

THE EUROPEAN ECONOMY: MACROECONOMIC OUTLOOK AND POLICY

1. Introduction

Despite the turbulence in the financial markets caused by the problems in the US subprime mortgage market, in 2007 the world economy was in a global upswing for the fourth year in a row and growth only fell slightly as compared to 2006.

The US is experiencing a clear slowdown this winter. Although exports still support US economic expansion, private consumption growth is deteriorating noticeably. House prices have fallen in the last year and the fall has accelerated. Residential construction declined sharply and will continue to shrink at least for some time. Sales of newly constructed residential homes have decreased by more than 50 percent since their peak in 2005. Without the strong cuts in interest rates that have been made and the announced fiscal stimulus programme, the US economy might have fallen into a recession. With these policy measures, we believe it more likely that a recession can be avoided.¹ Nevertheless, the decline in private wealth due to house price reductions and enduring turbulence in international financial markets remains a substantial downward risk. It is unclear to what extent and where most of the remaining losses from the US mortgage loans will hit the banking and insurance sector. At the time of writing, negative news is accumulating. For this reason, we abstain from making forecasts for 2009.

For the second year in a row, the European Union managed to grow at a rate of close to 3 per-

cent in 2007. To a large extent growth was driven by domestic demand. Not only private consumption continued to increase notably in most European countries, private investment was almost as important for demand growth in the past two years.

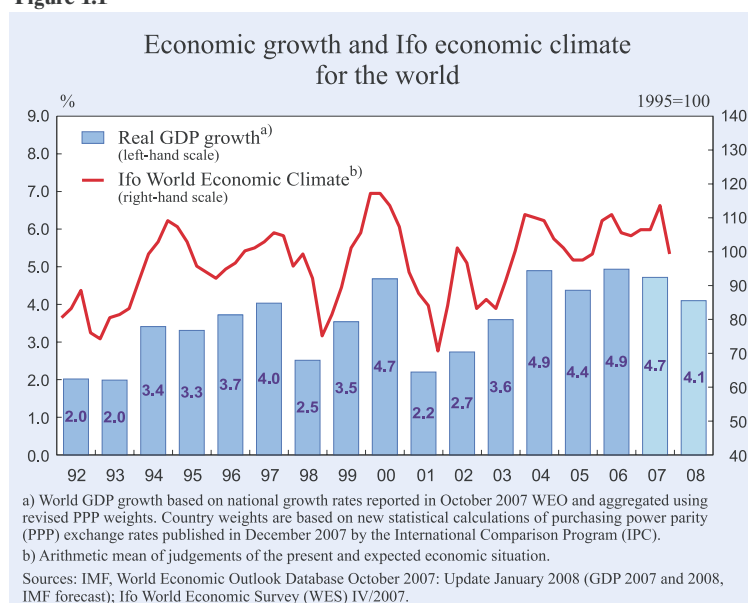
The EU is expected to grow by 2.1 percent in 2008. Beside the slowdown of the world economy, especially a slower expansion of investment in Europe is causing this growth reduction. Growth contributions of private (and government) consumption will remain of a similar order of magnitude as last year. Positive labour market developments in the past few years and associated higher wage income will continue to raise aggregate demand. Should the US move into a recession, this will probably affect Europe and the rest of the world with a delay of several quarters.

2. The current situation

2.1 The global economy

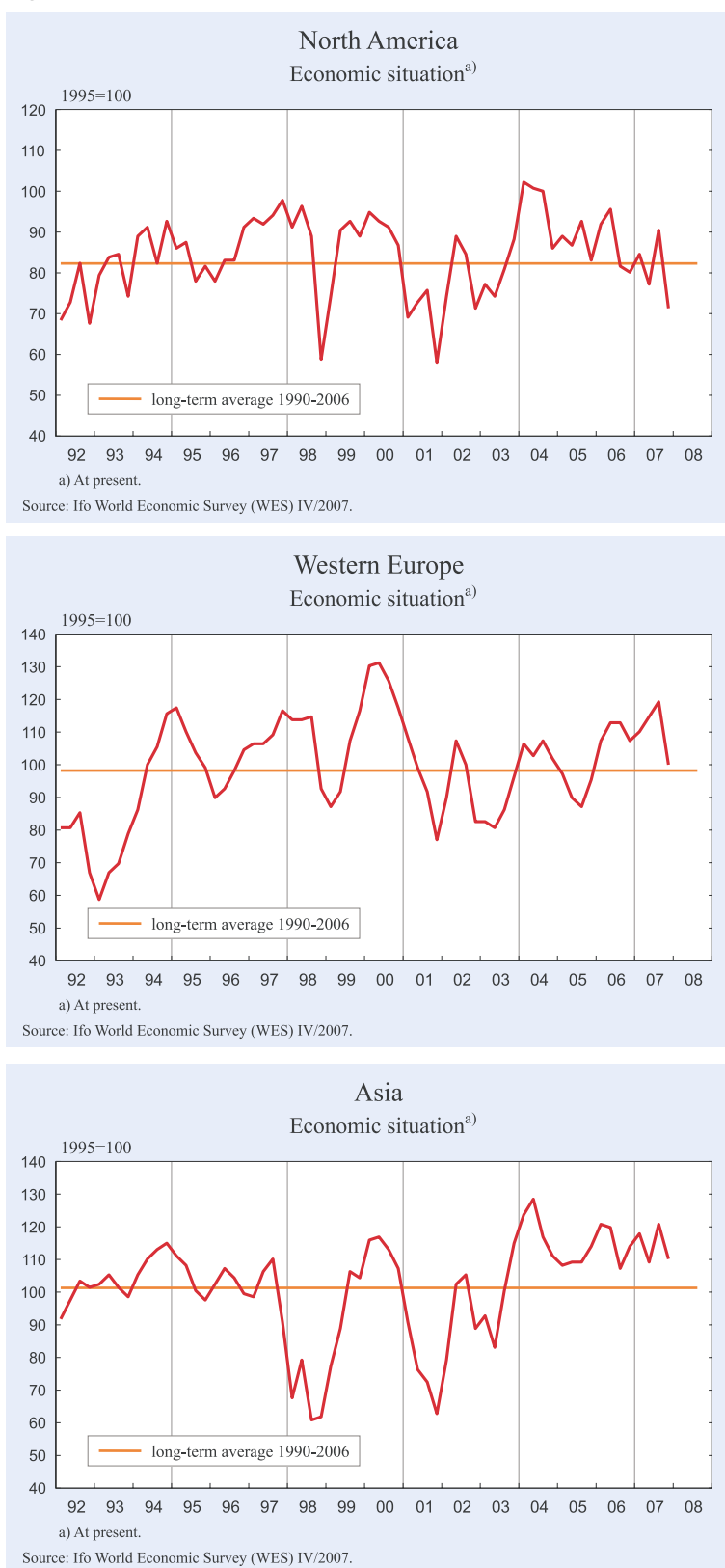
The world economy developed strongly last year. For the fourth year in a row, world GDP grew by around 5 percent when using purchasing-power-parity adjusted figures (see Figure 1.1), or by roughly 3.5 percent

Figure 1.1



¹ Note that we define a recession to be a situation in which GDP growth turns negative for at least two quarters in a row.

Figure 1.2



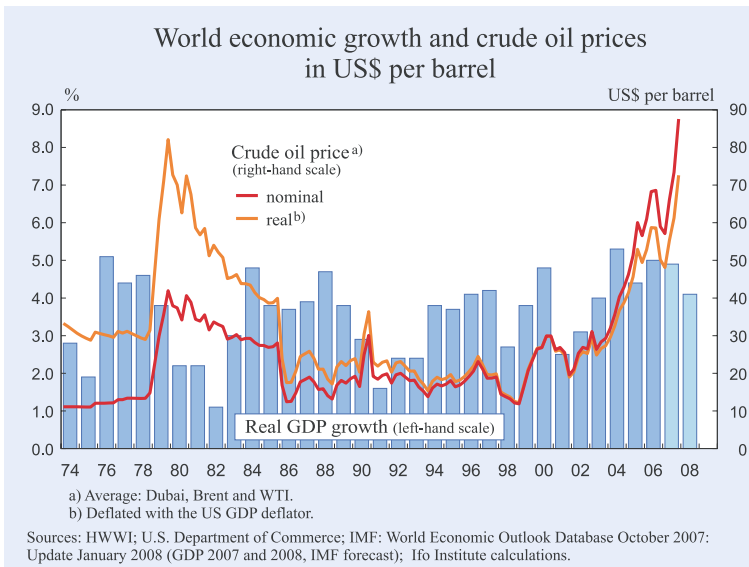
when using market exchange rates (see Table A.1). Except for the US, all regions outperformed our forecast in last year's report. This holds in particular for the fast emerging regions China, India, Russia and Eastern Europe.

During the second half of last year the risks for a slowdown of the world economy increased considerably. The main reason is the still lasting turbulence in financial markets, especially within the banking sector (see Box 1.1). The economic climate indicator of the Ifo World Economic Survey, conducted among over 1000 economic experts (but mainly active in the financial sector, that is, the sector most clearly hit by the financial turbulence) in about 90 countries, deteriorated clearly in the fourth quarter of last year (see Figure 1.1). The judgement of the current economic situation fell a bit, and the expectations for the first quarter of 2008 fell considerably. Nevertheless, the indicator still reached similar levels as in 2005, when world economic growth turned out to be 4.4 percent. Hence, this indicator suggests that the world economy passed its peak during the middle of last year and will continue to decelerate in the months to come. However, growth is still expected to remain above average. The reduction in the world economic climate as reported by the Ifo World Economic Survey mostly concerns North America, but is also reflected in responses from participants in Western Europe (see Figure 1.2).

Oil prices have increased substantially again since early 2007 (see Figure 1.3). The daily spot price of Brent Crude reached a new peak of 98.45 US dollars on January 3rd this year, having stood at around 55 US dollars per barrel in January 2007. The main cause of the current high oil price is the continually

strong increase in energy demand of emerging economies like China and India. As the OPEC countries do not appear willing to expand the supply of crude oil, prices are likely to remain high in

Figure 1.3



the near future. Only when based on consumer prices in the advanced economies, the real oil price also reached an all-time high, surpassing the previous record reached in 1980; using the US GDP deflator, however, it has still not reached that level yet. In Chapter 5 of this year's EEAG report we take a long-term perspective on future oil price developments.

The increased production of bio fuels contributes to the upward pressure on agricultural prices. These developments have already raised inflation during the course of last year. Nevertheless, with an overall inflation rate of 2.1 percent in the industrialised world, consumer prices developed perfectly in line with our forecast in last year's report.

2.2 United States

After approximately three years of continued high growth, the US economy started to cool down markedly at the end of 2005, that is, at the same time the US housing market began to deteriorate. Especially during the first quarter of last year, growth levelled off, reaching only an annualised 0.6 percent. In the subsequent two quarters, however, growth increased strongly again (3.8 and 4.9 percent). Annualised growth in the fourth quarter, by contrast, was again low: only 0.6 percent. Overall,

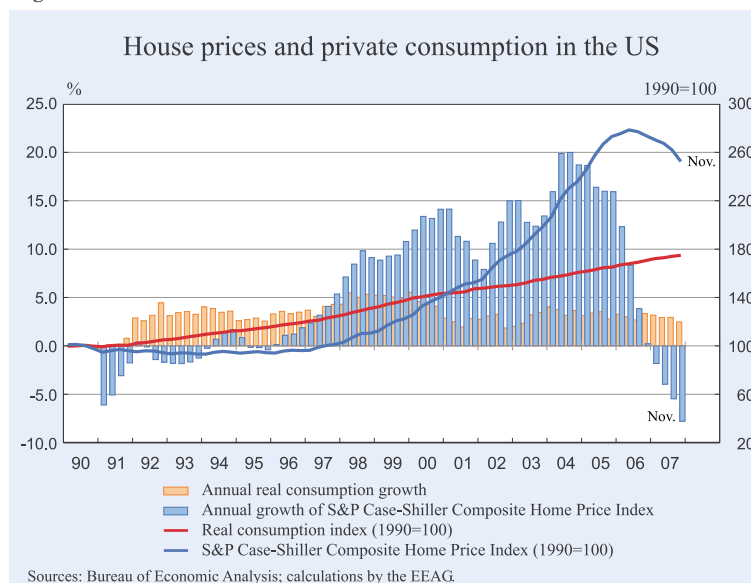
US still reached a growth rate of 2.2 percent in 2007 (as compared to 2.9 percent in 2006).

As concerns the real estate crisis, there is still no sign that the worst is over. Residential investment has been falling for eight quarters in a row, pulling down GDP growth by approximately 1 percentage point last year. Real estate prices have been falling and thus deteriorating the wealth position of home owners. Nevertheless, continued strong increases in real disposable income allowed private consumption to increase by 2.9 percent in 2007, which

helped keep up GDP growth. Supported by continued high capacity utilisation rates of firms, industrial construction above all, but also investment in machinery and equipment, have contributed positively to economic growth. Negative effects of the worsening of credit conditions caused by the sub-prime crisis have so far hardly materialised. The largest growth contribution came from exports last year. Continued high growth of the world economy together with the strong depreciation of the US dollar has boosted foreign demand for US products and services.

Except for most of 2005, the US dollar has been depreciating against the euro since the physical intro-

Figure 1.4



Box 1.1**The real estate crisis in the US**

The real estate crisis in the US and its worldwide consequences play a prominent role in the assessment of the current and future business cycle developments in the world. Not only do real estate prices affect inflation by influencing (implicit) rents, they also have large effects on total demand. Furthermore, and as suggested by developments during the past months, the peculiarities of real estate finance markets can jeopardise the stability of the financial system as a whole. This box discusses the latter two aspects.

The US real estate market has gone through two opposite phases since 1995. Whereas sales of single-family dwellings, residential investment and real estate prices all increased substantially until the end of 2005, a clear correction phase has been observed since. With rates of minus 16 percent in a year-on-year comparison, especially the decline in residential construction has been quite severe. Sales of newly constructed homes declined by more than 50 percent since the peak in 2005. Despite the reduction in building activities, there is still a large excess supply in the real estate market. Whereas it took on average four months to sell a house in 2005, owners now need approximately ten months. Given that private capital is in general tied for long periods of time in housing, excessive residential investment in the past is likely to result in long adjustment processes.

Not only residential investment has deteriorated substantially; house prices have also fallen. According to the Standards & Poor's Case-Shiller Composite Home Price Index – which covers the 22 largest urban regions in the US – prices have fallen by on average 6 percent since the peak in the first half of 2006 (see Figure 1.4), and the decline seems to have accelerated recently.

At least in two distinct ways, developments in the real estate market can affect the real economy. First of all, residential investment forms a direct part of the investment component of GDP. Second, house price developments affect private consumption indirectly by changing the wealth position of consumers. According to theory, increasing house prices stimulate private consumption as they increase the wealth of home owners. Following the same principle, falling house prices should then lead to a reduction in consumption. So far, however, consumption has hardly been affected by the slowdown in house prices since 2006 (see Figure 1.4). According to Case, Quigley and Shiller (2005), a reduction of 10 percent in the residential wealth of households nevertheless reduces private consumption by about one percent. At present, this does not warrant a severe reduction in private consumption in the US, but it may be too early to assess the full extent of this effect.

The above-mentioned information was already largely known before the outbreak of the US subprime loans crisis. Our reports in the past few years have also expressed worries about the US real estate market. Nevertheless, the crisis has led to problems both in the US outside that sector and outside the US in a way that has surprised most observers. Looking backward, two elements appear to have been detrimental. First of all, the increase in mortgage loans during the years 2004–2006 to a large extent took place within the segment of subprime mortgages.¹ Subprime mortgages expanded very substantially and in the autumn of last year totalled 14 percent of the overall mortgage market in the US.² Second, large shares of these mortgages were securitised, that is, transformed into bonds whose returns are based on the payments of a collection of individual mortgages.³ In that way they entered international financial markets and in principle have a wider spread of ownership. Despite securitisation, however, it became clear in August of last year that the risks from mortgage-backed securities continued to be largely contained within the banking sector (instead of a wider variety of investors). Although the real estate crisis did not come as a surprise, the consequences of the real estate problems for the US financial sector were much stronger than expected and revealed themselves in losses reported by banks (including many non-US banks).

