area growth

- 1 In particular, it has been argued that an increase in mortgage delinquencies due to a decline in US housing prices was the trigger for the full-blown liquidity crisis that emerged in 2007. See, for instance, Brunnermeier, M.K., "Deciphering the Liquidity and Credit Crunch 2007-2008", *Journal of Economic Perspectives*, Volume 23, No 1, winter 2009, pp. 77-100.
- 2 Note that this article focuses primarily on developments in the euro area as a whole, which encompass a range of developments across euro area countries.

Chart 1 GDP per capita

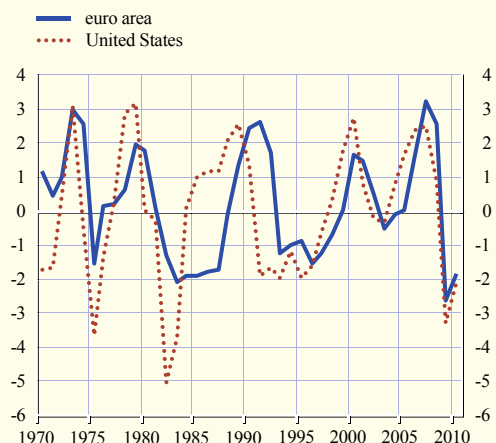
(year-on-year percentage changes; five-year centred moving averages)



Sources: Eurostat and Bureau of Economic Analysis.

Chart 2 Output gaps

(as a percentage of estimated potential)



Source: European Commission.

tending to lag that of the United States by several quarters.³ Further research has shown that there tends to be an asymmetry within cycles, in that US downturns are transmitted faster to the euro area (and the rest of the world) than upturns: it takes around two quarters for downturns to be transmitted from the United States to the euro area, while it takes around six quarters for upturns.⁴

Second, taking into account estimates of potential output and output gaps (using those provided by the European Commission), the euro area as a whole tends to exhibit milder downturns, but also slower rebounds compared with the United States (see Chart 2). This could be a reflection of the fact that the euro area is well known to be a more socially protected, but less flexible, economy than the United States.⁵

Third, there is historically a high degree of correlation between US recessions and global downturns/recessions; hence, US shocks are often a good proxy for global shocks. As an indication of this, Chart 3 depicts the percentage of advanced economies (out of a sample of 19 countries) that have been in recession over time. Most of the spikes in this chart coincide with

US recessions as defined by the National Bureau of Economic Research (NBER). The latest recession stands out as having been particularly widespread across countries: although the United States entered recession first, in the final quarter of 2007, it was swiftly followed by most advanced economies, with the euro area entering recession in the second quarter of 2008.

A fourth important stylised fact is that recessions associated with financial crises, as well as those associated with credit crunches and house price busts, have typically been particularly severe and protracted.⁶ The length and depth of

3 See Giannone, D., Lenza, M. and Reichlin, L., "Business cycles in the euro area", *Working Paper Series*, No 1010, ECB, Frankfurt am Main, February 2009.

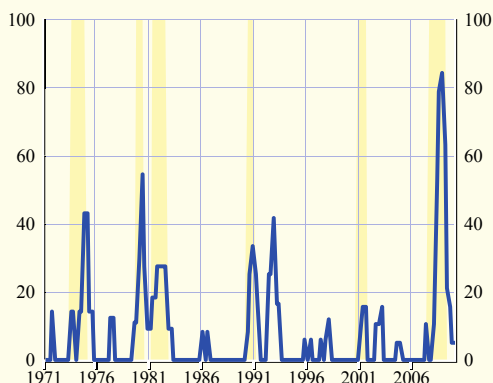
4 See Déès, S. and Vansteenkiste, I., "The transmission of US cyclical developments to the rest of the world", *Working Paper Series*, No 798, ECB, Frankfurt am Main, August 2007.

5 See Duval, R., Elmeskov, J. and Vogel, L., "Structural Policies and Economic Resilience to Shocks", *Economics Department Working Papers*, No 567, OECD, Paris, July 2007.

6 See: "The latest euro area recession in a historical context", *Monthly Bulletin*, ECB, Frankfurt am Main, November 2009; "From recession to recovery: how soon and how strong?", *World Economic Outlook*, Chapter 3, IMF, Washington, DC, April 2009; and Claessens, S., Kose, M.A. and Terrones, M., "What happens during recessions, crunches, and busts?", *Working Paper Series*, No 08/274, IMF, Washington, DC, December 2008.

Chart 3 Synchronisation of recessions across countries

(percentage of countries in recession; shaded areas denote US recessions)

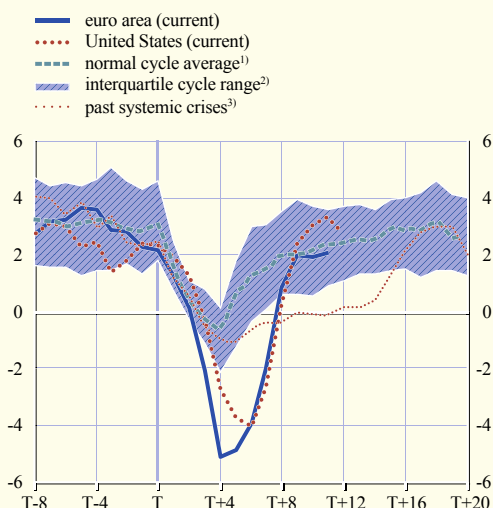


Sources: IMF, ECB and NBER.

Note: The sample comprises 19 advanced economies (Australia, Austria, Belgium, Canada, Finland, France, Germany, Greece, Ireland, Italy, Japan, Luxembourg, the Netherlands, Norway, Portugal, South Korea, Spain, Switzerland and the United Kingdom).

Chart 4 Real GDP growth in the euro area and the United States compared with past recessions and crises in OECD economies

(annual percentage changes; quarterly data)



Sources: ECB and ECB calculations, Eurostat and OECD.

Notes: “T” represents the peak GDP level prior to the recession. For the current euro area and US cycles, “T” represents the first quarter of 2008 and the fourth quarter of 2007 respectively.

1) Average real GDP growth during all recessions in OECD countries not categorised as crises.

2) The cycle range for OECD recessions is derived as the upper quartile less the lower quartile for all OECD recessions since 1970.

3) Average real GDP growth during five severe financial crises since 1970 in Spain, Finland, Sweden, Norway and Japan.

such recessions stems from the fact that, in the aftermath of financial crises, demand tends to be restrained by the need for extensive balance sheet repairs and deleveraging, while severe disruption within the banking sector also entails more prolonged credit constraints. Moreover, as financial intermediation affects all sectors of an economy and easily spills over to other countries, shocks are rapidly amplified by the financial system. As shown in Chart 4, the current downturn has been particularly severe even when compared with other systemic crises in OECD countries.