The concentration and the lack of transparency within the banking sector induced a strong loss in mutual confidence. Highly liquid financial markets – which we described in past reports – suddenly turned dry as banks were hardly willing any more to lend high-powered money to each other without properly rated securities to back these up as collateral. The associated increases in the risk premiums are still prevalent in many financial markets worldwide.

¹ Subprime loans are associated with high credit risk because the borrower lacks a strong or lengthy credit history or has other characteristics that are associated with high probabilities of default.

² See <http://www.federalreserve.gov/newsevents/speech/kroszner20071105a.htm>

³ These bonds are called mortgage-backed securities (MBSs) and are often again collected and securitised. Then they are commonly referred to as collateralised debt obligations (CDOs) in case of longer-term debts or structured investment vehicles (SIVs) in case of short- and medium-term debts.

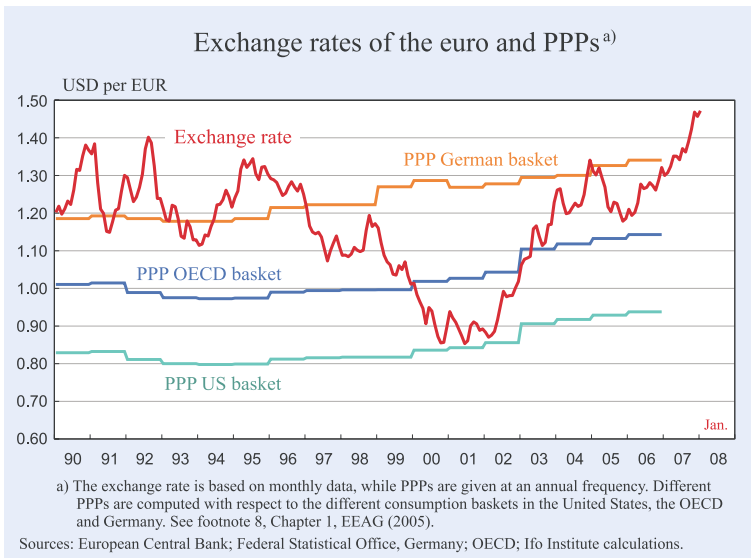
duction of the latter in 2002 (see Figure 1.5). Although this was associated with a real effective depreciation of the US dollar, US trade and current account imbalances were not reduced until last year. The current account deficit, which amounted to 6.2 percent of GDP in 2006 and thus reached the by far highest level since 1929, fell to 5.6 percent of GDP in 2007. By definition, this reduction implies an increase in national savings relative to investment (see Chapter 2 in the 2006 EEAG Report, Box 1.1 in Chapter 1 of the 2007 EEAG Report and Chapter 2 in this year's report). Last year, this increase was almost solely due to an improved government fiscal balance.

Labour markets continued to develop quite positively. Although employment lost some of its dynamics, the

unemployment rate remained at historically low levels at an average of 4.6 percent in 2007. After reaching its trough (with a rate of 4.4 percent) in March last year, it increased to 5 percent in December. Wage and salary disbursements went up by more than 6 percent in 2007, allowing real disposable income to improve by 3.8 percent in the third quarter of last year as compared to the same quarter of 2006.

Increased energy and food prices have contributed to higher CPI inflation, which reached 4.1 percent in December last year. However, the core inflation rate, that is, consumer inflation corrected for price changes of energy and unprocessed food, was hardly affected. It declined to 2.4 percent in December, after its peak in mid 2006. This allowed the Federal

Figure 1.5



2.3 Japan, China, India and other Asian countries

Up until the beginning of the 1990s the Asian economic developments were largely determined by Japan. The deep and long-lasting recession in Japan and the emergence of especially China as a world economic power has greatly changed this. In particular, when taking purchasing-power-parity adjusted data, the contribution of Asia to world economic growth has increased substantially over time. Measured this way, close to half of world economic growth stems from this region (see Figure 1.1). PPP-

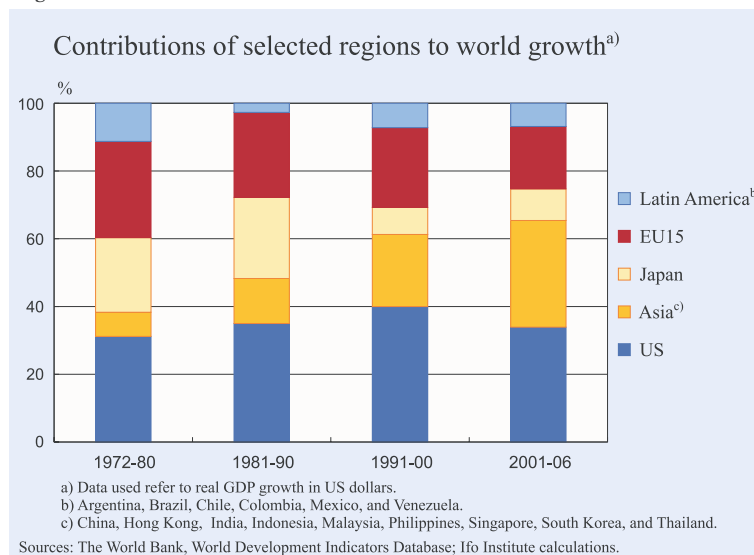
Reserve to loosen monetary policy from August 2007 onwards as a reaction to the turbulence in financial markets and the slower output growth. So far, the federal funds rate was lowered in five steps by in total 225 basis points to 3 percent at the end of January 2008. A first step of 50 basis points was taken in September and was then followed by two 25 basis points cuts in October and December. Stock market developments led the Federal Reserve to drop its key interest rate by another 75 basis points at an irregular meeting in mid January. Eight days later, at its regular meeting, a cut of another 50 basis points was decided. Together with the clear depreciation of the dollar, the monetary conditions in the US have thereby been loosened considerably.

adjustments correct for the lower price levels in China and other emerging economies – this correction is warranted from a welfare perspective. However, from a trade perspective, it makes more sense to use actual exchange rates instead. Figure 1.6 decomposes total growth (in US dollars) in the five largest regions of the world: the US, Asia (excluding Japan), Japan, the EU15 and Latin America across time and these regions. Whereas the US remains the largest contributor to growth, the increasing importance of emerging Asia becomes obvious in the diagram.

Though “oscillating”, the *Japanese* economy continued to improve slowly. Whereas, for instance, the second quarter last year showed an annualised GDP decrease of 1.8 percent, the third compensated for

The US federal government deficit improved markedly during fiscal 2007 (which ended in September). After reaching 1.9 percent of GDP in 2006, it ended at 1.2 percent of GDP last year. High revenues from income and corporate taxation caused by the strong increases in households’ incomes and in corporate profits have been the most important reasons. These additional cyclical revenues have been able to compensate for another round of expenditure increases in the health sector.

Figure 1.6



that with a growth rate of 1.5 percent. Both domestic demand and net foreign demand contributed positively to real GDP growth last year. Until midyear, the yen continued to depreciate further against the US dollar. Exports were stimulated by the still low value of the Japanese yen, especially against the US dollar. Only after July did the yen start to appreciate sharply. After a weak first half year, nonresidential investment expanded strongly during the second half of last year. This could not fully compensate for the drop in residential investment caused by revisions to the Building Standards Law. Overall, the Japanese economy grew by 1.9 percent last year.

At the beginning of 2007, employment in Japan improved strongly, but then over the summer it lost its dynamics. As a consequence, after reaching a low of 3.6 percent in July, unemployment started to increase again. On average, unemployment equalled 3.9 percent last year. As a consequence of the retirement of a sizeable number of baby boomers, average wage levels continuously decreased throughout the year. The inflation rate continued to remain slightly positive during the first nine months of the previous year. Nevertheless, the year ended without any consumer inflation, on average. Producer prices, however, surged during the second half of the year and rose by 2 percent compared to 2006.

So far, the subprime crisis in US financial markets has not affected the Japanese banking sector. The credit supply of the banks continued to be accommodating and the spread between firm and government bonds has hardly widened. Nevertheless, the still vulnerable situation of the economy induced the Bank of Japan to raise its key interest rate (on certificates of deposits with a maturity of 180 days to one year) only once to 0.5 percent in February last year.

Last year, the Japanese government was not able to continue its course of fiscal consolidation. Although government investment fell further, there was an increase in government consumption. Overall, the fiscal policy stance was neutral.

The emerging economies of Asia posted superb GDP growth rates last year, notwithstanding the growth slowdown in the US and the turbulence in international financial markets.

In *China* (including Hong Kong), Asia's growth locomotive, GDP growth last year reached 11.2 percent, which once again was significantly higher than

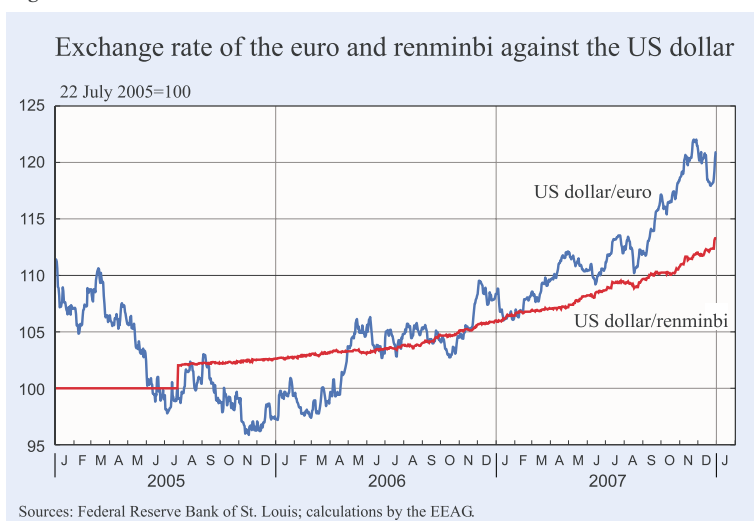
expected. This was despite the fact that growth in exports to the US, which remains the most important export destination, has weakened significantly. As in 2006, exports and investment were the main factors behind the increase in output. Investment growth slowed down somewhat during the beginning of the year, but then again increased to similar levels as last year. Despite the slowdown in exports to the US, overall exports grew very strongly. In October last year, another record current-account surplus, 27 billion US dollars, was reached, implying that capital once again flowed into China. This happened although imports grew faster than exports (because the export volume is considerably larger than the import volume). Also private consumption expanded strongly, but at rates clearly below those of exports and investment.

The inflation rate in China increased from 2.2 percent in January to 6.5 percent in December last year. Especially food prices increased substantially. Money in circulation has grown very fast. This happened despite the fact that the Chinese central bank raised both interest rates and reserve ratios in several small steps. The latter reached the highest level seen in the past ten years. Moreover, several administrative measures were put in place to reduce the extent to which credits were expanded. For example, additional regulations for handing out credits were put in place. Furthermore, price controls for food products were improved. To counter excessive asset price increases, transaction taxes were increased and investment possibilities abroad extended.

Since the People's Bank of China revalued the renminbi against the dollar by 2.1 percent in July 2005 and moved to a managed float against a basket of currencies, it has allowed the renminbi to steadily appreciate against the dollar. Last year it appreciated by 6.9 percent. Given the strength of the euro, this, however, still implies a depreciation against the euro of more than 7.5 percent during last year (see Figure 1.7). Hence, China still seems to artificially undervalue its currency.

At the end of 2007, business cycle dynamics in *India* lost some momentum. Whereas annualised growth equalled 9.2 percent during the first half of the year, it fell below 9 percent thereafter. It is mainly domestic demand that has been increasing strongly. The moderate slowdown is at least to some extent caused by a more restrictive monetary policy stance. The

Figure 1.7



central bank of India has increased its main interest rates in nine consecutive steps from October 2004 onwards. On top of that, it started to increase the reserve ratio from the end of 2006. The bank is attempting to counter an overheating of the economy and inflationary pressures. Inflation decreased from 6.7 percent in January to 2.9 percent in October. However, this should also be attributed to the stabilisation of prices for gasoline, diesel and cooking gas by the government. Another dampening effect on the economy came from the appreciation of the Indian rupee against the US dollar. This has deteriorated the export possibilities for especially industrial products and has already caused export growth to slow down somewhat.

Economic growth in the remaining group of emerging economies of Asia in 2007 was between 4.5 and 9 percent, with 5.5 percent as the average for the group. It includes *Hong Kong, Indonesia, Malaysia, the Philippines, Singapore, South Korea, Taiwan and Thailand*. In 2006 the aggregate growth rate for this region was 5.3 percent. After a moderate slowdown at the beginning of last year, with aggregate growth somewhat below 5 percent, growth in the region picked up again. The expansion was supported by both domestic and foreign demand. Over time, private consumption has turned into the main engine of demand growth. Investment demand has also increased. Despite a still strong world economic climate, exports have lost some momentum. Due to the continued expansion, unemployment has decreased further. Although to a somewhat lesser extent, employment improved as well. Inflation became higher during the year. This holds especially for Korea and Taiwan. Inflation in Korea

increased to 3.6 percent at the end of the last year, while Taiwan's inflation rate hit a 13-year high of 5.3 percent.

2.4 The rest of the world

Although in *Mexico* economic growth did not manage to reach the levels of the preceding year, business cycle developments in the entire Latin American region were still strong. With GDP growth equal to 5 percent in 2007, the region actually performed slightly better than in 2006 (4.8 percent). The region benefited from being a net exporter of energy, raw materials and food.

Although the appreciation of some of its important currencies has had a moderating effect, increased demand for food has led to relatively high inflation in the region. In particular, in countries like *Argentina* and *Venezuela*, which keep their currencies undervalued, inflation is turning into a problem. In *Brazil*, the surge in inflation has induced the central bank to stop reducing interest rates further: its main refinancing rate has been held at 11.25 percent.

Whereas in the past years high growth of exports led to an accumulation of foreign exchange reserves, since mid 2006 increased capital inflows have caused appreciations of local currencies. Favourable cyclical conditions and a turn to sustainable macroeconomic policies have made it possible to reduce government fiscal deficits or to increase surpluses.

In *Russia*, growth remained at a high level in 2007 (7.5 percent). The two most important forces behind this development were larger exports of oil and gas, and growing private consumption, supported by increased disposable incomes. The increased oil and gas exports were mainly a response to higher world market prices and not so much the consequence of increased capacities. During the year, private investment, supported by foreign direct investments, also developed strongly.

An inflation of close to 11 percent in Russia at the end of last year was clearly above the inflation target of 8 percent set by the government. Due to increased world demand, especially food prices have accelerat-

ed. Mainly administrative actions were undertaken to suppress these developments. For instance, export taxes on food were increased, whereas those for imports were reduced. Also, government grain stocks were released and price agreements were made with the most important retail chains.

2.5 The European economy

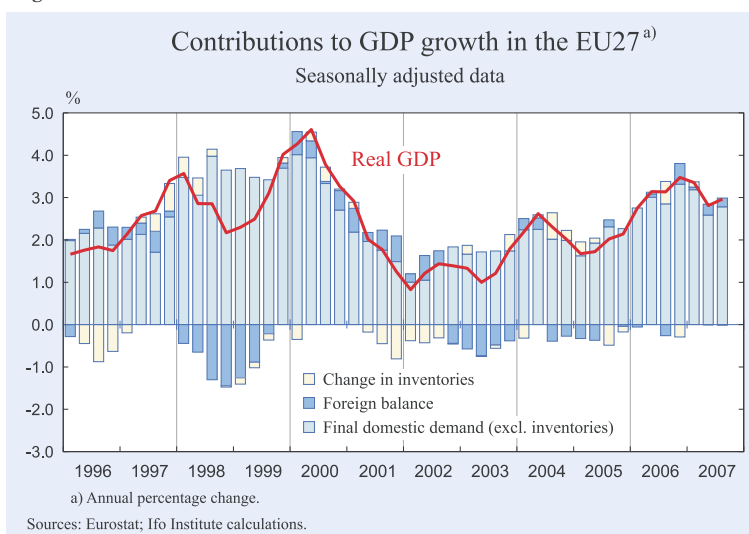
Except for the second quarter of last year, which underperformed partly due to the mild weather conditions at the beginning of the year,² the European economy (EU27) remained on its growth path, and with a rate of 2.9 percent performed almost as well as it did the year before. In particular, growth dynamics in Germany, Spain and the UK helped achieve this positive result. Strong domestic demand was usually the main contributing factor (see Figure 1.8).

The strong output growth was already signalled by the Ifo World Economic Survey for Western Europe (see Figure 1.9). In the third quarter especially the assessments of the current situation improved once more. However, the same indicator signals a cooling down of economic activity for this winter. The participants assess that the economic situation will turn less favourable due to higher oil prices, the further appreciation of the euro and the subprime crisis.

Although stagnating in the second quarter, nonresidential investment remained an important factor behind demand growth. Because of positive labour market developments, consumption gained momentum again after it basically stagnated in the first quarter of last year due to the German VAT increase. During the first three quarters, net exports again contributed positively to GDP

² The mild winter last year caused a strong increase in construction activities during the first quarter of 2007. These pull-in effects led to a sharp decline in investment growth during the second quarter, causing this quarter to clearly underperform.

Figure 1.8



growth in the European Union (see Figure 1.10).

Above-potential growth led to a further clear and continuous increase in employment and a subsequent reduction in the unemployment rate. The latter fell to an average of 7.1 and 7.4 percent in EU27 and the euro area, respectively. Whereas this implies a reduction of 1.1 percentage points for the EU27 between 2006 and last year, the fall for the euro area countries was, at 0.9 percentage points, somewhat less pronounced.

Despite the improved cyclical conditions, the increase in wages continued to be quite moderate (see Box 1.2 on explaining the downward trend in nominal wage growth). In the euro area, wages grew by 2 percent last year. Up until August last year, the consumer inflation rate in the euro area remained below 2 percent.

Figure 1.9

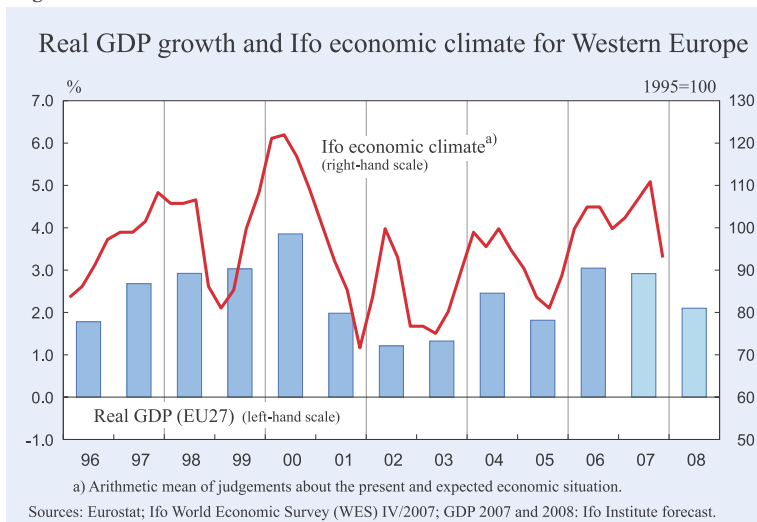
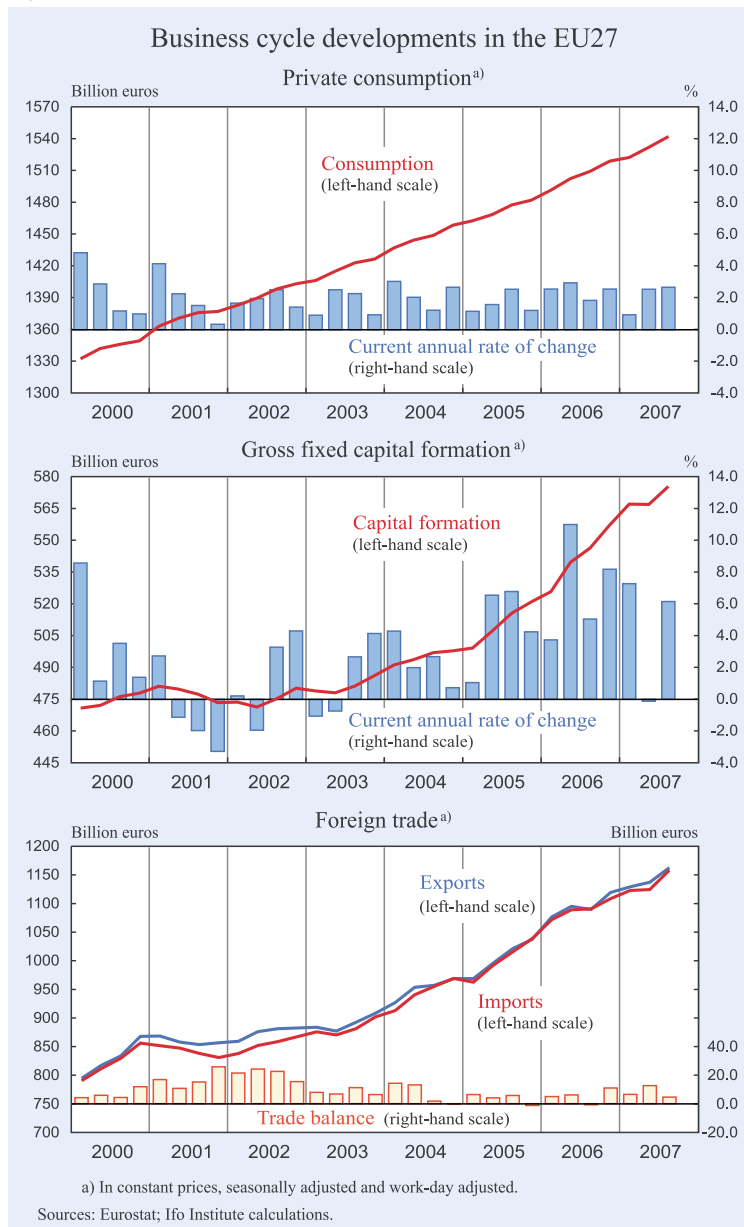


Figure 1.10

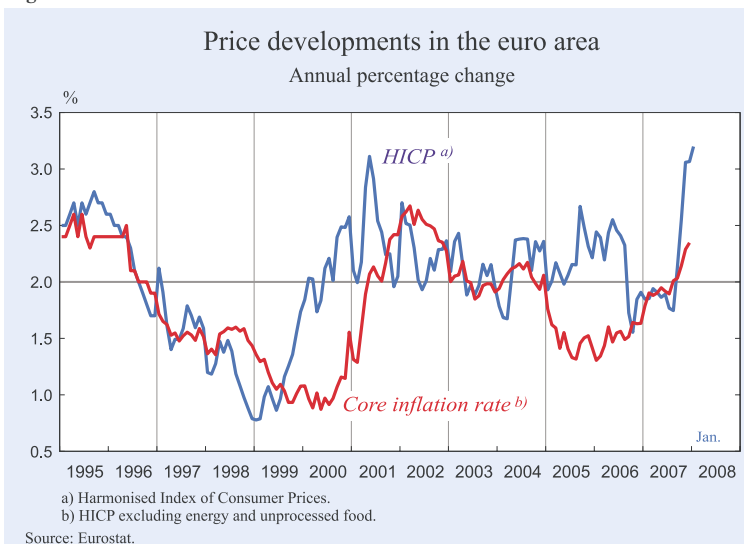


Baseline effects, that is, moderate inflation during the second half of 2006, and rapidly rising oil prices after summer 2007 caused inflation to rise throughout the remainder of last year. In November last year it even exceeded the 3 percent level. Although clearly less pronounced, a similar development can be observed in the core inflation rate, that is, the inflation rate corrected for energy and unprocessed food price changes (see Figure 1.11).

From a supply-side point-of-view, the real compensation costs of labour in the private sector barely increased in Europe last year. The increase was below those of the US and Japan (see Table 1.2 on page 26). Especially due to exchange rate developments, the competitiveness-weighted relative unit labour costs in the manufacturing sector in dollar terms appreciated for the euro area as a whole, whereas it depreciated substantially for the US and Japan. Hence, the competitive position of Europe deteriorated substantially.

The *German* economy continued to grow above potential, although its dynamics softened somewhat. Although the increase in the VAT by 3 percentage points in Germany at the start of 2007 did suppress private consumption substantially, the expansionary forces from abroad (and from the business sector via nonresidential investments) were strong enough to keep the upswing alive. The massive appreciation of the euro against the US dollar did not prevent the rest of the world from demanding more German goods. Germany has actually been one of the few countries inside the euro area

Figure 1.11



Box 1.2**Globalisation, labour market reforms and wage developments**

Over the last two decades, there has been a very significant fall in the rate of wage increases in most EU countries. These low wage increases are often seen as a major cause of weak private consumption and therefore of low aggregate demand as well as of low output and employment growth. The low wage increases are in turn often explained by factors such as monetary policy focusing on low inflation, globalisation and labour market reforms. To cast light on the determinants of wage increases, we have run a number of regressions.

Our analysis builds on a panel data set of the EU15 countries covering the period 1980–2005. The variable to be explained, and which is shown in Figure 1.12, is the yearly growth rate of the nominal hourly wage for production workers in manufacturing and is obtained from the US Bureau of Labor Statistics.¹ As can be seen, nominal wage growth indeed shows a clear downward trend. What are the reasons for this apparent downward trend? Have labour market reforms and/or globalisation contributed to it? Or is the slowdown in inflation the main explanation also for the downward trend in nominal wage growth as is suggested by the absence of any trend in real wage growth (see Figure 1.12)?

As our explanatory variables we include: (a) the growth rate of real labour productivity per hour worked, (b) the inflation rate as measured by the growth rate of the consumer price index and (c) the change in the unemployment rate (see, for example, Franz 2003). The theoretical considerations are straightforward: the higher the growth of real labour productivity, the higher can be the growth of wages without changing the shares of profits and wages in the total value of output. As regards inflation, individuals focus on real wages. The higher is inflation, the more likely employees are to push for increases in nominal wages. Finally, if unemployment increases, the more credible is the threat of employers to dismiss employees and, hence, the weaker is the employees' position in wage bargaining.² The main reason for including the change rather than the level of unemployment was that it performed much better empirically: theoretically, the formulation can be seen as an extreme version of the hysteresis hypothesis according to which the equilibrium rate of unemployment changes one to one with the past level of unemployment. To reduce the risk of reverse causality, we include beside the contemporaneous values also the first lags of our explanatory variables.³

In a next step, we add a dummy variable measuring whether or not there is a high degree of coordination in wage bargaining. It is well-documented that a high degree of coordination often is associated with lower wage growth (see also Chapter 3 of the 2004 EEAG Report). The Wassenaar Agreement in the Netherlands in 1982 is a clear example of this. Another variable describing the institutional set-up of wage setting is union density. Here, theory suggests that a more unionised labour force has a better bargaining position.⁴

Subsequently, we include a number of variables that might reflect labour market reforms: the extent of employment protection,⁵ the average unemployment benefit replacement rate and the degree of product market regulation.⁶ Finally, variables measuring globalisation are added. Here, we in particular use the "KOF Index of Globalization". It measures the economic, social and political dimensions of globalisation, which are then aggregated to an overall index of globalisation.⁷ Although total trade openness (export and imports as a percentage of GDP) and total FDI openness (inward and outward FDI flows as a percentage of GDP) are both included in the KOF index, we also show regressions using these two more traditional measures of globalisation.

Table 1.1 summarizes our regression results.⁸ All of the classic wage equation variables behave as hypothesised. The implied coefficient estimates are quite plausible. For instance, over time a one percentage point fall in inflation leads to a 0.8 percentage point fall in nominal wage growth, that is, inflation is largely but not fully compensated by nominal wage growth.⁹ Hence, the recent focus of monetary authorities to lower inflation appears rather to have led to higher real wage growth. A one percentage point rise in productivity growth is associated with only a 0.4 percentage point rise in nominal wage growth. This suggests that over time lower productivity growth – as is on average the case in our sample – has tended to increase real wage growth and reduce the profit share. Finally, if the unemployment rate decreases by one percentage point, this will over time lead to an increase of nominal wage growth of 0.75 percentage points.

Both centralised wage bargaining and union density have the expected signs and are highly significant (columns 2–6). Countries with centralised bargaining systems have on average 0.9 percentage points lower yearly nominal wage increases than countries with decentralised bargaining.¹⁰ Although significant, the effect of a higher union density rate is quite small; a fall in this rate by ten percentage points will ultimately lead to 0.15 percentage points lower nominal wage growth.

In column (3) of Table 1.1 three variables associated with market-oriented reforms are added: a measure of employment protection, the unemployment benefit replacement rate and an indicator of product market reform. None of these variables show any significant impact on nominal wage growth. Including these variables one at a time does not change this result (not shown). Hence, controlling for "economic" variables and indicators directly related to the wage bargaining process, our estimations do not reveal any significant effects of market-oriented reforms on wage developments.

Finally, we experimented with different globalisation variables. Although the KOF index of globalisation reveals a negative impact, it is not statistically significant at conventional levels (column 4). This result does not change when splitting up this aggregate index into its three major components. With respect to the traditional globalisation variables, trade and FDI shares, we once more do not find any significant effects.

The general conclusion is that the main causes of the decline in nominal wage growth in EU15 are lower inflation and lower productivity growth. Declining union density in many countries and moves towards more corporatism (in Ireland and Italy) have also made some (small) contribution. It is hard to find any *direct* indication that either globalisation or recent labour market reform have played an important role in the reduction of nominal wage growth. One explanation might be that different effects work in opposite directions and thereby cancel each other out. Globalisation may also have had indirect effects, working through productivity growth and terms-of-trade changes. These issues are discussed at some length in Chapter 3.

continued Box 1.2

¹ We have started out from a measure of compensation costs “including (1) hourly direct pay (before payroll deductions of any kind) and (2) employer social insurance expenditures and other labor taxes” (United States Department of Labor, US Bureau of Labor Statistics, International Comparisons of Hourly Compensation Costs for Production Workers in Manufacturing, 2005, Press Release, November 30, 2006, p. 7) and then corrected this variable for the non-wage labour costs using data from the same source. We have also experimented with using compensation costs and including non-wage labour costs on the right-hand-side of the equation. The results are virtually identical.

² We also experimented with terms-of-trade variables. These were, however, usually not significant in our specifications and are therefore not included in the equations shown.

³ Note that higher wage growth enforced by unions might lead to more dismissals. This would suggest a positive correlation between unemployment and wages. Hence, if anything, there will be a positive bias in our estimates of the effect of unemployment on wages. This will reduce the absolute value of the estimated (negative) coefficient.

⁴ See, for example, Chapter 3 of the 2004 EEAG Report. The data source used here is Bassanini and Duval (2006).

⁵ We use the OECD summary indicator of the stringency of Employment Protection Legislation as described in OECD (2004).

⁶ Product market regulation is captured by a summary indicator of regulatory impediments to product market competition in seven non-manufacturing industries. It covers regulations and market conditions in seven energy and service industries: gas, electricity, post, telecoms (mobile and fixed services), passenger air transport, railways (passenger and freight services) and road freight. Its original source is Conway et al. (2006).

⁷ The index makes it possible to compare degree and changes in globalisation over a large number of countries and for more than 30 years. The “KOF Index of Globalization” and its three sub-indices are calculated using principal components analysis based on in total 24 distinct variables all capturing different dimensions of the concept of globalisation. See <http://www.kof.ethz.ch/globalization> and Dreher et al. (2008) for additional information.

⁸ Tests reveal that country dummies are not required. Thus, we estimate a pooled OLS model with heteroskedasticity-robust standard errors. There appear to be no structural breaks in our sample. Furthermore, when comparing the columns across the table, changes of the specification do not alter the conclusions with respect to the baseline variables. Hence, the results point to a robust and over time stable relationship.

⁹ The long-run effect of a one percentage point change in inflation is calculated by taking the sum of the inflation coefficients ($0.33 + 0.19$) and dividing this by one minus the coefficient of the lagged dependent variable (0.37). The long-run effects of the other explanatory variables are calculated in an analogous way.

¹⁰ This variable is quite stable over time and therefore largely reflects cross-country differences.