3 MACROECONOMIC DEVELOPMENTS DURING THE CURRENT CYCLE

In line with the above stylised facts, the economic slowdown during the current cycle started earlier in the United States than in the euro area, with US GDP growth already slowing in early 2007, at a time when growth in the euro area was still accelerating (see Chart 5). At the time, a widely held view was that the euro area – and the global economy more generally – could “decouple” from the United States in its downturn, given the apparently contained nature of US domestic problems and the growing importance of emerging markets in the global economy.⁷ However, as the financial crisis widened and deepened with the failure of some major financial institutions in the autumn of 2008, the recession became very deep, consistent with previous evidence on systemic financial crises.⁸

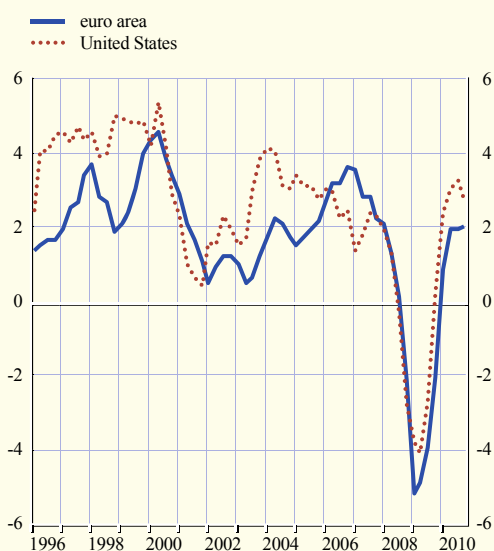
7 Contributions to the “decoupling debate” can be found, for example, in: “Decoupling the Train? Spillovers and Cycles in the Global Economy”, *World Economic Outlook*, Chapter 4, IMF, Washington, DC, April 2007; “Test of stamina”, *The Economist*, 12 April 2007; and “Global Economic Integration and Decoupling”, a speech given by D.L. Kohn at the International Research Forum on Monetary Policy, Frankfurt am Main, 26 June 2008.

8 See Reinhart, C.M. and Rogoff, K.S., *This Time Is Different: Eight Centuries of Financial Folly*, Princeton University Press, Princeton, 2009.

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Chart 5 Real GDP

(year-on-year percentage changes)



Sources: Eurostat and Bureau of Economic Analysis.

Overall, it appears that euro area activity has been hit quite severely, although the precise extent relative to the United States depends on the time span and metric used. In particular, while the contraction in actual GDP was deeper in the euro area than in the United States (see Chart 5), if one takes into account the fact that the United States typically has higher growth potential (see box), the downturn was slightly more severe in the United States (see Chart 2).

Looking at the recovery phase so far, this is somewhat at odds with past regularities identified in Section 2 of this article, as the upturn in the euro area started at the same time as that in the United States, although it has been somewhat more muted. In part, the relatively synchronised upturn appears to have been driven by the strong rebound in global trade, which has helped to boost growth in both economies.

Box

A COMPARISON OF DRIVERS OF POTENTIAL OUTPUT FOR THE EURO AREA AND THE UNITED STATES

Potential output is generally understood to provide an indication of the level of sustainable real output in the economy in the medium to long term and its rate of growth. It is also referred to as the level of output which can be achieved using available production factors without creating inflationary pressures.¹ The evolution of potential output depends on a number of underlying factors, foremost among them being supply conditions, such as the endowments of the economy relating to the key production inputs of capital and labour. The productivity of these inputs is linked to various factors, such as the efficiency with which they are combined and used, demographic trends and human capital, investment in research and development, and the institutional framework in which the economy operates, as well as structural economic policies. The rate of potential growth can change substantially over time owing to these factors.

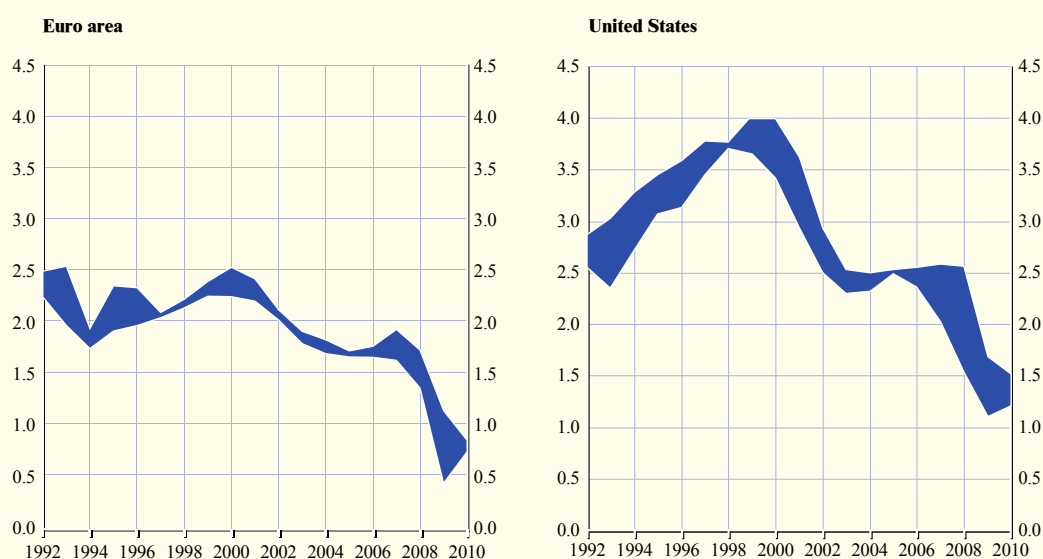
Empirical estimates of potential output are surrounded by considerable uncertainty. This is particularly the case in the current environment, as the long-term economic implications of the financial crisis are still unclear. Recent estimates of potential output indicate that potential growth in both the euro area and the United States is estimated to have fallen significantly during the recent economic downturn (see Chart A). The average rate of

¹ For a more detailed discussion of the role played by measures of potential output in macroeconomic analysis and the uncertainty surrounding its measurement, see: the article entitled "Potential output growth and output gaps: concept, uses and estimates", *Monthly Bulletin*, ECB, Frankfurt am Main, October 2000; and the box entitled "Potential output estimates for the euro area", *Monthly Bulletin*, ECB, Frankfurt am Main, July 2009.

Chart A Range of estimates of potential output growth in the euro area and the United States

(annual percentage changes)

— range of estimates by the OECD, IMF and European Commission



Sources: OECD, IMF and European Commission.

annual potential growth was estimated to be around 2.0% in the euro area in the period 2000-07, compared with 2.7% in the United States, with a relatively narrow range of estimates over this period. This compares with average estimates of 1.0% for the euro area and 1.6% for the United States in the years 2008-10, with wider ranges of estimates. All in all, the rate of potential growth is estimated to have deteriorated by similar amounts in the two economies.²

The approaches of international institutions to the estimation of potential output allow potential growth to be broken down into contributions from changes in the usage of capital and labour in the economy and contributions from changes in productivity (i.e. “total factor productivity” or “TFP”). The contributions from the labour input can be disentangled further, distinguishing between the impact of population growth, the labour market participation rate, changes in the structural rate of unemployment (the NAIRU) and changes in average hours worked.

Chart B provides breakdowns of potential output growth estimates according to the contributions of labour, capital and TFP, as well as a breakdown of the labour input for the euro area and the United States, on the basis of estimates made by the European Commission³. These charts reveal a number of interesting trends and stylised facts relating to potential growth in the years before the financial crisis: first, potential growth in both the euro area and the United States shows a downward trend in the period 2000-07. In both regions, this is mostly

² For a more detailed discussion of the factors which could explain the deterioration of potential growth in the context of the recent financial crisis, see: the article entitled “Trends in potential output”, *Monthly Bulletin*, ECB, Frankfurt am Main, January 2011; and “Impact of the current economic and financial crisis on potential output”, *European Economy Occasional Papers*, No 49, European Commission Directorate-General for Economic and Financial Affairs, June 2009.