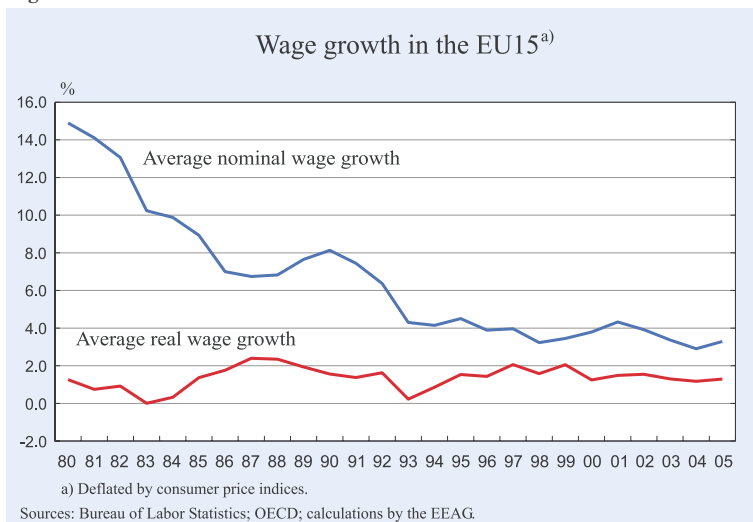
that kept on improving its export performance as measured by the ratio between export volumes and export markets.³ Despite the strong appreciation of the euro, Germany has managed to reduce its relative unit labour costs for four years in a row now. Nevertheless, export growth of somewhat more than 8 percent did not match the level of 2006 (12.5 percent). The contribution of net exports to GDP growth was about 1.5 percentage points last year. Also, increases in both nonresidential and residential investment (with rates of 8 and 3 percent, respectively) contributed significantly to a GDP growth of 2.5 percent last year, which was slightly below the average of the euro countries (2.6 percent). One of the reasons why equipment investment was able to keep its dynamics is pull-in effects caused by the imminent

worsening of depreciation allowances in German tax laws.

In sharp contrast to most other European countries, the largest spending component, private consumption, did not take off in Germany. From a cyclical point of view, the improved labour market conditions and the wage increases would normally have stimulated consumption. However, the massive VAT increase and later on the increase in food prices and another surge in oil prices reduced the purchasing power of households considerably. Consumer confidence even deteriorated in the course of the year. The willingness of consumers to buy durable goods plummeted. As a consequence the savings rate increased.

In the UK, the largest European economy outside the euro area, the economic upturn continued unabated. GDP grew by 3 percent last year and thereby by almost $\frac{1}{2}$ percentage point more than the year before. The main demand increases came from a rise in private consumption caused by higher disposable incomes. Although its growth diminished somewhat over time, investment remained an impor-

Figure 1.12



³ The calculation of export markets is based on a weighted average of import volumes in each exporting country's markets, with weights based on trade flows in 2000.

tant second pillar of demand growth. On the other hand, the trade balance deteriorated last year, with exports falling faster than imports.

While employment stagnated, the unemployment rate in the UK fell from 5.5 percent in January to 5.3 percent at the end of summer. The same figures apply when comparing the average for 2006 with the average of last year. The inflation rate, as measured by the harmonised index of consumer prices, fell from 2.7 percent in January to 2.1 percent in December last year. Also, the core inflation rate came down after a temporary surge between February and June.

Together with Italy and Portugal, *France* turned out to be the laggard in Europe, with an overall growth rate just below 2 percent. In particular, private consumption did not live up to its expectations and lost some of its dynamics towards the end of the year. The consumption of durable goods, like automobiles and domestic appliances, fell at the end of the year. Nevertheless, with a growth rate of about 2 percent for the entire year, private consumption remained the most important factor behind French demand growth. Investment also recovered strongly from its slump in the second quarter.

The increase in employment in France continued throughout the year. The standardised unemployment rate fell significantly from an average level of 9.2 percent in 2006 to 8.3 percent last year. Nominal wages increased by 3 percent in 2007. Given an inflation rate of 1.6 percent, these developments contributed to a substantial increase in real disposable income.

After a strong increase in GDP in the last quarter of 2006, the *Italian* economy weakened considerably in the course of last year. Although private consumption, as a consequence of higher employment, expanded at a rate somewhat above 2 percent, investment only rose moderately. The contribution of international trade to GDP growth remained positive, but with only 0.5 percentage points clearly less than the years before. Labour market conditions clearly brightened. The unemployment rate dropped from 6.8 percent in 2006 to 6 percent on average last year. So far this has not triggered higher wage increases. Wages rose on average by 2.1 percent last year. The international competitiveness of the Italian economy, however, continued to deteriorate. For the tenth year in a row, relative unit labour costs increased in 2007. The increase, this time at 2.1 percent, was at about the euro area average and therefore more moderate than in the

past (see Table 1.2). But there was still a further loss in market shares (see Chapter 2 of the 2007 EEAG Report for more details on the Italian macroeconomic adjustment process). Albeit with a slight upward trend, inflation also remained relatively moderate. Whereas in January inflation stood at 1.9 percent, it increased to 2.8 percent in December.

With a growth rate of 3.9 percent *Spain* was able to continue its high-growth path last year. The main cause of the economic expansion in recent years has been buoyant domestic demand. Residential investment continued to increase and by now covers about 8 percent of GDP. This could not prevent house prices from surging. A growing population, demand from abroad and historically low real interest rates all contributed to this development. Nevertheless, the Spanish economy slowed down somewhat in the autumn of last year. In particular, consumption growth fell considerably. To a lesser extent the same holds for (residential) investment. At the same time, the rise of real estate prices softened somewhat. Only the growth contribution of international trade increased as export growth outperformed import growth.

Although the number of employees continued to grow, a growing labour force kept the reduction in the Spanish unemployment rate rather small. The average unemployment rate fell only from 8.5 percent in 2006 to 8.3 percent last year. The rate of inflation remained high. In December it reached 4.3 percent after 2.7 percent in September. In January 2007 it was still 2.4 percent. Nevertheless, as compared to 2006, when the average inflation rate was 3.6 percent, an average of 2.8 percent in 2007 was still a significant improvement.

The economies of the new EU members developed dynamically last year. GDP increased by approximately 6 percent.⁴ Consumption in *Poland* as well as in the *Czech Republic* and *Slovakia* increased strongly. Especially in Poland investment increased considerably. On the other hand, exports weakened whereas imports grew strongly in some countries.

The *Hungarian* economy slowed down considerably during 2007. The consequences of the restrictive fiscal policy intended to reduce the budget deficit did not, however, restrain the economy as much as feared by

⁴ The new EU members included here are Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania and Slovakia.

Table 1.1

Regressions explaining the yearly rate of nominal wage growth

	(1)	(2)	(3)	(4)	(5)	(6)
Number of observations	261	261	261	261	261	261
Adjusted R ²	0.831	0.835	0.834	0.836	0.835	0.834
Constant	0.62 (2.80)	0.66 (2.52)	0.76 (1.47)	2.40 (1.65)	2.31 (1.37)	0.75 (2.57)
Lagged nominal wage growth	0.37 (5.56)	0.33 (5.08)	0.33 (5.14)	0.32 (4.84)	0.31 (4.84)	0.33 (5.03)
Labour productivity growth	0.15 (2.24)	0.16 (2.54)	0.17 (2.58)	0.15 (2.28)	0.15 (2.01)	0.17 (2.55)
Lagged labour productivity growth	0.08 (1.44)	0.10 (1.71)	0.10 (1.69)	0.09 (1.59)	0.08 (1.40)	0.10 (1.76)
CPI inflation	0.33 (3.23)	0.34 (3.32)	0.35 (3.34)	0.33 (3.26)	0.32 (3.16)	0.34 (3.33)
Lagged CPI inflation	0.19 (1.76)	0.19 (1.81)	0.20 (1.91)	0.17 (1.54)	0.16 (1.53)	0.19 (1.80)
Change in unemployment	-0.20 (-1.88)	-0.17 (-1.68)	-0.18 (-1.68)	-0.16 (-1.47)	-0.14 (-1.32)	-0.18 (-1.69)
Lagged change in unemployment	-0.32 (-3.11)	-0.33 (-3.26)	-0.32 (-3.19)	-0.33 (-3.27)	-0.32 (-3.03)	-0.33 (-3.28)
Coordinated wage bargaining		-0.59 (-2.82)	-0.64 (-2.76)	-0.59 (-2.83)	-0.58 (-2.67)	-0.53 (-2.09)
Union density		0.01 (2.15)	0.01	0.01 (1.92)	0.01 (2.27)	0.01 (2.16)
Employment protection			-0.14 (-0.37)			
Average replacement rate			0.01 (0.73)			
OECD indicator of product market reforms			-0.06 (-0.71)			
KOF index of globalisation				-0.02 (-1.22)		
KOF index of economic globalisation					0.00 (0.30)	
KOF index of social globalisation					-0.02 (-1.20)	
KOF index of political globalisation					-0.01 (-0.38)	
Total trade openness						0.00 (-0.50)
Total FDI openness						0.00 (-0.06)

Notes: Robust t-statistics are within parentheses. All regressions include 13 EU countries (the EU15 without Greece and Luxembourg) and cover the years 1982–2003. Total trade openness is the sum of exports and imports of goods and services measured as a share of GDP. Total FDI openness is the sum of the absolute values of inflows and outflows of foreign direct investment recorded in the balance of payments financial account as a share of GDP.

Sources: Bassanini and Duval (2006); KOF Swiss Economic Institute; OECD; US Bureau of Labor Statistics; calculations by the EEAG.

many. As compared to 2006, the fiscal deficit was reduced by almost 3 percentage points of GDP; still growth fell by less than 2 percentage points to 2.1 percent last year.

The economies of the three Baltic states continued to expand strongly, with growth rates close to 10 percent for *Estonia* and *Latvia*, and about 8 percent for *Lithuania*. Also *Romania* and *Bulgaria*, which both entered the European Union at the beginning of 2007, showed high growth rates (slightly above 6 percent).

At same time inflation rates are high. In particular, in *Latvia* an inflation rate of 10.1 percent indicates an overheating of the economy.

3. Fiscal and monetary policy in Europe

3.1 Fiscal policy

The public finance situation in both the euro area as well as the whole EU27 area improved markedly last

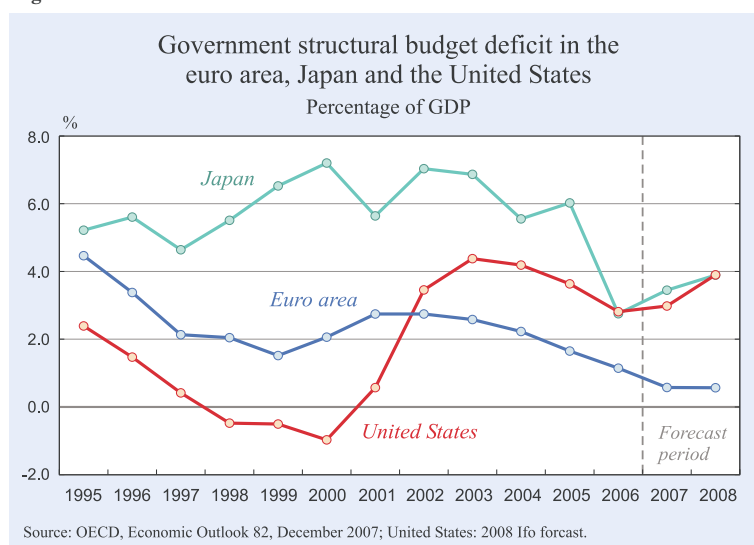
Table 1.2
The development of various measures of wages and wage costs

	Compensation per employee ^{a)}		Real compensation cost ^{b)}		Labour productivity ^{c)}		Unit labour cost ^{e)}		Relative unit labour cost ^{d)}		Export performance ^{f)}	
	2004-06	2007	2004-06	2007	2004-06	2007	2004-06	2007	2004-06	2007	2000-06	2007
	Austria	2.3	2.4	0.4	0.2	2.1	2.7	0.7	1.2	-0.1	0.3	-1.7	-1.2
Belgium	2.2	2.7	-0.1	0.7	1.5	0.9	0.9	1.7	0.5	0.9	-3.6	-0.3
Denmark	3.2	3.9	0.7	1.9	2.0	-0.4	1.3	2.7	0.4	4.1	-1.7	-2.4
Finland	3.2	2.7	2.4	1.3	2.6	2.1	0.8	2.8	-2.3	-3.5	-1.3	0.7
France	3.5	3.3	1.6	1.1	1.6	0.9	1.5	1.9	-0.2	3.9	-4.0	-2.3
Germany	0.4	1.3	-0.4	-0.5	1.2	1.0	-1.0	1.1	-2.7	-2.8	1.0	1.9
Greece	3.6	6.1	0.3	3.2	2.0	2.4	3.2	4.1	5.2	4.8	-3.6	-0.7
Ireland	5.2	4.4	2.8	2.3	1.2	2.1	5.0	3.5	1.8	3.2	-2.2	3.3
Italy	2.6	2.1	0.3	-0.5	0.2	0.5	3.2	2.9	3.4	2.1	-6.1	-4.6
Luxembourg	4.2	3.5	0.1	0.5	2.3	1.2	1.9	1.4	2.3	-0.8	1.0	0.5
Netherlands	2.2	2.6	0.6	1.2	1.8	1.4	0.1	2.6	-0.7	1.7	-1.0	0.9
Portugal	2.1	3.2	-0.6	0.4	0.8	1.9	2.4	1.5	-0.9	-2.1	-3.2	1.0
Spain	1.6	2.3	-2.5	-1.0	-0.2	0.4	2.7	3.2	2.4	2.1	-3.6	-0.5
Euro area	1.6	2.4	-0.4	0.2	0.8	1.0	1.1	2.1	0.7	2.1	na	na
Czech Republic	5.6	7.6	3.7	4.1	4.8	4.5	1.1	2.9	-1.3	-0.6	5.7	3.6
Hungary	8.9	7.6	5.5	1.8	4.3	1.7	3.9	4.0	0.7	9.9	5.8	7.5
Japan	-0.2	0.0	0.9	0.6	1.9	1.5	-1.6	-0.9	-7.1	-9.0	0.2	1.6
Poland	1.3	8.1	-1.5	4.6	2.7	1.9	0.8	5.3	1.5	0.4	1.6	-0.5
Slovakia	7.1	7.1	3.4	5.7	5.4	7.1	0.6	1.1	-1.8	6.5	3.5	6.9
Sweden	3.1	4.7	2.0	1.6	3.1	0.8	-0.2	2.6	-4.0	4.2	-0.3	-1.1
UK	4.2	3.6	1.7	0.4	1.7	2.6	2.7	0.7	4.6	2.2	-0.7	-10.1
US	3.9	5.0	0.9	2.4	1.7	1.1	2.4	2.2	-5.5	-6.1	-1.0	1.3

Notes: All figures are annual percentage changes. ^{a)} Compensation per employee in the private sector. – ^{b)} Compensation per employee deflated by GDP deflator. – ^{c)} Total economy. – ^{d)} Manufacturing sector. – ^{e)} Competitiveness-weighted relative unit labour cost in dollar terms. – ^{f)} Percentage change in the ratio between export volumes and export markets for total goods and services. A positive number indicates gains in market shares and a negative number indicates a loss in market shares.

Source: OECD Economic Outlook database.

Figure 1.13



the lowest level since 2000. In contrast to Japan and the US, the structural budget deficit in the euro area also decreased last year (see Figure 1.13).