³ European Commission, June 2009.

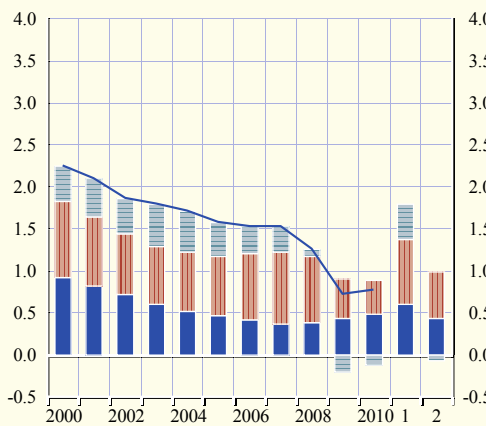
Patterns of euro area and US macroeconomic cycles — what has been different this time?

Chart B Contributions to potential output growth in the euro area and the United States 2000-10

(annual percentage changes; contributions in percentage points)

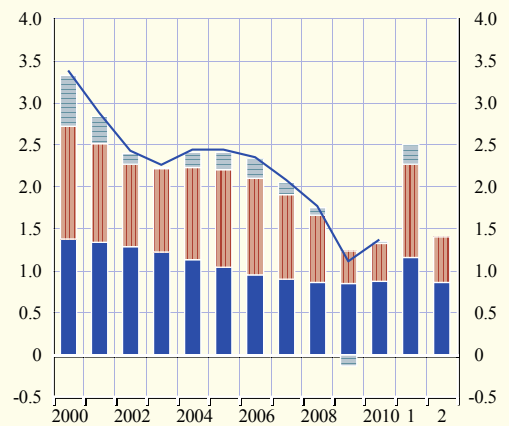
■ total factor productivity
■ capital
■ labour
— potential output growth

Euro area



1 Average 2000-07.
 2 Average 2008-10.

United States



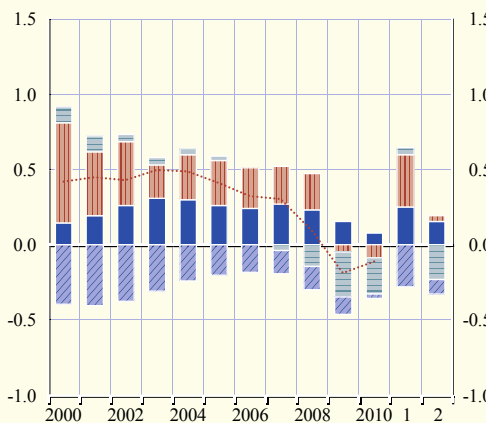
Source: European Commission.

Chart C Breakdown of the contribution made by labour to potential output growth in the euro area and the United States 2000-10

(annual percentage changes; contributions in percentage points)

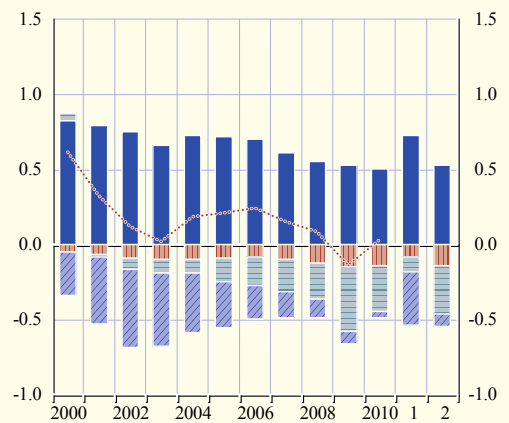
■ population growth
■ participation rate
■ unemployment
■ average hours worked
— labour

Euro area



1 Average 2000-07.
 2 Average 2008-10.

United States



Source: European Commission.

explained by the contributions from TFP, which halved from around 1% in 2000 to less than 0.5% in 2007 in the euro area, while TFP contributions fell from 1.4% to below 1% over the same period in the United States. By contrast, the contributions from the accumulation of the capital stock and from the labour input remained relatively stable in both regions. Second, while population growth was lower in the euro area than in the United States, this was more than compensated for by developments in the trend participation rate, which increased in the euro area but declined somewhat in the United States (see Chart C). Furthermore, the structural rate of unemployment is estimated to have remained broadly stable in the euro area, compared with an increase in the United States. These factors gave rise to larger growth contributions from the labour input in the euro area during the period 2000-07. However, once the potential from higher levels of participation in the euro area has been mostly exhausted, the impact of population ageing can be expected to lead to a decline in the contribution made by labour to potential growth relative to the United States. Finally, the fact that the rate of potential growth is consistently higher in the United States than in the euro area is primarily a result of more sizeable TFP growth and, to a lesser extent, a stronger contribution from the accumulation of capital in the United States.

The latest economic downturn has affected factors in potential growth in different ways: while the estimates of the contribution from TFP changed only marginally, the decline in potential growth in the context of the financial crisis is generally explained by lower contributions from the labour and capital inputs in both the euro area and the United States. Regarding the labour input, an increase in estimates of the structural rate of unemployment contributed significantly to the decline observed in labour's contribution to growth in both regions. On top of that, significantly lower increases in trend labour market participation rates added to the decline in labour's contribution in the euro area, whereas trend participation growth rates are estimated to have remained broadly stable over the crisis period in the United States. Lower contributions from the capital stock reflect the decline in investment in the context of the recent economic downturn. This effect was more sizeable in the United States than in the euro area. All in all, the lower potential growth over the years 2008-10 stems primarily from declines in the contributions from labour and capital. In the euro area, the former was more important, whereas the latter dominated in the United States.

There have been two key differences in the composition of GDP growth during this cycle across the two economies (see Chart 6). The contraction in consumption was much more pronounced in the United States than in the euro area, particularly in relation to historical evidence, as will be discussed further in Section 5. On the other hand, net trade played a substantial role in the downturn in the euro area, but until recently contributed positively to GDP growth in the United States. The difference in the contributions of net trade stems partly from a sharper decline in imports in the United States during the recession, in line with the stronger decline in consumption.⁹ Meanwhile, the behaviour of inventories, government consumption and, to a lesser extent, investment

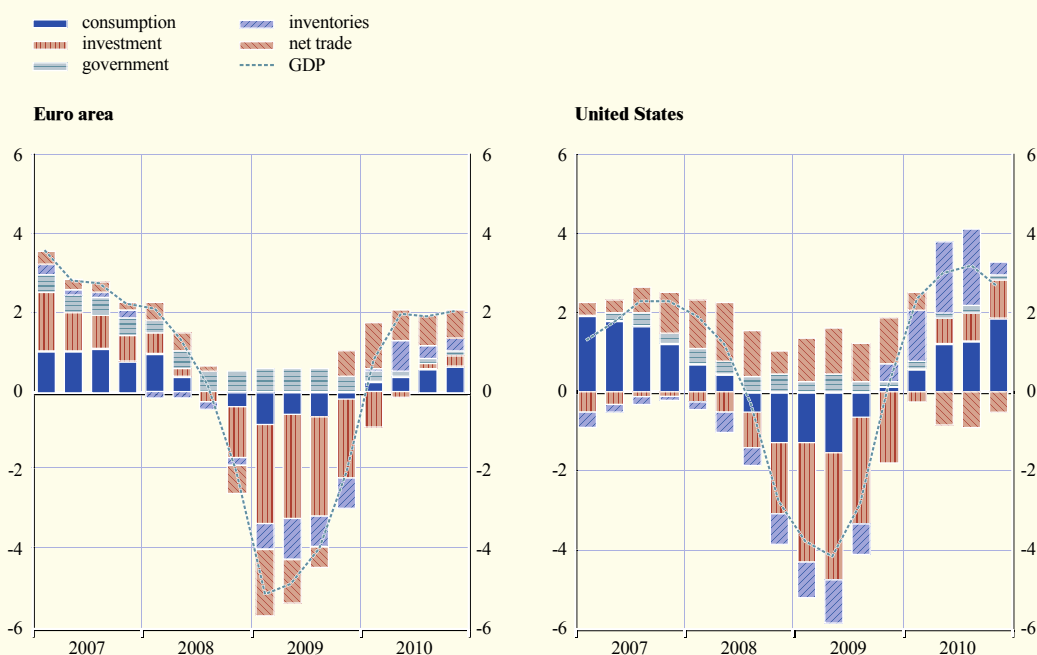
(where the decline started earlier in the United States, largely stemming from the contraction in residential investment) has been broadly similar in the two regions.

A final feature of the recent crisis has been the longer-term implications for potential output. Although the uncertainty surrounding those estimates is considerable, as outlined in the box, the estimated impact of the crisis on potential growth has, on average, been similar in the two areas, with estimates of potential output growth being revised downwards. Moreover, in line with past patterns, potential output growth is

⁹ See Baldwin, R. and Taglioni, D., *The great trade collapse and trade imbalances*, November 2009, available at <http://www.voxeu.org>

Chart 6 Composition of GDP growth in the euro area and the United States

(year-on-year growth in percentages; contributions in percentage points)



Sources: Eurostat and Bureau of Economic Analysis.

estimated to remain higher in the United States than in the euro area – an important factor determining the outlook.

Overall, historical regularities appear, for the most part, to have held during this cycle, in that: (i) the euro area has lagged the United States (at least in the downturn); (ii) the downturn in the United States was larger than that in the euro area (at least relative to potential growth); (iii) the US downturn was matched, with a small lag, by widespread downturns in other countries around the world; and (iv) the recession was particularly deep, as it coincided with a financial crisis. Nevertheless, it is useful to look deeper at the questions raised initially relating to the strong degree of synchronisation in the cycle, the depth of the recession in the euro area and whether one can gain some insights regarding the economic outlook by looking at the main underlying fundamentals and adjustments in the euro area compared with the United States.

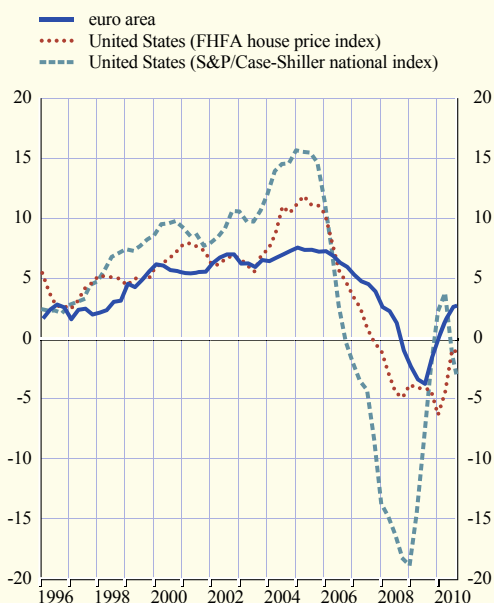
4 THE NATURE OF THE SHOCK AND ITS TRANSMISSION TO THE REAL ECONOMY AND ACROSS BORDERS

Starting with the issue of synchronisation, this section looks at the nature of the shock and its transmission. The global recession was triggered by the downturn in the US housing market, most notably the problems related to the sub-prime segment of the US mortgage market. Comparing the underlying housing market situation in the euro area and the United States, the adjustment started earlier and was much more pronounced in the United States (see Chart 7). While some signs of a stabilisation in euro area house prices have recently appeared, there are signs, from the S&P/Case-Shiller house price index, of further contraction in the United States, following a period of improvement driven largely by temporary policy stimuli.¹⁰ These differences in

¹⁰ For more details on the impact of US housing support initiatives on recent housing market developments, see Box 1, *Monthly Bulletin*, ECB, Frankfurt am Main, September 2010.

Chart 7 House prices

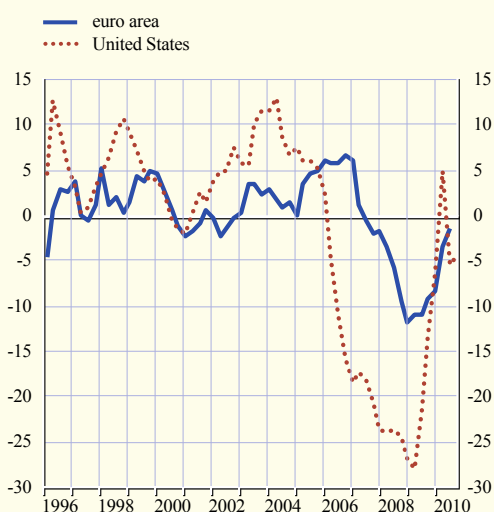
(year-on-year percentage changes)



Sources: ECB, Federal Housing Finance Agency and S&P/Case-Shiller.

Chart 8 Residential investment

(year-on-year percentage changes)



Sources: Eurostat and Bureau of Economic Analysis.

house prices across the two regions are broadly mirrored by developments in residential investment (see Chart 8).¹¹

Despite the US housing sector having been the main trigger of the crisis, the global financial system – the euro area included – was vulnerable more broadly owing to an underpricing of risk that had resulted in the compression of credit spreads and high levels of leverage. The implications for the euro area were thus more severe, owing to the global reassessment of risk premia, than they might have been if the shock had been truly US-specific.¹² The crisis eventually resulted in a deep fall in values across all asset classes. It also hit the banking systems of both economies, where the transmission was both direct via European banks' large losses on US mortgage-backed securities and indirect through the generalised increase in risk aversion and the impact of the crisis on financial market and interbank liquidity.

The rapid amplification of the shock across financial systems led to widespread uncertainty across advanced economies.¹³ Amid heightened uncertainty, global demand suffered an unusually synchronised decline, prompting sharp retrenchment in purchases of durables and investment, which led to a collapse in world

11 The strong declines in residential investment may relate to a more flexible housing supply in the United States compared with the euro area, one potential explanation for divergent regional house price paths, as outlined in Hiebert, P. and Roma, M., "Relative house price dynamics across euro area and US cities: convergence or divergence?", *Working Paper Series*, No 1206, ECB, Frankfurt am Main, June 2010.