In a majority of countries, the consolidation of public finances continued. In particular in Germany, but also in Hungary, Italy and Portugal, measures were implemented to reduce the structural budget deficit. In Belgium, Ireland and the Netherlands, which exhibited fiscal surpluses in 2006, expansionary policies were undertaken.

year. Although total government expenditures did increase somewhat, tax receipts increased even more. The fiscal deficit as a percentage of GDP decreased from 1.6 to 1.1 percent for the EU27 and from 1.5 to 0.8 percent in the euro area. For both regions, this is

Last year, the budget deficit of the *German* government improved substantially for the second year in a row (see Table 1.3). For the first time since 1989, except for 2000 when the government experienced a windfall profit from selling UMTS licences, the

Table 1.3

Indicators of the public budgets in the EU27

	Gross debt ^{a)}				Fiscal balance ^{a)}			
	2005	2006	2007	2008	2005	2006	2007	2008
Germany	67.8	67.5	64.7	62.6	-3.4	-1.6	0.1	-0.1
France	66.7	64.2	64.3	64.1	-2.9	-2.5	-2.6	-2.6
Italy	106.2	106.8	104.3	102.9	-4.2	-4.4	-2.3	-2.3
Spain	43.0	39.7	36.3	34.6	1.0	1.8	1.8	1.2
Netherlands	52.3	47.9	46.8	44.8	-0.3	0.6	-0.4	0.5
Belgium	92.2	88.2	84.6	81.7	-2.3	0.4	-0.3	-0.4
Austria	63.4	61.7	60.0	58.4	-1.6	-1.4	-0.8	-0.7
Greece	98.0	95.3	93.7	91.1	-5.1	-2.5	-2.9	-1.8
Ireland	27.4	25.1	25.2	26.9	1.2	2.9	0.9	-0.2
Finland	41.4	39.2	35.7	32.4	2.7	3.8	4.6	4.2
Portugal	63.7	64.8	64.4	64.7	-6.1	-3.9	-3.0	-2.6
Slovenia	27.4	27.1	25.6	24.5	-1.5	-1.2	-0.7	-1.0
Luxembourg	6.2	6.6	6.6	6.0	-0.1	0.7	1.2	1.0
Cyprus	69.1	65.2	60.5	53.3	-2.4	-1.2	-1.0	-0.8
Malta	70.8	64.7	63.1	61.3	-3.1	-2.5	-1.8	-1.6
Euro area	70.3	68.6	66.5	65.0	-2.5	-1.5	-0.8	-0.9
United Kingdom	42.1	43.2	43.6	44.8	-3.3	-2.7	-2.8	-3.0
Sweden	52.2	47.0	41.1	35.7	2.4	2.5	3.0	2.8
Denmark	36.3	30.3	25.0	20.9	4.6	4.6	4.0	3.0
Poland	47.1	47.6	46.8	47.1	-4.3	-3.8	-2.7	-3.2
Czech Republic	30.2	30.1	30.2	30.3	-3.5	-2.9	-3.4	-2.8
Hungary	61.6	65.6	66.1	66.3	-7.8	-9.2	-6.4	-4.2
Romania	15.8	12.4	12.5	12.8	-1.4	-1.9	-2.7	-3.2
Slovakia	34.2	30.4	30.8	30.7	-2.8	-3.7	-2.7	-2.3
Lithuania	18.6	18.2	17.7	17.2	-0.5	-0.6	-0.9	-1.4
Bulgaria	29.2	22.8	19.3	15.9	2.0	3.2	3.0	3.1
Latvia	12.5	10.6	10.2	7.8	-0.4	-0.3	0.9	0.8
Estonia	4.4	4.0	2.8	2.3	1.9	3.6	3.0	1.9
EU27	62.7	61.4	59.5	58.3	-2.4	-1.6	-1.1	-1.2

^{a)} As a percentage of gross domestic product; definitions according to the Maastricht Treaty.

Source: European Commission.

government budget will not be in deficit. It may even exhibit a slight surplus. The improvements are partly explained by increased tax revenues due to the VAT increase, reductions in subsidies and tighter means-testing for unemployment benefits. Besides these more structural changes, the cyclical upswing also caused a clear reduction in, for instance, disbursed unemployment benefits and other expenditures related to the business cycle. Hence, part of the budget improvement is structural and part of it cyclical. The 1.5 percentage point reduction of the deficit-to-GDP ratio is almost equally divided between the two parts. Whereas total government revenues increased by approximately 5 percent last year, government spending only rose by 1 percent. Part of the spending increase concerns public investment. Especially local governments started to catch up on a backlog of infrastructure projects accumulated over the years.

The situation of public finances in the *UK* worsened somewhat during the course of last year. The increase in government spending could only partly be compensated for by additional tax receipts. The deficit as a percentage of GDP increased from 2.7 percent in 2006 to 2.8 percent last year.

The *French* government continued its expansionary fiscal policy during 2007. The fiscal deficit worsened from 2.5 percent of GDP in 2006 to 2.6 percent in 2007. The debt-to-GDP ratio remained at a high level of 64 percent.

In *Italy*, public finances clearly improved last year. Whereas the deficit-to-GDP ratio stood at 4.4 percent in 2006, it was reduced to 2.3 percent in 2007. Although government spending rose, tax revenues also increased substantially. This was partly for cyclical reasons, but the increased tax progressivity implemented early in 2007 also contributed. Hence, also the structural deficit improved last year.

Fiscal policy in *Spain* was expansionary last year. Despite an income tax reduction there was a fiscal surplus of 1.8 percent of GDP.

The public finance situation in the new EU member states is quite heterogeneous. On the one hand, *Hungary* shows a very large budget deficit. On the other hand, the Baltic states report surpluses. For several new member states – and in particular for *Poland*

and *Hungary* – the fiscal situation is a clear obstacle to entering the euro area.

3.2 Monetary conditions and financial markets

The financial turmoil

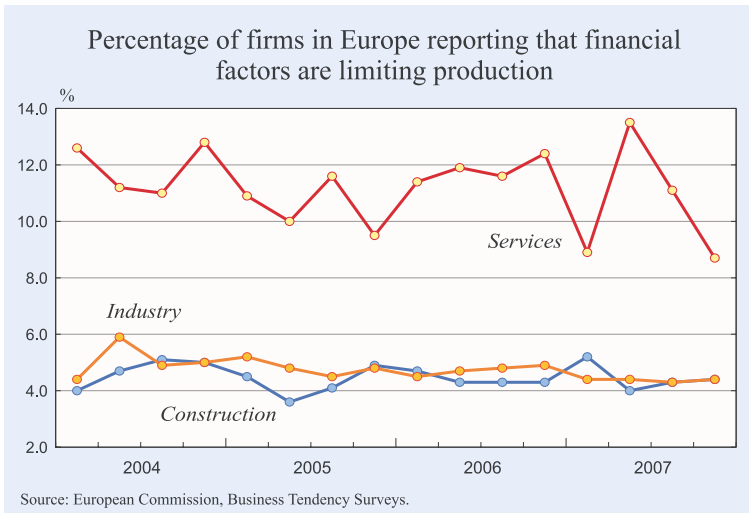
In August last year, international financial market turbulence was triggered by announcements that the German bank IKB Deutsche Industriebank AG and the French bank BNP Paribas were in trouble because of losses on investments in assets backed by US subprime loans. A sharp rise in home foreclosures and defaults of subprime mortgages in the US earlier last year led to a re-evaluation of related mortgage-backed securities. International trade in these types of assets associated with substantial credit risks had expanded strongly in recent years. At the end of last year, financial institutions had acknowledged subprime-related losses or write-downs exceeding 80 billion US dollars. However, credit loss estimates are still being revised upwards.⁵

As a consequence, financial institutions have started to worry about the quality of the assets offered as collateral by potential borrowers and their own need to finance affiliated investment funds. In particular, in the interbank money markets this led to a severe loss in mutual confidence and banks became reluctant to lend to each other. To prevent these markets from becoming illiquid, central banks around the world had to step in. Nevertheless, this credit crunch in the interbank money market could not prevent the three-month money market interest rate in the euro area from rising substantially above the marginal lending rate of the ECB. By the end of October, money markets seemed to be calming down. However, at the end of November banks started to stagger again, forcing the Federal Reserve, the Bank of Canada, the ECB and the Swiss National Bank to come up with some new tools to prevent money markets from drying out.⁶ As long as it remains unclear which financial institutions are involved and to what extent, the turbulence is bound to continue. Hence, the releases of

⁵ To put this in some perspective, though, a one percent fall in the composite index of the New York Stock Exchange implies a loss of about 190 billion US dollars in total market capitalisation.

⁶ The Federal Reserve introduced the so-called Term Auction Facility (TAF) to auction reserve funds to American banks. The Bank of Canada and the Bank of England expanded the collateral they were willing to accept in their open market operations. Finally, the Federal Reserve set up swap agreements with the ECB and the Swiss National Bank. This was the first time ever that non-US central banks were thereby offering US dollars in their open market operations.

Figure 1.14



banks' annual reports will trigger much attention in the months to come.

The question remains to what extent these liquidity problems in the interbank money market have restricted or will restrict the credit supply of banks to firms and households and thereby affect the real economy. In general, it is always difficult to find statistical evidence that clearly refutes or proves the existence of a credit crunch. In theory, we need a way to estimate the over-demand or under-supply of credits, whereas we normally only observe the actual quantity together with its price, that is, the interest rate. A credit crunch does not necessarily show up in higher interest rates. If it does not, one would expect a clear reaction in the credit volumes though.

In the euro area, the interest rates for new loans have been slowly increasing since early 2006, the time at which the ECB started its interest rate increase cycle. Especially for loans with maturities of more than five years, which constitute more than half of the total credit volume, interest rates have remained stable since the outbreak of the subprime crisis. After a short-lived rise in August and September, short-term consumer credit rates fell back to the level prevailing in July.

Turning to credit volumes, there is also not a clear change in pattern visible since August last year. In the euro area, credit

growth to non-financial corporations remains at a historically high level (with an annual rate of increase of 14 percent in the second half of 2007). Only for mortgages have the growth rates been decreasing since spring 2006. Year-to-year growth rates for these types of loans nevertheless still equalled 7.6 percent in November last year (see Figure 1.16).

So far, there appears no evidence in favour of a credit crunch scenario. That, however, does not imply that there is none (or that

one will not develop in the near future). As already noted, the data shown concern equilibrium values and do not indicate the extent of under-supply or over-demand of loans. Surveys explicitly asking for how difficult it is to receive funding from banks, or how restrictive banks are when it comes to supplying credits, may shed more light on this issue.

In the business tendency surveys published by the European Commission each quarter, firms in the manufacturing, services and construction sectors are asked to report the factors that are currently limiting production. One of the potential answers is the existence of financial constraints. Figure 1.14 shows that on a European level the share of firms indicating that financial constraints are hampering their production possibilities has hardly changed over time. If anything, there appears to be a downward

Figure 1.15

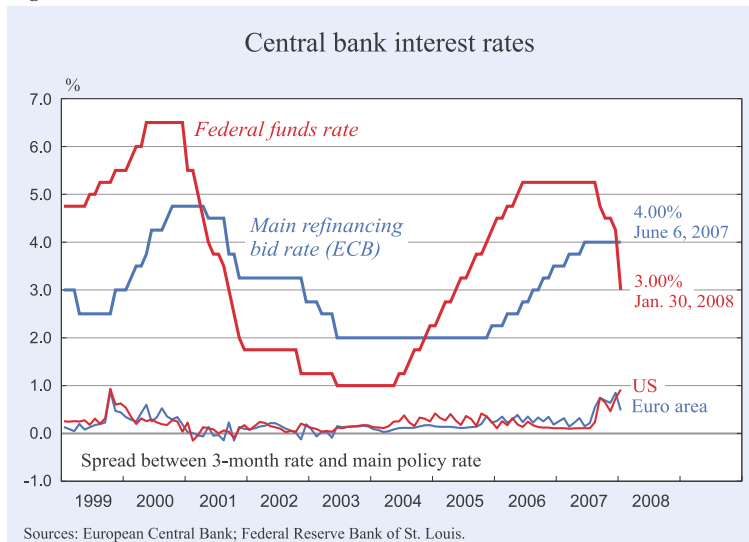
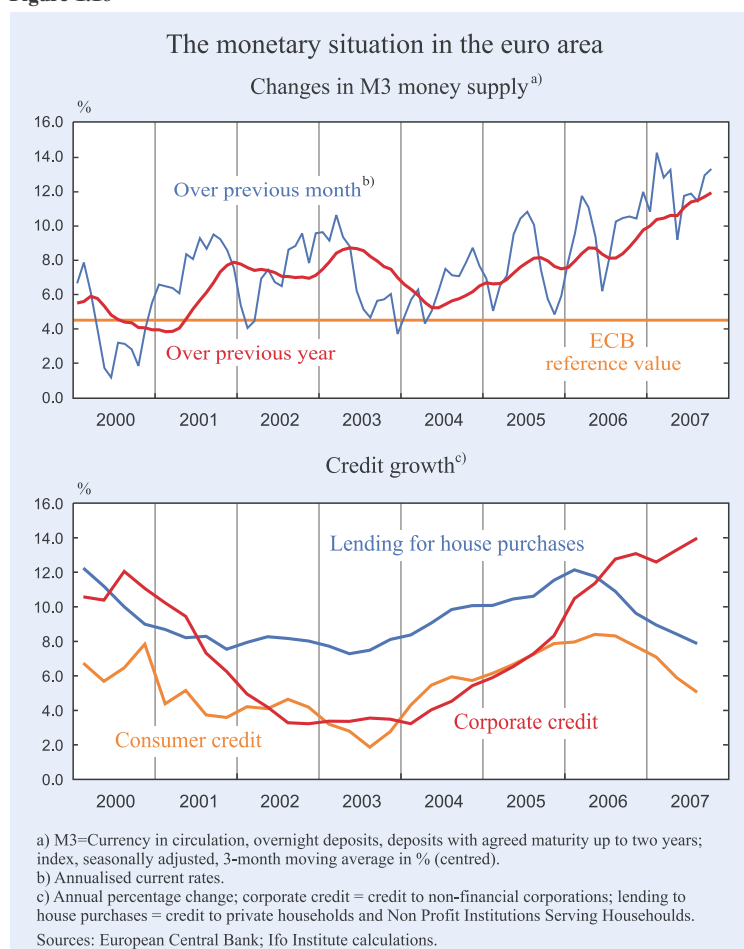


Figure 1.16



trend for especially the services sector, which now reports that 8.7 percent of the surveyed firms face financial constraints. This is the lowest value since this survey question has been asked. For the manufacturing and construction sectors, the latest surveys in the fourth quarter of last year report a value of 4.4 percent each.

Finally, we turn to the Bank Lending Surveys conducted by the ECB among the private banks within the euro area. The main objective of the survey is to enhance the Eurosystem's knowledge of financing conditions in the euro area and hence to help the Governing Council of the ECB assess monetary and economic developments as an input into monetary policy decisions. The survey is designed to complement existing statistics on retail bank interest rates and credit with information on supply and demand conditions in the euro area credit markets and the lending policies of euro area banks.

The results of the October 2007 bank lending survey, which refer to the third quarter of the year, indeed started to indicate a net tightening of the credit stan-

dards for loans to enterprises and housing loans. This follows a period in which standards remained basically unchanged or eased slightly. The subsequent survey of January 2008 – referring to the last quarter of 2007 – saw a further increase in net tightening of credit standards. Both surveys point towards a deterioration of the economic outlook as a driving factor. However, the tightening of standards probably also reflects the worsening of global credit market conditions.

Both the October and January surveys contained a set of ad hoc questions addressing the effect of the US subprime crisis on credit standards and lending in the euro area. According to these surveys, loans and credit lines to (especially large) enterprises were more affected than loans to households. Although a vast majority of the respondents notes that the recent turmoil in the credit markets had, and will

basically have, no impact on their credit standards for most loan types,⁷ the share that expects it to have an effect on credit standards in the future is still somewhat larger than the share that states it already had an impact during the third and fourth quarter of last year.

Summing up, banks report that the recent tensions have hampered their access to funding – and especially to those related to the securitisation of loans for house purchases – and that this will probably continue for the next few months. As a consequence, it has become more difficult for banks to supply loans to firms and households. Furthermore, the bank lending survey does report that credit standards at least to some extent have been and will continue to be tightened. Part of this development might indeed be due to the recent financial turbulence. Nevertheless, at least up until now, interest rates for non-financial corpora-

⁷ The only clear exception are loans and credit lines to enterprises intended for mergers and acquisitions and for corporate restructuring. Here banks reported that the recent turmoil in financial markets contributed somewhat to a tightening of credit standards.