12 Verick, S. and Islam, I., "The Great Recession of 2008-2009: Causes, Consequences and Policy Responses", *Discussion Paper Series*, No 4934, IZA, Bonn, May 2010. The authors also argue that the US sub-prime crisis was at the centre of the crisis, but by no means the cause. Four main factors caused the crisis: global current account imbalances; loose monetary policy; the search for yield and misperception of risk; and lax financial regulation.

13 In addition, the crisis exacerbated pre-existing macroeconomic imbalances in some euro area countries. Indeed, two countries are implementing an adjustment programme, while the economic governance of the euro area as a whole is being overhauled.

trade.¹⁴ Thus, the crisis was also transmitted to the global economy via confidence and trade channels. The sudden collapse in confidence around the globe, together with the combination of housing market corrections, household balance sheet adjustments and difficulties in short-term financing, all contributed to a marked decline in the consumption of durables and investment goods. This, in turn, caused a sharp contraction in global industrial production and triggered an adjustment in inventories, both of which had a strong impact on world trade (see Chart 9).

The euro area – alongside other economies with a relatively large manufacturing sector and a high degree of openness to trade – has tended to be harder hit by the slowdown in industry and trade than the United States. Industrial output excluding construction accounts for around 18% of total output in the euro area, compared with 15% in the United States. Within the industrial sector, the euro area has been affected particularly strongly (in comparison with the United States)

by the sharp downturn in global passenger car sales in 2008 and its subsequent rebound, the latter being supported by vehicle scrappage schemes in a number of countries.¹⁵ This is because the euro area has a more dominant role in the global car industry, accounting for around 22% of global passenger car production in 2009, while US production represented less than 5%.¹⁶

Export developments in the euro area and the United States have been relatively similar in this cycle (see Chart 10). However, the euro

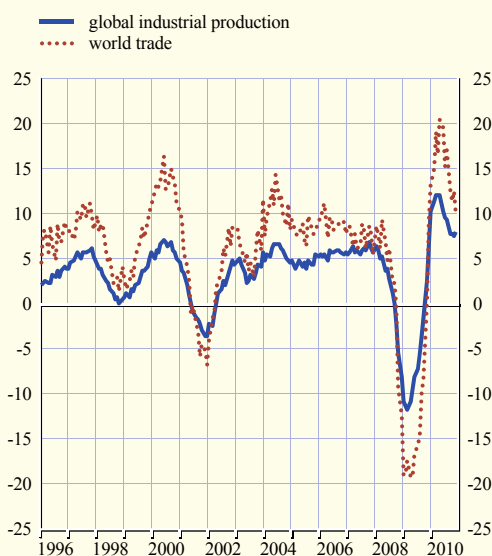
14 In the case of the United States, Robert Hall has argued that the large decline in real GDP in the latest recession reflected a decline in investment, defined broadly as including businesses' fixed capital investment, as well as housing and households' purchases of durables. Since all such components of investment rely on financial markets for funds, growth suffered particularly strongly during the downturn. See Hall, R.E., "Why Does the Economy Fall to Pieces after a Financial Crisis?", *Journal of Economic Perspectives*, Volume 24, No 4, autumn 2010, pp. 3-20.

15 Further analysis of developments in the euro area and global car industries can be found in Box 5, *Monthly Bulletin*, ECB, Frankfurt am Main, December 2010.

16 These data are based on statistics published by the International Organization of Motor Vehicle Manufacturers.

Chart 9 Global industrial production and trade

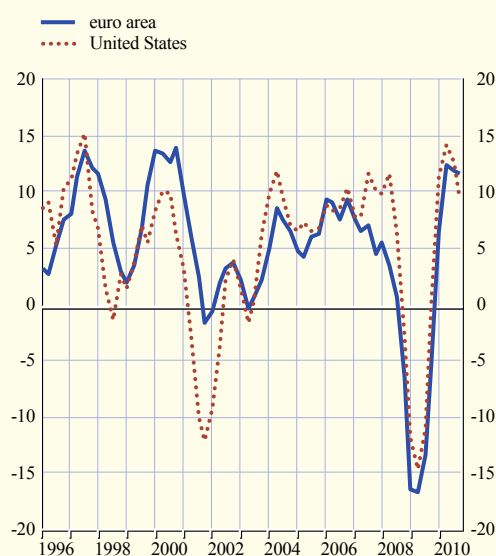
(year-on-year percentage changes)



Sources: Eurostat and Federal Reserve System.

Chart 10 Exports

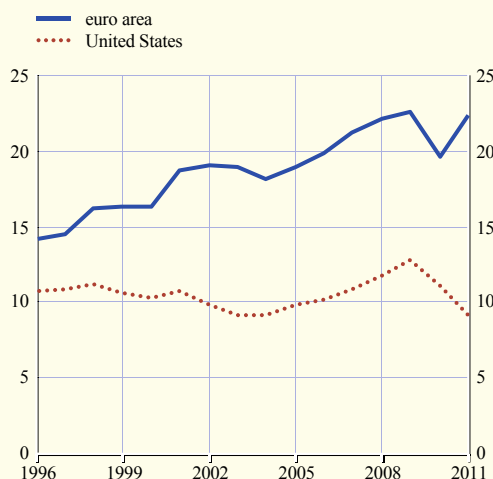
(year-on-year percentage changes)



Sources: Eurostat and Bureau of Economic Analysis.

Chart 11 Export openness

(exports of goods and services as a percentage of nominal GDP)



Sources: IMF, ECB and Eurostat.

area, being more open to trade, with exports of goods and services accounting for almost 20% of nominal GDP in 2009, compared with 11% in the United States (see Chart 11), was more negatively affected than the United States by the contraction in global trade in terms of GDP growth. Moreover, the composition of exports by geographical destination may also have proved more beneficial to US export performance in this cycle compared with the euro area. As shown in Table 1, a larger share of US exports go to developing Asia and the western hemisphere, which have been less affected by the crisis, whereas most euro

Table 1 Export destinations by region in 2009

(percentages of total exports)

	Euro area	United States
Advanced economies	76.0	58.1
Developing Asia	4.7	11.6
Middle East	3.1	3.8
Western hemisphere	2.2	22.5
Non-industrialised Europe	10.0	2.1
Africa	2.9	1.7
Other	1.0	0.1

Source: IMF.

Note: The regional aggregates are defined in the IMF's World Economic Outlook.

area exports are destined for other advanced economies and non-industrialised Europe, i.e. regions that have been affected more strongly by the crisis.

Overall, several factors explain the high degree of synchronisation during both the downturn and the upturn. The strong collapse in growth during the recession is accounted for by the global scope of vulnerabilities, together with the financial nature of the crisis and the decline in the global industrial sector, which resulted in the sharp contraction in global trade. Global trade dynamics also appear to explain why euro area activity has recovered faster than historical patterns would have suggested. The declines appear partly to have been the impact of a confidence shock, so as business and consumer confidence has rebounded across the world, the recovery has been faster, as uncertainty has declined and previously postponed investments and purchases have been renewed and trade has picked up quickly, which has benefited the euro area's recovery.