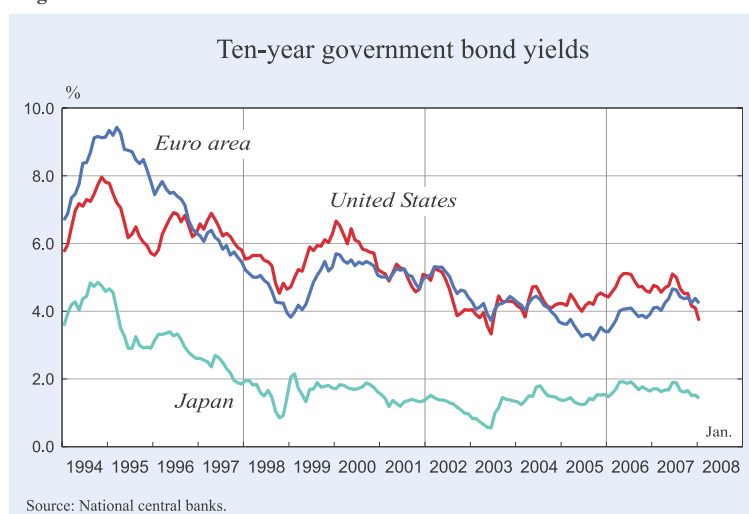
tions and households loans do not appear to have been affected by much. Neither have credit volumes. The situation might change should the write-offs in annual accounts necessitated by the subprime crisis destroy substantial fractions of bank equity. To protect their tier-one ratios, banks would then have to curtail their loans even if debt capital were amply provided by central banks.

Monetary conditions in Europe

In the euro area, the monetary conditions were clearly tightened in the course of 2007. Not only did the two interest rate increases of 25 basis points by the ECB in March and June, raising the main refinancing rate to 4 percent, contribute to this (see Figure 1.15). Also the appreciation of the euro was very important (see Figure 1.20). On top of that, the turbulence in financial markets caused severe liquidity problems in the European interbank market. As a consequence, the three-month interbank rates increased well beyond the main refinancing rate. During September and October the spread was approximately 70 basis points. After falling slightly in November, it again surged to an average of 85 basis points in December. This development made the ECB refrain from further interest rate hikes in the second half of last year.

The annual growth of money supply, as measured by M3, increased to an unprecedented level of more than 12 percent at the end of last year (see Figure 1.16). The turmoil in financial markets and the associated flight to more liquid assets was the driving force behind this. However, it was not the only force as also credits to firms continued to expand strongly throughout 2007. Last year was the seventh consecutive year in which M3 growth exceeded the ECB reference value of 4.5 percent. Looking at the more narrowly defined M1, money growth fell to a more or less stable level of about 6.5 percent throughout the entire year.

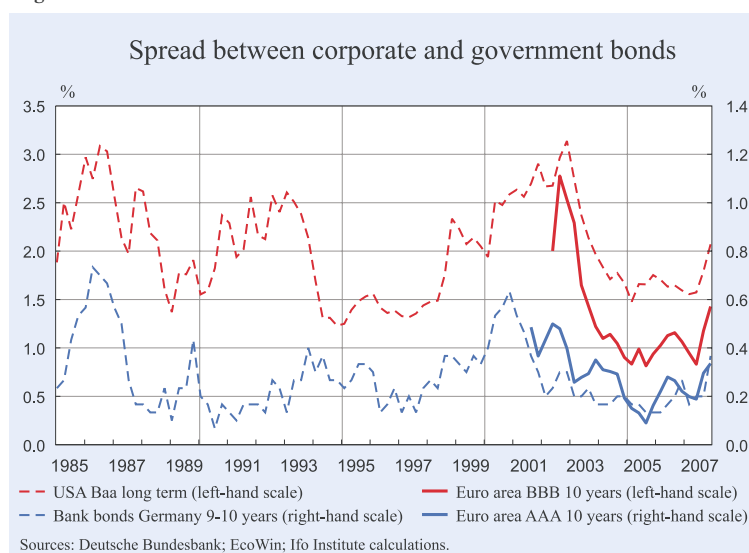
Figure 1.17



During the first half of last year, the Bank of England continued its sequence of interest rate increases to counter the inflationary risks. In January, May and June the bank increased its official bank rate paid on commercial bank reserves in steps of 25 basis points to reach a level of 5.75 percent. Reduced growth and lower inflation forecasts for the future then induced the bank to lower the rate to 5.5 percent in December.

The central banks in the new EU member states followed different monetary policies last year. Whereas in Poland and in the Czech Republic, key interest rates were raised in several steps, they moved in the opposite direction in Hungary and Slovakia. The differences in these policies were at least partly due to differences in inflationary developments.

Figure 1.18



Bonds, stock and foreign exchange markets

While the return on government bonds followed the upward trend of money market rates during the first half of 2007, there was a decoupling during the second half of the year (see Figure 1.17). The increased demand for safe assets, as caused by the financial turmoil, led to a clear decline of about 40 basis points since mid year for most government bonds of euro area member countries. This reduction was less pronounced for corporate bonds, especially those with lower ratings. Especially in December, increased risk aversion led to a further rise in the interest differential between corporate and government bonds. However, these spreads have not reached the levels seen in 2002, the early 1990s or in 1986 (see Figure 1.18).

Except for a clear set-back in March, stock markets tended to move upward during the first half of the year. But the subprime crisis made share prices drop substantially in July and August. Probably due to the rate cuts by the Federal Reserve and substantial liquidity injections by the ECB, they did recover in the two succeeding months. This could not prevent stock markets from falling again in November and December last year. As a result, the Euro STOXX 50 was at the end of 2007 about 80 points (or about 2 percent) below its level at the start of the turmoil, that is, midyear 2007 (see Figure 1.19). Over the year,

Figure 1.19

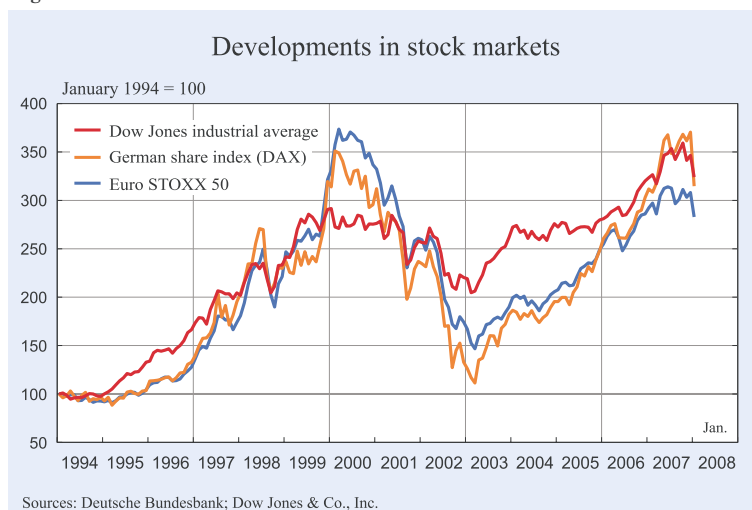
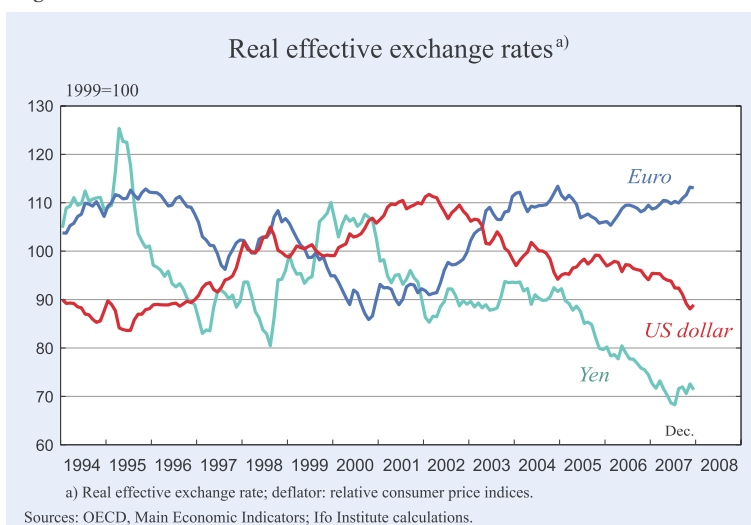
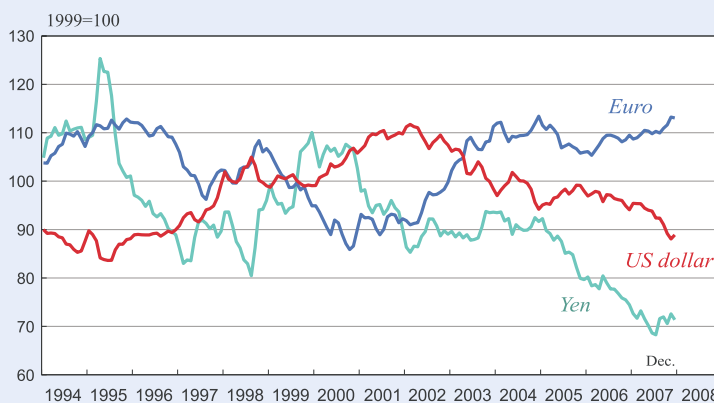


Figure 1.20



Real effective exchange rates^{a)}



a) Real effective exchange rate; deflator: relative consumer price indices.

Sources: OECD, Main Economic Indicators; Ifo Institute calculations.

it nevertheless increased by close to 8 percent, that is, about as much as the US Dow Jones did. The German share index, DAX, clearly outperformed both and grew by more than 22 percent during 2007. A clear deterioration of economic sentiment in particular with respect to the US economy around the turn of the year led to sharp falls in stock market indexes around the world in the beginning of this year.

The US Dow Jones dropped by 6.5 percent in January 2008. Without the 125 basis points cut of the Federal Reserve's key interest rate during this period, the drop would have been even stronger as suggested by the fall in the Euro STOXX 50 and the German DAX by respectively 8.2 and 15 percent during the same period.

Currency markets are in turmoil as well. The US dollar has dropped steeply and reached a new record low vis-à-vis the euro at 1.487 on 27 November 2007. Between the end of 2006 and the end of last year, the euro increased its value against the US dollar by close to 12 percent. Also in real effective terms, the appreciation of the euro, which started in early 2006, continued (see Figure 1.20). Whereas in 2006 the euro area went through a real effective appreciation of about 4 percent, last year it appreciated by as much as 5 percent. Roughly two thirds of this took place in the second half of last year.

4. The economic outlook for 2008

4.1 The global economy

Growth of the world economy will slow down somewhat this year. Firm profits and labour market developments will remain favourable overall. However, increased inflation, high oil prices and the ongoing adjustment process in the real estate market in the US will restrain the world economy especially in the short run.

4.2 United States

In recent years, the most important factor behind demand growth in the US has been private consumption. Traditionally, there has been a strong relationship between private consumption and real disposable incomes of households. In recent years, some extraordinary factors have overshadowed this relationship. Low interest rates, (too) relaxed credit allocation policies of banks, as well as associated increases in housing prices resulted in an extremely favourable consumption climate. As a consequence, consumption growth clearly exceeded income growth. For instance, a 2.2 percent increase in real private consumption per capita went hand in hand with a real income per capita increase of only 0.7 percent in 2005. Parallel to that, the savings rate, that is, personal saving as a percentage of disposable personal income, fell from 2.1 to 0.5 percent, where it has remained since.

Those factors that boosted consumption in the past now work in the reverse direction. The insolvency of subprime mortgages has reduced the willingness of banks to supply credits, mortgage rates are on a higher level than a few years back and real estate prices are falling.

As stressed in previous reports (see, for instance, Chapter 2 of the 2006 EEAG Report), there will be a need for households to increase their savings rates. This means that consumption will have to increase by less than real incomes (or that it could actually fall despite real income growth). Although the unemployment rate has steadily increased up to 5 percent in December last year, labour market conditions are in general still quite favourable and wage income is expected to develop almost as positively as last year. Furthermore, the government's initiative to allow many creditors to refinance themselves under relatively favourable conditions will tend to defuse the real estate crisis as well.⁸ Nevertheless, despite the

announced tax cut private consumption this and next year will not be able to contribute to demand growth as in recent years. This judgement is backed up by declining consumer confidence according to the surveys of the University of Michigan. The latter assessment of consumer confidence has reached its lowest value since the early 1990s. Consumption growth is therefore expected to fall more than one percentage point from 2.8 percent last year.

During the first half of this year, we will continue to see home owners turn insolvent. Although residential investment has been falling for two years now and is expected to continue to fall this year, the oversupply on the real estate markets will persist. As a consequence, house prices will drop further. The futures contracts for the S&P Case-Shiller Index for the ten biggest cities in the US imply that market participants expect house prices to keep falling until spring 2009. The National Association of Realtors is expecting house prices to fall on average by about 16 percent in 2008. A substantial part of this has already materialised; price declines are from now on expected to diminish from quarter to quarter and – according to this source – stop this summer.

Experience from past real estate problems in other countries shows that the consequences on especially domestic demand can sometimes be quite large. For instance, house prices dropped substantially in Japan, Spain, Sweden and the UK in 1992 and 1993. Whereas for Japan and Spain house prices dropped by more than 10 percent in real terms, they fell by approximately 25 percent in both Sweden and the UK. At the same time these economies underwent a recession. However, we have to consider that the world economy is currently in quite a different shape than it was in the early 1990s. Back then, German unification created an environment in Europe in which the fall of house prices appears to have been a side effect caused by higher interest rates in an already vulnerable environment. This time the reduction in real estate prices can basically only result in a recession in the US – as defined by at least two consecutive months of negative growth – if it creates negative wealth effects strong enough to depress private con-

⁸ The government has expanded the Federal Housing Administration's (FHA) ability to offer refinancing to homeowners who have good credit histories but cannot afford their current payments. By the end of 2008, the FHA expects this programme to help more than 300,000 families. Furthermore, the US government announced in December last year that representatives of Hope Now – a cooperative effort between the US government, counsellors, investors, and lenders to help homeowners – have developed a plan to freeze interest rates for some subprime borrowers who will not be able to make higher payments once the interest rate goes up due to the expiration of earlier discounts.

Box 1.3**An assessment of our forecast accuracy**

This year's EEAG Report is the seventh one. Given that we now have quite a number of years to look back on, we are in a position to review the accuracy of our own forecasts. We will not only compare the performance of our forecasts with that of a naive forecast that simply extrapolates last known values into the future, we will also make a comparison with forecasts as published by the European Commission, the OECD and the IMF. In line with, for instance Barrell and Metz (2006), we clearly find that the reliability of a forecast improves as the forecast horizon becomes shorter. Furthermore, forecast errors appear to be mostly of a random nature, indicating how difficult it is to improve forecast performance.

Given the European focus of the report and the availability of euro area data, we will assess the forecasts for the euro area. We consider forecasts of GDP growth, unemployment and inflation for the years 2002–2006. We compare the forecasts to the first release of official data in February (for unemployment and inflation) and April (for GDP growth) of the following year.¹ Of course, we must be aware that these first releases are subsequently revised a number of times.² As these revision processes seem endless, it is difficult to define the final release of a particular observation. Furthermore, given the possibility of so-called benchmark revisions,³ which will make comparison across different vintages almost impossible, we decide to limit our analysis to the first official release. The forecast error is defined as the forecasted rate minus the official figure as published by Eurostat.

Three other institutions that produce economic forecasts are the European Commission, the OECD and the IMF. All three produce forecasts twice a year. In general the forecasts of the European Commission are released in May and in November, those of the OECD in June and December and those of the IMF in May and October of each year. Hence, with respect to timing none of these nicely coincide with our publication date (the end of February). Figure 1.21 shows how the GDP growth forecasts for 2006 depend upon its release date. Similar graphs can also be shown for other forecasted years and variables; they basically tell the same story. The closer the forecast is to the time the first official release occurs, the higher its quality is. This, of course, does not come as a surprise, as more and better data will be available as time passes.

Table 1.4 reports the average forecast errors for GDP growth, unemployment and inflation for the euro area. Alongside the EEAG errors are errors resulting from a naive forecast and those of forecasts as published before and after our release by the three international organisations. A naive forecast simply takes the last official annual growth rate available for that particular variable and extrapolates it into the year to be forecasted.

The first column of the table indicates that although GDP growth forecasts have on average been larger than the actual first releases, these differences do not significantly deviate from zero, i.e. there is no systematic bias in any of the GDP growth forecasts. Neither can we find a bias in the unemployment forecasts. For inflation, the story is different. In particular the IMF, but also the European Commission and the EEAG, have systematically underestimated the actual inflation rate before or at the beginning of the year. Apparently, the rises in the oil price have not been captured by any of these forecasters.

Forecast uncertainty is usually judged by calculating the so-called Root Mean Squared Error (RMSE) of the forecast as compared to the official release.⁴ It is informative to look at the way the average forecast error, that is, the RMSE, differs among the forecasters and how they change as one approaches the first release date for the variable being forecasted.

Table 1.4 reports the results. Except for some inflation forecasts, all institutions have produced estimates that clearly outperform simple and naive forecasts. For instance, a naive forecast of GDP growth has been on average 0.91 percentage points off track; our own EEAG forecast has made an average error of 0.05 percentage points. With respect to the inflation forecasts, we find that up until spring of the year to be forecasted, the naive forecasts outperform those of the organisations. Of the four organisations considered, the inflation forecasts of the European Commission have clearly been the most accurate. Also with respect to growth forecasts, the autumn releases of the European Commission appear to be the ones to beat.

As to be expected, the quality of the EEAG forecasts lie basically somewhere in between those released in autumn before and spring after we publish our report. The only notable exceptions are our unemployment forecasts. Here our forecasts produced at the beginning of the year referring to the rest of that year outperform those released by the three other organisations during the spring of the same year, that is, as compared to estimates clearly released after ours.

Table 1.4 also highlights that indeed forecast uncertainty, as measured by RMSE, falls over time and approximates zero shortly before the official data are first released by Eurostat. Forecast uncertainties with respect to unemployment and inflation are roughly in the same vicinity, that is, about 0.5 percentage points when the first forecast is released and approaching zero over time. As compared to these, GDP growth, which has an average forecast error of 1.5 percentage points when first published, is clearly more difficult to predict.

¹ Note that our forecast is completed before these new releases are available.

² Data on inflation rates are the only exception to this rule, that is, inflation data are hardly revised over time.

³ A benchmark revision is a revision due to fundamental methodological changes in the way in which national accounts are computed.

⁴ It looks at the distance between the forecasted and the actual outcome for each forecasted observation. By squaring this distance it is assured to be always bigger or equal to zero. The closer it is to zero the better a particular forecast has been. Subsequently, averaging these squared errors gives a measure that summarises the past forecast performance into a single number. Finally to get back to the original units, that is, percentages, the square

root is taken. Hence, the root mean squared error equals $\sqrt{\frac{1}{N} \sum_{i=1}^N (\hat{y}_i - y_i)^2}$, where N stands for the number of forecasts and a hat indicates the forecast.

sumption sharply. Although growth of the latter is in the process of slowing down, there are no signs of it turning negative; wages – as main driver of consumption decisions – are still projected to grow by more than 3 percent, that is, almost as strongly as they did

last year. Furthermore, the recently proposed fiscal stimulus programme implies an increase in disposable income of about 100 billion US dollars this year – which is approximately $\frac{3}{4}$ percent of GDP. However, as the full effect of declining house prices may still be

Table 1.4

Forecasting performance for the euro area

Release	Source	Average forecasting errors/Root Mean Squared Errors					
		GDP Growth		Unemployment		Inflation	
		Average error	RMSE	Average error	RMSE	Average error	RMSE
Spring, t-1	naive forecast	0.34	1.71	0.21	0.68	0.10	0.22
	IMF	1.08	1.51	0.00	0.41	-0.54***	0.55
	EC	1.06	1.55	-0.08	0.46	-0.44**	0.49
	OECD	0.62	1.46	0.02	0.68	-0.25	0.64
Autumn, t-1	naive forecast	0.15	1.47	0.15	0.69	0.09	0.20
	IMF	0.64	1.18	0.12	0.40	-0.44***	0.45
	EC	0.32	0.80	0.20	0.40	-0.18*	0.24
	OECD	0.72	1.36	0.12	0.51	-0.12	0.40
Winter, t	naive forecast	0.16	1.44	0.16	0.70	0.09	0.20
	EEAG	0.24	0.61	0.10	0.26	-0.30***	0.32
Spring, t	naive forecast	0.27	1.46	0.19	0.42	0.01	0.15
	IMF	0.24	0.54	0.17*	0.26	-0.26***	0.28
	EC	0.33	0.51	0.17	0.30	-0.17*	0.20
	OECD	0.36	0.51	0.07	0.39	-0.06	0.33
Autumn, t	naive forecast	0.10	0.93	0.14	0.41	0.00	0.14
	IMF	0.04	0.26	0.12*	0.18	-0.02	0.10
	EC	0.01	0.16	0.02	0.11	0.06	0.06
	OECD	0.43	0.33	0.05	0.15	0.04	0.12
Winter, t+1	naive forecast	0.12	0.91	0.03	0.25	0.00	0.14
	EEAG	0.01	0.05	-0.05	0.05	-0.02	0.07

Notes: The years forecasted are 2002–2006. Forecasts are for the euro area. With respect to the null hypothesis that the average equals zero, ***, **, * denote significant values at respectively the 1, 5 and 10 percent levels. RMSE stands for the Root Mean Squared Error. The lowest RMSE value in each block is depicted in bold.

coming there is a considerable uncertainty with regard to the US economy.

In view of the still strong world economy and the continued weakness of the US dollar, exports will support US growth during the entire forecasting horizon. Starting from a currently very high level and given the slowdown of the European economy, export growth will, however, lose some of its momentum. The slowdown in private consumption will keep import growth

at a modest pace, allowing the current account to improve further.

Supported by corporate profits and external demand, equipment and software investment – after having reached a cyclical trough during winter 2006/2007 – will continue to grow. At a rate of close to 4 percent this year, it will outperform last year's growth rate of 1.4 percent. In particular, investment in nonresidential structures will be

affected by the fall in consumer confidence. Its high growth in the past years has been largely driven by the construction of hotels. Investment in structures is expected to increase by 5.5 percent this year (after 13.2 percent last year).

Summing up, the 2008 performance of the US economy is difficult to predict due the declining house prices and the subprime crisis, the full impact of which not yet clear. Taking all uncertainties into account, we forecast a significant decline in growth to 1.7 percent for 2008 after 2.2 per-

Figure 1.21

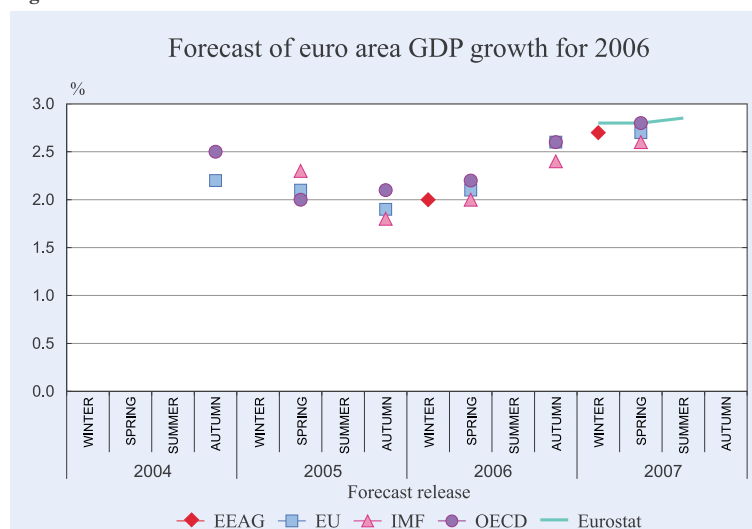
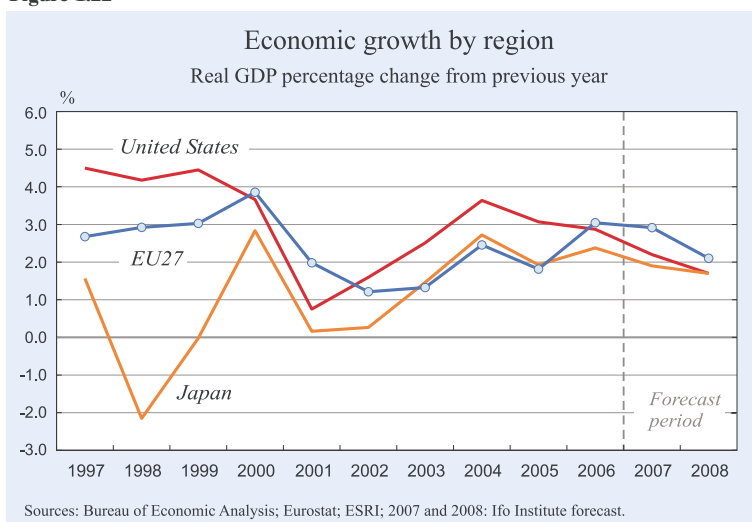


Figure 1.22



cent last year. This implies that for three consecutive years the US will grow less strongly than the EU27 (see Figure 1.22).

Despite the clear economic slowdown this winter, high energy and food prices will keep inflation high until summer. After that, CPI inflation will moderate again, reaching 2.8 in 2008. Core inflation will hover at around 2.3 percent during our forecast horizon, thereby remaining above the implicit target level of the Federal Reserve. Nevertheless, we assume that, given the strong policy reactions in January, the Federal Funds rate will not be reduced any further and remain at 3 percent this year.

In the current fiscal year 2008, the deficit-to-GDP ratio might increase to about 2½ percent. Beside a clear rise in the military budget (due to expenditures related to the military presence in Afghanistan and Iraq) and continued tax relief, this more expansionary fiscal policy stance is mainly explained by the recently announced economic stimulus programme. Lower corporate profit growth also implies that tax revenues will rise more slowly than last year.

The recent fears for a recession led the US government in January this year to announce a fiscal stimulus plan of about 150 billion US dollars, which is 1.1 percent of GDP. Although the details of the programme are still being worked out at the end of January, it appears that two thirds of this will be distributed as a tax refund for low- and medium-income households (as was done in 2001). The remaining third are tax breaks to firms designed to encourage capital spending. If implemented quickly enough such a programme will further reduce the

likelihood of recession and turn the anticipated slowdown into a milder one. It will raise real GDP by about one percentage point during the second semester this year, increasing the annual growth rate for 2008 by somewhat more than half a percentage point above what it otherwise would have been. As the present economic sentiment is a bit out of line with actual real economic developments, the most important effect of these measures might turn out to be the psychological boost they give to the economy.

4.3 Japan, China, India and other Asian countries

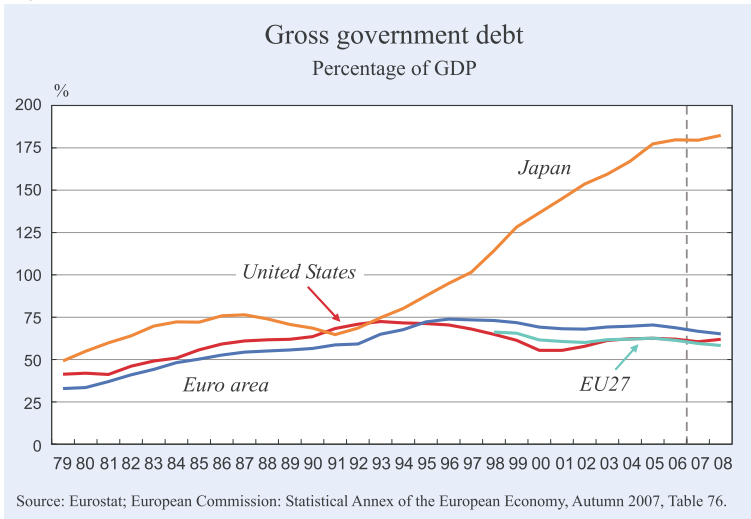
Short-term indicators like the Tankan Index and the Ifo World Economic Survey indicate that *Japan* will also face a moderate slowdown of its business cycle this winter. Whereas net exports will not contribute much to economic growth, stronger growth impulses will emerge from domestic demand and in particular nonresidential investment. Also the negative growth effects caused by changes in building laws will peter out. The Japanese economy is expected to grow by 1.7 percent in 2008.

Increased producer price inflation last year will drive up the consumer inflation rate. The latter will increase to 0.5 percent this year. This will also allow the Bank of Japan to normalise its monetary policy stance and increase short-term interest rates during the course of the years.

For the upcoming fiscal year, which starts in April, government expenditure limits are scheduled. This should bring back fiscal policy on a highly required consolidation course: a government debt-to-GDP ratio of about 180 percent is unsustainable in the long run (see Figure 1.23).

Although *Chinese* GDP will continue to develop strongly, lower export increases will weaken growth somewhat. Exports will be affected by the cancellation of specific tax relief, but also by the slowdown in US import demand. The current mild slowdown has already been signalled by the Ifo World Economic Survey: according to it, the current business situation is still being judged as good, but the expectations for

Figure 1.23



the coming months have deteriorated. The more restrictive monetary policy stance and the administrative measures taken last year will restrain growth: it will fall to 9.5 percent this year.

A further reduction in growth in *India* is not very probable. Although the central bank is likely to tighten monetary policy further, the domestic economy appears to be very resilient. Given the slowdown in the second half of last year, it is likely that growth this year will fall back to 8 percent.

In the other East Asian countries (*Indonesia, Malaysia, the Philippines, Singapore, South Korea, Taiwan and Thailand*), the domestic economy remains strong and will be able to buffer some of the slowdown in the world economy. Does this mean that Asia has detached itself from the US economic cycle? This decoupling thesis is substantiated by the series of economic reforms that were implemented in recent years as a consequence of the lessons drawn from the Asian Crisis of the late 1990s. Since then, most East Asian countries have reduced their budget deficits, have improved their net foreign asset positions and have massively boosted their foreign exchange reserves. Together with more flexible exchange rates, this means that the scope for countercyclical fiscal and monetary policy has become significantly greater. A larger proportion of exports is now sold within Asia, which has reduced the direct dependency on

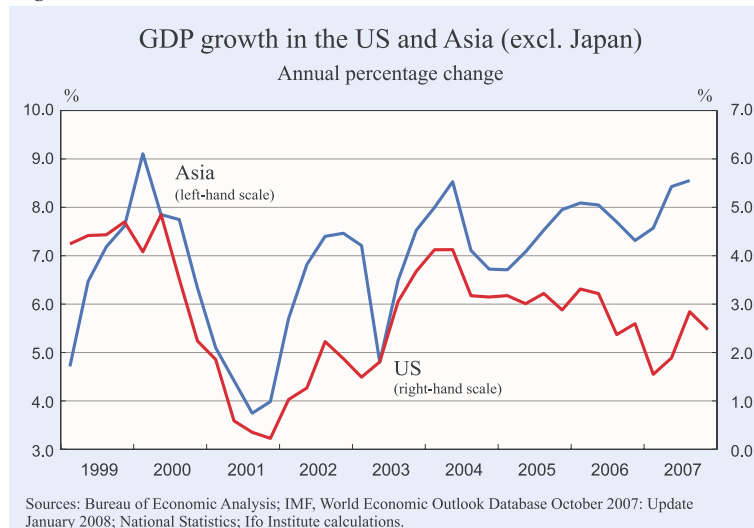
US demand. Because of this, actual growth in the recent past has not been affected as much by developments in the US as the years before would have suggested (see Figure 1.24).

Despite the current favourable economic prospects, there are at least two factors suggesting that East Asia is still quite dependent on the US business cycle. First, Asia's export diversification is a consequence of intra-Asian division of labour. Instead of exporting directly to the US (as was the case a decade ago), Asian

economies currently to a very large extent supply intermediate inputs and raw materials to China, where they are made into finished products and sold in the global market. However, as China itself has in recent years increased its share of exports to the US from around 21 percent in 2000 to approximately 40 percent now, Asian exports remain linked to the state of the US economy.

Second, increased financial integration also helps transmit worldwide economic cycles. Exchange rates, stock prices and interest movements are much more pronounced and abrupt than changes in trade flows. Within the financial sector, the US – which continues to account for around 40 percent of global stock market capitalisation – still plays a dominant role. To date, however, the tightening of credit markets in Asia brought about by the American mortgage crisis has generally remained moderate – among other things

Figure 1.24



because profits from export activities continue to ensure ample inflows of liquidity.

All in all, our judgement is that East Asian countries will be affected by the slowdown in the US economy, albeit only moderately. In, for instance, South Korea, the biggest economy of this group, the results of the Ifo World Economic Survey have actually brightened up. The assessments of both the current and future situation have been adjusted upwards. Growth in the entire region will be able to remain at a level of 5.5 percent this year.