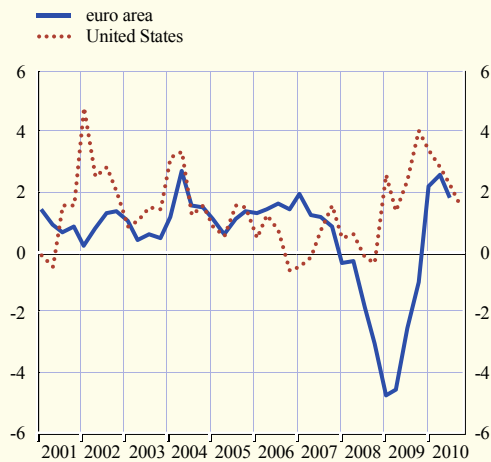
5 PRIVATE SECTOR ADJUSTMENT DURING THE RECESSION AND MACROECONOMIC POLICY REACTIONS

A notable feature of the most recent cycle has been the difference in the adjustment to the shocks in the two economies. This section explores the reaction of the corporate and household sectors to the sharp decline in activity during the recession. It also assesses how firms restored profitability by cutting employment, reviews the changes in labour market performance in the two economies compared with the past and analyses how this affected household spending. Finally, this section briefly looks at the monetary and fiscal policy adjustments made since the recession began.

Although the declines in activity in the United States and the euro area during the recession were of a broadly similar degree, the adjustments made by firms in the two economies in order to maintain or restore profitability

Chart 12 Profit margins (business sector)

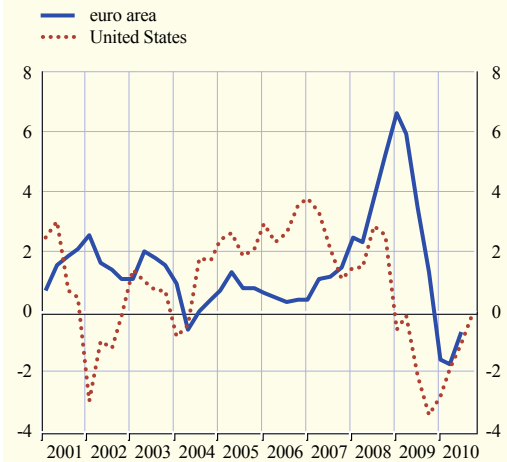
(GDP deflator divided by unit labour costs; annual changes)



Sources: Eurostat, ECB calculations and Bureau of Labor Statistics.
Note: Business sector excludes health, education and public administration services.

Chart 13 Unit labour costs (business sector)

(annual percentage changes)



Sources: Eurostat, ECB calculations and Bureau of Labor Statistics.
Note: Business sector excludes health, education and public administration services.

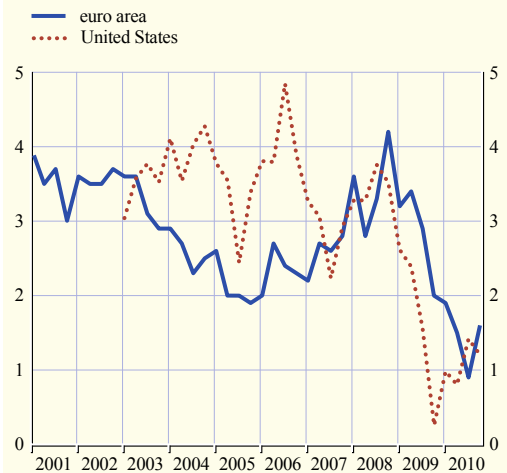
differed significantly. The dip in activity put pressure on profits in both economies, but in the United States firms were better able to protect profit margins (see Chart 12). Profit margins in the United States fell modestly during the early stages of the recession, but subsequently rebounded strongly. By contrast, euro area firms suffered a large contraction in profit margins during the recession. Those differences were primarily reflected in developments in unit labour costs during and after the recession. In the United States, firms adjusted swiftly to the recession, cutting costs sharply, such that unit labour costs fell during the recession. By contrast, in the euro area, unit labour costs increased during the recession and only started to fall back as of early 2010 (see Chart 13).

One facet of the more favourable developments in unit labour costs in the United States was greater wage restraint. When the United States entered recession in December 2007, initial wage inertia meant that the growth rate of average hourly costs continued to increase until mid-2008, but it declined sharply thereafter. In the euro area, by contrast, higher wage rigidities meant that wage growth maintained a stronger pace: growth

in hourly labour costs remained more robust, and actually rose as high as 4% year on year in the last quarter of 2008 (see Chart 14). Hourly wage growth was also boosted by extensive use of flexible working time arrangements,

Chart 14 Hourly labour costs

(annual percentage changes)



Sources: Eurostat, ECB calculations and Bureau of Labor Statistics.

particularly in Germany, whereby employees were allowed to work for fewer hours at times of lower demand without this impacting their overall annual compensation. In addition, government-subsidised short-time work schemes also allowed firms to reduce the hours worked by their employees, while national governments supplemented employees' overall pay. Both policies mechanically boosted hourly labour costs by reducing hours worked, but cushioning the impact on compensation. In contrast, short-time compensation programmes in the United States have had only a marginal impact on hourly wages. First, the use of the equivalent "work-share programs" in the United States was more limited: participation peaked at only 0.5% of the labour force – compared, for instance, with 3.4% of the labour force at the peak in Germany and more than 4% in Italy.¹⁷ Second, the reduction in working hours under these programmes also entailed a proportional reduction in weekly pay in the United States, which was only partly offset by partial unemployment compensation benefits.

The other key element of the sharp reduction in unit labour costs in the United States during the recession was the strong rebound in

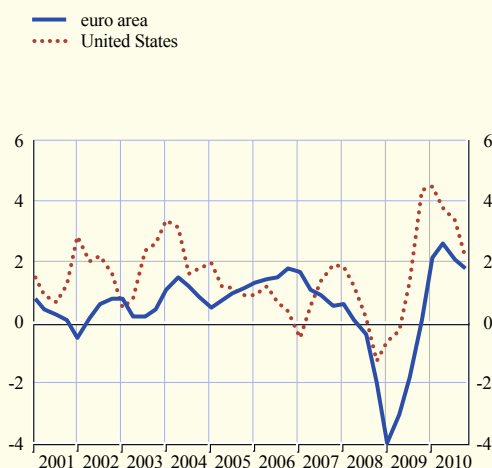
productivity (see Chart 15). By contrast, in the euro area, productivity fell significantly during the recession. The boost to productivity in the United States came at the cost of a marked decline in employment. The United States saw a larger reduction in the total labour input during the recession in terms of total hours worked (see Chart 16). The bulk of that came through a decline in persons employed, although there was also some reduction in average hours worked. In the euro area, although hours per head fell by a similar amount, the employment response was much more muted.

An important reason for the differences in the employment adjustment in the euro area and the United States appears to reflect the very extensive use of shorter working hour schemes employed in a number of euro area countries to safeguard employment, partly motivated by companies' desire to avoid losses in firm-specific human capital during a crisis that was seen as temporary. This is reflected by the

17 See "Unemployment dynamics during recessions and recoveries: Okun's law and beyond", *World Economic Outlook*, Chapter 3, IMF, Washington, DC, April 2010.

Chart 15 Productivity

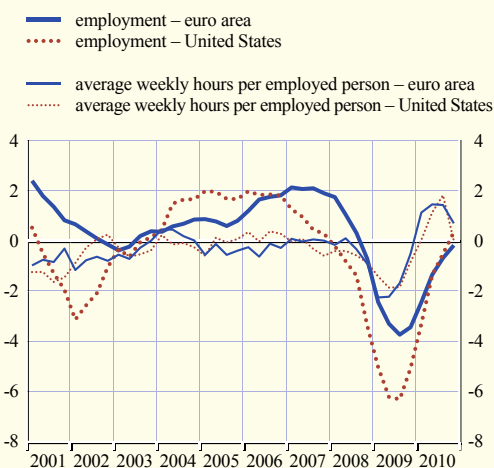
(output per person employed; year-on-year percentage changes)



Sources: Eurostat, ECB calculations and Bureau of Labor Statistics.

Chart 16 Employment and hours worked

(year-on-year percentage changes)



Sources: Eurostat, ECB calculations and Bureau of Labor Statistics.

differences in the behaviour of euro area and US employment and total hours worked for a given change in GDP (or the elasticity of labour input to output) relative to past cycles. In the United States, this elasticity appears to have been broadly in line with historical standards, while in the euro area, it was broadly comparable to previous recessions for total hours worked, but much lower for employment, suggesting that euro area employment held up unusually well in this recession.

The different responses in the euro area and the United States may, in part, have reflected differences in the nature of the shocks in the two economies. The United States experienced a pronounced housing bust, combined with a systemic financial crisis. Firms appear to have viewed the downturn as a structural shock and adjusted the labour input sharply. By contrast, in the euro area as a whole – situations in some specific countries notwithstanding – the housing market was less affected and household balance sheets were less stretched: the recession reflected more a decline in external demand and a sharp, perhaps excessive, decline in global confidence,

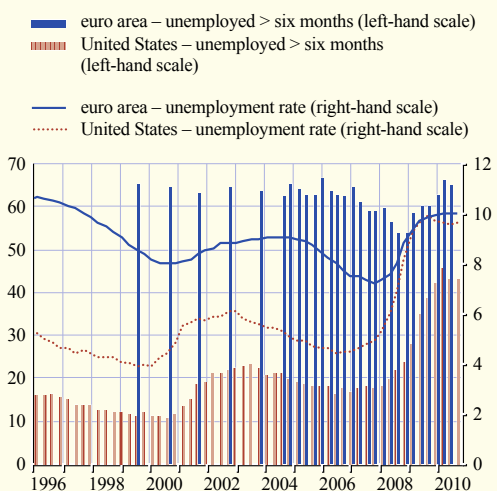
which was more likely to lead to only a temporary fall in demand.¹⁸

The result of these changes has been marked increases in unemployment in both economies (see Chart 17). However, the steep rise in the US unemployment rate stands out compared with past cycles. Moreover, this recession has seen an exceptionally sharp increase in long-term unemployment in the United States (shown in Chart 17 by the proportion of the unemployed that have been without a job for more than six months). The rise in unemployment in the United States partly reflects the features of this cycle – the length and depth of the recession and the relatively modest recovery so far. However, it is also possible that structural factors have played a role.¹⁹ First, sectoral shifts, driven by the downsizing of some sectors, such as construction, car production and financial services, may have produced a skills mismatch that has made it harder for some sections of the jobless to find employment.²⁰ Second, the high instance of negative housing equity may have reduced labour mobility.²¹ Finally, the increase in the duration of unemployment benefits may also have contributed to the rise in long-term unemployment.²²

Turning to the household sector, the weak situation in the labour market affected household spending in both economies. Private consumption has been relatively modest during this cycle compared with

Chart 17 Unemployment and long-term unemployment

(right-hand scale: percentages of labour force; left-hand scale: percentages of unemployed persons)



Sources: Eurostat, ECB calculations and Bureau of Labor Statistics.

18 The IMF notes that the response of unemployment to changes in output is stronger following recessions associated with financial crises, large housing busts and other sectoral shocks. See “Unemployment dynamics during recessions and recoveries: Okun’s law and beyond”, *World Economic Outlook*, Chapter 3, IMF, Washington, DC, April 2010.

19 See also Weidner, J. and Williams, J.C., “What is the new normal unemployment rate?”, *Economic Letter 2011-05*, Federal Reserve Bank of San Francisco, 14 February 2011.

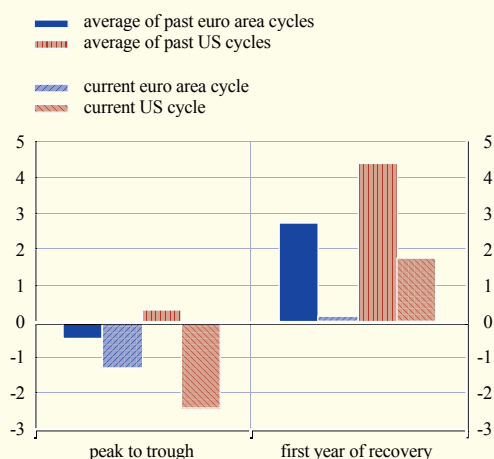
20 Some support for this view can be found in Chehal, P., Loungani, P. and Trehan, B., “Stock-market-based measures of sectoral shocks and the unemployment rate”, *Economic Letter 2010-23*, Federal Reserve Bank of San Francisco, 2 August 2010.

21 According to Ferreira, F., Gyourko, J. and Tracy, J., “Housing busts and household mobility”, *Working Paper Series*, No 14310, NBER, September 2008, US household mobility is almost 50% lower for owners with negative equity on their homes.

22 See, for example, Valletta, R. and Kuang, K., “Extended unemployment and UI benefits”, *Economic Letter 2010-12*, Federal Reserve Bank of San Francisco, 19 April 2010.

Chart 18 Private consumption during recessions and recoveries

(year-on-year percentage changes)



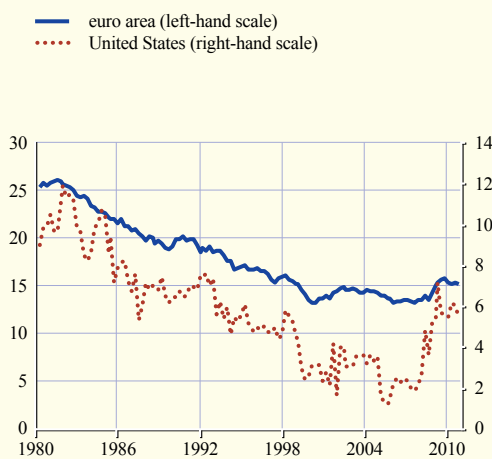
Sources: Eurostat, ECB and ECB calculations, and Bureau of Economic Analysis.

the past. Chart 18, which compares consumption developments during the recent recession and recovery with average developments in past cycles, suggests a particularly stark difference in the United States. Consumption fell during the recession by much more than in past cycles. Moreover, so far during the recovery phase, US household spending has been fairly muted.

The other main factor that has characterised the US household sector during this cycle has been the need for greater balance sheet adjustment. Prior to the recession, household debt levels were at historical highs in both economies, although the increase in debt was especially marked in the United States in the years prior to 2007. High debt levels, combined with large falls in asset prices – both housing and financial assets – have generated large declines in net worth in the United States. Those declines, coupled with the increased uncertainty regarding the economic outlook, appear to be an important factor contributing to higher savings by US households (see Chart 19), reflecting a need for households to repair their balance sheets. This has resulted in an upswing of roughly 4 percentage points in the US saving ratio since the start of the recession, a larger increase than in the euro area.

Chart 19 Household saving ratios

(percentages of households' disposable income)

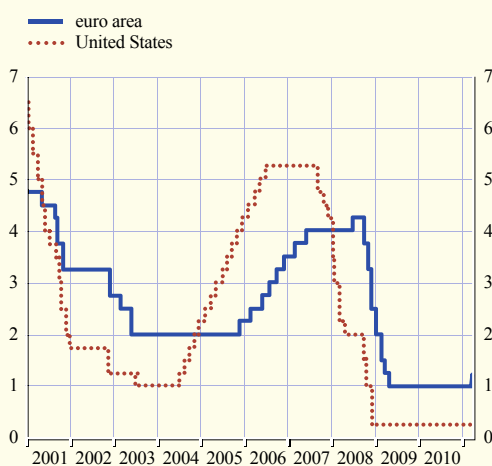


Sources: Eurostat, ECB and ECB calculations, and Bureau of Economic Analysis.

Finally, the policy responses to the recession have also differed somewhat in the euro area and the United States, partly elicited by the timing and nature of the slowdown in the two areas. The recession saw significant monetary stimulus from both the Federal Reserve System and the ECB. Interest rates were reduced (see Chart 20)

Chart 20 Central bank policy rates

(percentages)



Source: Bloomberg.

Patterns of euro area and US macroeconomic cycles – what has been different this time?

and both central banks rapidly expanded their balance sheets. Further quantitative easing is ongoing in the United States, while the ECB, although continuing its policy of full allotment in open market operations and some other non-standard policy measures, has recently increased interest rates.

Turning to fiscal policies, both governments ran larger deficits during the recession (see Chart 21). However, general government deficits in the United States have been larger than the euro area aggregate, even though there has been considerable heterogeneity in fiscal positions across euro area countries. During the recession, the increase in the overall deficit ratio between 2007 and 2009 was 8.4 percentage points in the United States, compared with 5.6 percentage points in the euro area.²³ This has meant a sharp increase in government debt levels, with US gross general government debt as a proportion of GDP surpassing that of the euro area in 2008. Since the end of the recession, governments in both economies have begun some fiscal consolidation. However, consolidation plans have been more advanced in the euro area, with the sovereign debt crisis prompting particularly

strong consolidation plans in some euro area countries. According to the European Commission, the euro area's aggregate deficit is projected to be just under 4% in 2011, while the US deficit is projected to be close to 8%. The fact that US deficits remain high highlights the more favourable debt path dynamics of the aggregate euro area position compared with the United States and points to a significant need for consolidation in the United States in the future.

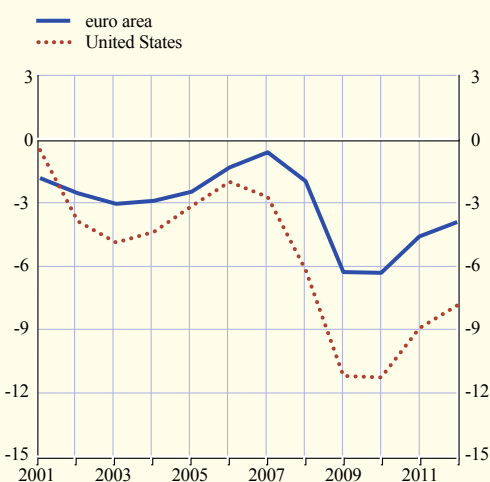
6 CONCLUSIONS

Overall, a number of factors appear to have driven the high degree of synchronisation and the depth of the recession on both sides of the Atlantic. Although the global recession was triggered by the downturn in the US housing market, there was vulnerability in the global financial system more broadly owing to an underpricing of risk that had resulted in the compression of credit spreads and the accumulation of high levels of leverage. The crisis had a common starting point in global financial markets owing to deeper inter-linkages and a simultaneous, widespread and acute general repricing of risk. This was then combined with a sharp deceleration in trade and retrenchment in investment and consumption globally. These factors, combined with the euro area's greater openness and higher share of manufacturing production, also help to explain why the euro area was so strongly affected by a shock that had originated in the US housing market.

However, although the depth and severity of this recession stands out to some extent compared with past recessions, the co-movement observed during this cycle for

Chart 21 General government balance

(as a percentage of GDP)



Source: European Commission, November 2010.
Note: Figures for 2011 and 2012 are forecasts.

23 The expansionary fiscal policies at the federal level in the United States were somewhat offset by policies at the state and local government level, which were contractionary during the recession, reflecting the pro-cyclical response induced by balanced budget requirements. According to Follette, G. and Lutz, B., "Fiscal policy in the United States: automatic stabilizers, discretionary fiscal policy actions, and the economy", *Finance and Economics Discussion Series*, Federal Reserve Board, 2010-43, the combined effects of federal, state and local budgets on aggregate demand were expansionary in 2008 and 2009.

the United States and the euro area has been relatively close to historical experience. For the most part, historical regularities appear to have held during this cycle, in that: (i) the euro area has lagged the United States (at least in the downturn); (ii) the downturn in the United States was deeper than that in the euro area (at least relative to average growth); (iii) the US downturn was matched, with a small lag, by widespread downturns across advanced countries; and (iv) the recession was particularly deep, as it coincided with a financial crisis and associated balance sheet deleveraging.

A key question, then, is: are historical patterns expected to continue in the recovery phase? Will the US rebound be as strong as in past cycles, with the euro area lagging behind? So far, both economies have seen relatively modest recoveries – at least compared with past cycles. While signs of a cyclical pick-up have now become stronger, key determinants for the outlook are also the underlying fundamentals in the two economies and the extent to which structural factors may hold back the recovery in GDP growth.

As discussed earlier, the similar headline GDP figures have masked somewhat different adjustments and fundamentals in the two economies. The United States saw a faster and sharper recovery in corporate profitability driven by cost-cutting and improved productivity. But that has been at the expense of much higher unemployment, part of which could turn out to be structural. Meanwhile, the US household sector has also undergone significant adjustment via deleveraging and rising saving rates. In this respect, a key factor for the outlook lies in the extent to which households in the United States will undertake further deleveraging and adjustments to savings in the near term. A particular pressure in that regard may come from the housing market. The latest house price data in the United States point to signs of renewed deterioration, which may be linked to the withdrawal of some of the government measures put in place to support the housing market.

The recent increases in private consumption notwithstanding, the combined pressure of continued deterioration in the housing market and continued weakness in the labour market may put further downward pressure on US household spending in the near term.

On the other hand, there may also be developments that weigh against the euro area recovery relative to the United States. The United States is estimated to have a higher potential growth rate than the euro area, owing to more favourable demographic developments and higher productivity growth. This will sustain US GDP growth rates relative to the euro area. Furthermore, there remain imbalances in some parts of the euro area. These imbalances need to be resolved, which might imply the dampening of growth prospects in some countries in the transition phase.

Finally, it should be recalled that both economies face challenging fiscal situations, which – if left unaddressed – have the potential to create feedback effects with an impact on the real economy. While the fiscal consolidation process in the euro area has started, the process of balancing budgets is expected to take several years. On the other hand, the continued fiscal expansion in the United States implies an even larger burden on the US economy looking ahead.