4.4 *The rest of the world*

Aggregate growth in Latin America will be 4.5 percent this year. The reasons for these slightly lower growth rates are the more moderate developments in the world economy and capacity limits in those Latin American countries that export raw materials.

A normalisation of food price developments and appreciations of local currencies will give central banks in the region reason to continue their course of reducing interest rates. This will stimulate domestic demand. High raw material prices will allow exports to continue to expand. Although imports will accelerate due to the appreciation of local currencies, increased net exports will contribute positively to economic growth.

The close ties to the US will imply a somewhat stronger slowdown of the *Mexican* economy for the time being. Beside exports, also domestic demand will be held back due to reduced financial transfers from emigrants to the US.

High inflation will reduce private consumption somewhat in *Russia*. Also, business expectations have started to deteriorate slightly. However, given record oil prices and surging energy exports, the overall economy can be expected to continue growing at a rapid pace. We forecast GDP growth of 6.5 percent this year.

4.5 *Risk and uncertainties for the world economy*

As usual, this outlook is exposed to both up- and downside risks. It is assumed that the oil price will fluctuate around 90 US dollars per barrel over the whole forecasting horizon and that the exchange rate of the euro will move around 1.45 US dollars. If the

oil price were to fall substantially, the world economy could develop more strongly.⁹

At present, the main uncertainties are the depth of the current credit crisis and its impact on the real economy, especially on the US economy. Sharp falls in US real estate prices could have strong negative effects on both financial markets and the real economy. They could dampen private consumption severely by aggravating the negative wealth effects and raise interest rate risk premiums. Furthermore, nonresidential investment could also be severely affected as firm profits are endangered and credit constraints exacerbated. This would in turn have negative consequences for the labour market leading to a potentially vicious circle. To the extent that this would induce the Federal Reserve to loosen monetary policy even more, it might cause an even stronger depreciation of the dollar. This would reduce net exports of other countries and could in this way transmit recessionary impulses.

Views differ widely on when financial markets will start to function again normally. The forecast presented here is based on a return to properly functioning markets in roughly half a year's time, but still with higher risk premiums persisting thereafter.

A further risk is associated with the still high US current account deficit of 5.6 percent of GDP last year. It indicates that investment in the US is higher than domestic savings. The difference is financed by the increase in the net foreign debt position. An abrupt increase in the US savings rate to correct this would imply a severe reduction in domestic demand. Furthermore, a more pessimistic risk assessment of foreign investors and an associated reduction in their willingness to invest in the US would lead to an increase in long-term interest rates there. This would affect aggregate demand in the US negatively. Experiences from other countries show that a deficit of more than 5 percent of GDP has not been sustainable in the past. The depreciation of the US dollar has already led to an increase in export dynamics. A further loss in confidence in the US economy could accelerate this development. Such a demand reduction in the US would be transmitted to other countries as well. They could also be severely affected by an associated large depreciation of the dollar, which would reduce net exports from other countries to the US (see Box 1.1 in Chapter 1 of the 2007 EEAG

⁹ According to recent estimates of the Ifo Institute, a 12 percent reduction in the oil price implies an increase in the euro area growth rate by approximately 0.35 percentage points (see Carstensen et al. 2007).

Report and Chapter 2 of this year's and the 2006 EEAG Report).

4.6 The European economy

The cyclical situation

After the outbreak of the credit crisis, producer confidence started to crumble and the euro appreciated even further against the US dollar. These headwinds and the consequent reduction of US imports will continue to dampen growth during the first half of this year, bringing economic growth back to its potential. After 2.9 and 2.6 percent last year, growth is likely to fall to 2.1 percent and 1.8 percent this year in the EU27 and the euro area, respectively (see Figure 1.25). Due to the persistent global unrest in financial markets, the uncertainties surrounding this forecast are large though.

From a demand-side perspective, the main reasons for the slowdown are twofold. First, investment will expand less dynamically as its business cycle peak has already been passed. Second, the high value of the euro and the weakening of global trade will slow down European exports and lead to a small negative growth contribution from net exports.

Employment will continue to increase (see Figure 1.26), but there will be higher inflation and relatively low wage increases. For this reason consump-

tion increases will be only moderate. Nevertheless, the highest contribution to growth will come from consumption (see Figure 1.27).

Employment and inflation

As growth will not fall below potential and there are likely to be delayed reactions to the strong growth in the past two years, employment will increase further. Unemployment in the EU27 will fall to 6.8 percent this year (see Figure 1.28).

The output gap will remain positive in 2008. The restrictive monetary policy stance will slowly allow the inflation rate to move back to a level close to 2 percent next year. This holds for both the EU27 and the euro area. Moderate nominal wage increases, of the same order of magnitude as last year, that is, approximately 2³/₄ percent for the euro area, also work in favour of this scenario.

The ECB is advised not to react to the presently high inflation rates. First of all, they are largely explained by special effects that will only have a temporary influence on inflation and hence will not affect medium-term inflation expectations. For instance, the increase in the oil price has been fortified by a baseline effect resulting from its distinct decrease during winter last year. Furthermore, the German VAT increase early last year is presently affecting the euro CPI inflation rate by

Figure 1.26

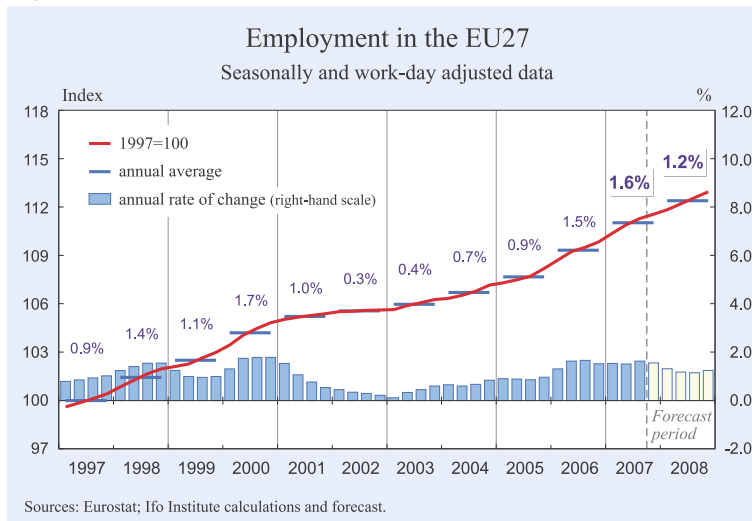


Figure 1.25

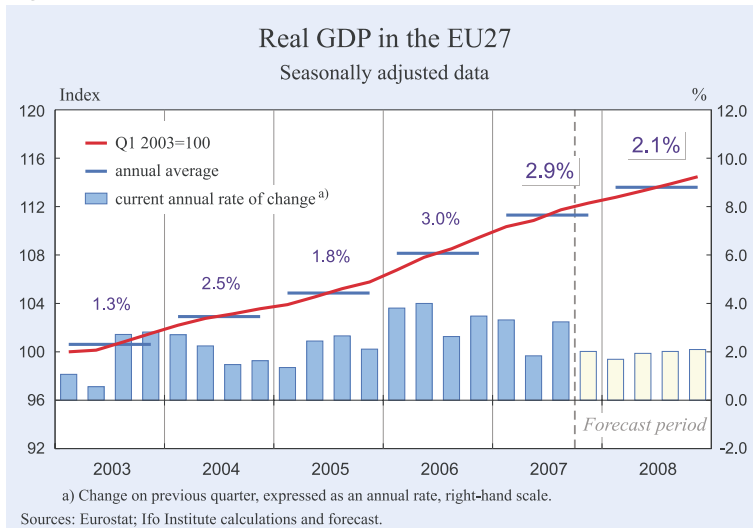
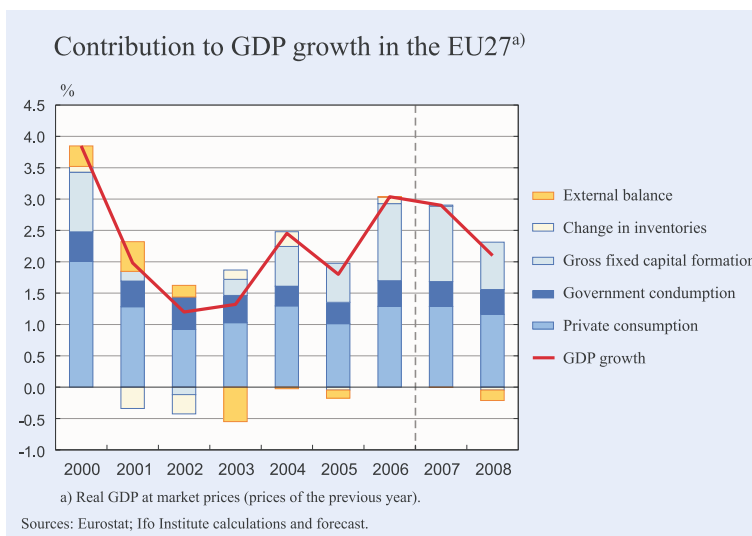
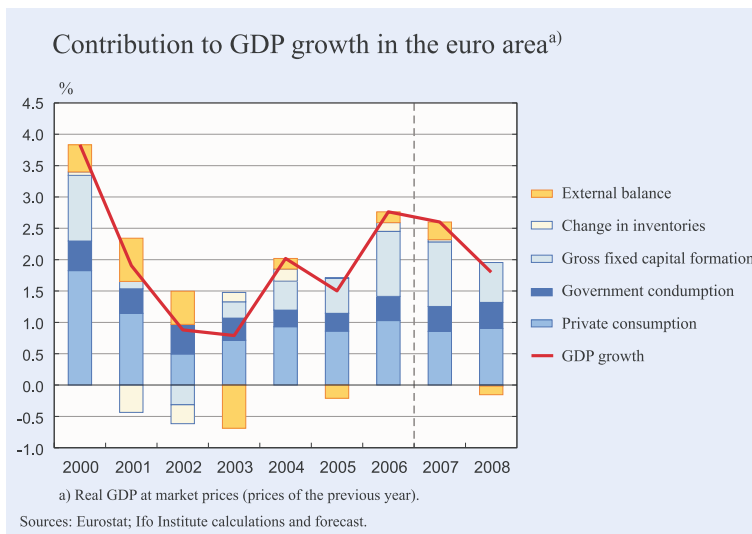


Figure 1.27



Differences in output growth within Europe

The slowdown of the *German* economy will continue at least until the second half of the year. Some investment projects were hastened last year to still benefit from old depreciation allowances.¹⁰ This will reduce this year's equipment investments. An increase in consumption will be decisive in bringing output growth back to potential again. After the inflation hike has been put behind us, improved labour market conditions and wage developments will raise real consumption growth to about 1.3 percent; a growth level not seen since 2001. Overall, this will allow GDP growth to reach 1.6 percent this year. Correcting for the fact that there will be more working days this year than usual, growth will be 1.3 percent. As last year, the inflation rate will on average equal 2.3 percent. However, at the end of the year it will fall below 2 percent again. There is no sign that the competitiveness of the *German* economy is starting to deteriorate soon. Inflation rates and wage growth will remain below the euro area average.

approximately 0.3 percentage points. Nevertheless, the oil price increases will have an impact on the inflation rate in the months to come. An inflation rate of 2.4 percent in the euro area (and 2.5 percent in the EU27) is clearly beyond the target rate as communicated by the ECB. Assuming that no further oil price hikes occur, the strong euro will dampen inflation and the target rate of 2 percent will be reached again in 2009.

¹⁰ Since the beginning of this year, it is no longer possible in *Germany* to depreciate in accordance with the declining-balance method. As a reaction to this, firms pulled relevant investments into the year 2007. For instance, the registration of commercial vehicles turned out to be high last year.

Figure 1.28

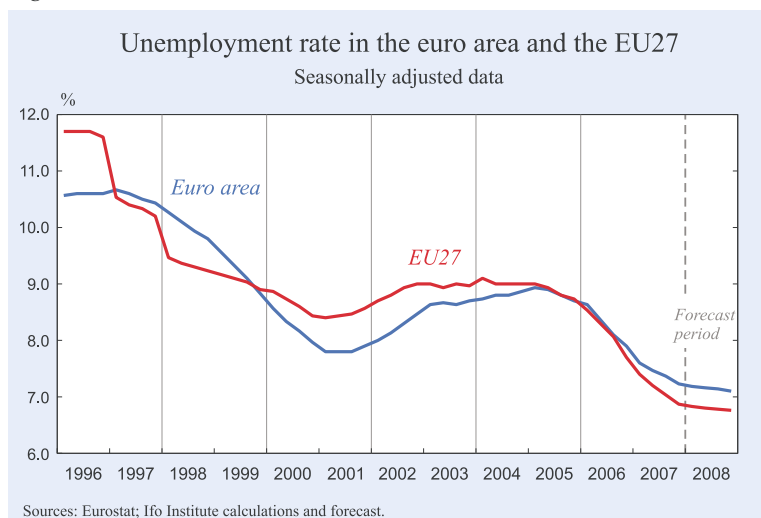
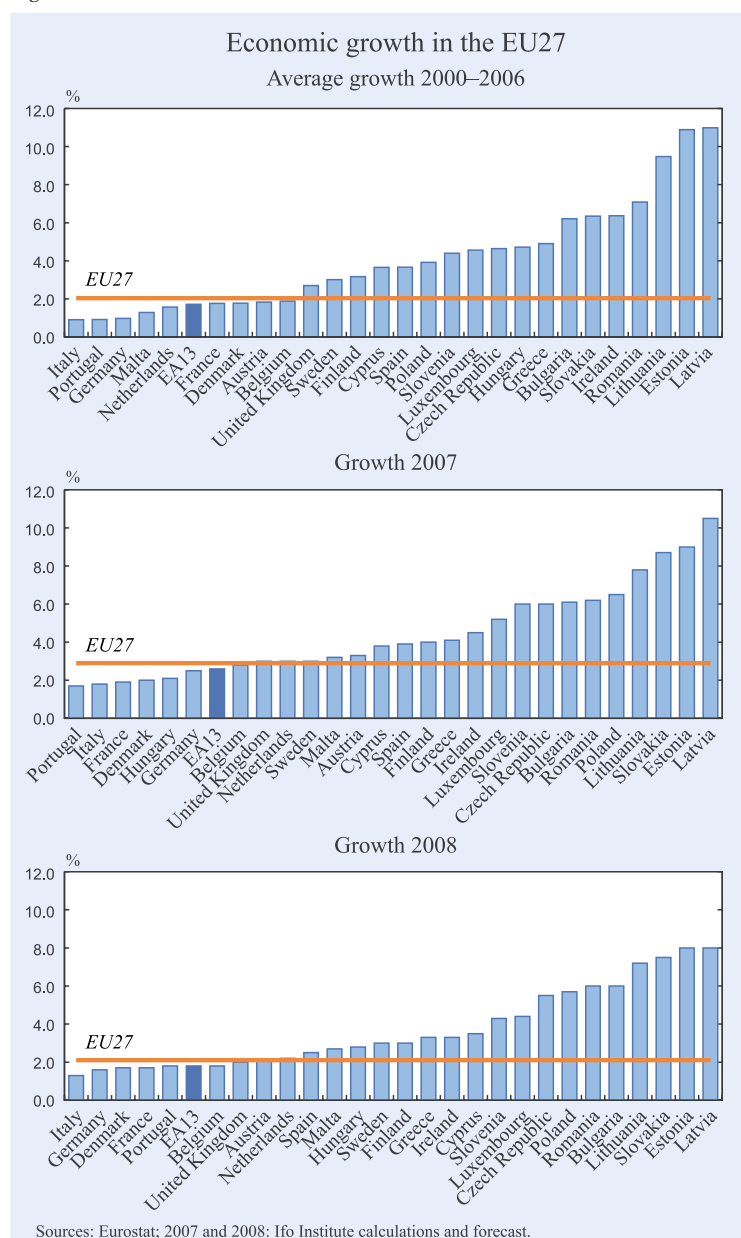


Figure 1.29



The economic expansion in the UK will initially weaken (see Figure 1.29). GDP growth will be only 2 percent this year. Private consumption will expand more slowly than in recent years. One reason is that the savings rate – which has fallen to relatively low levels – will increase again. Real estate prices started to decline in autumn last year. On top of that, relatively high interest rates and increased uncertainty will lower investment growth as well. The development of net exports will contribute negatively to GDP growth. Substantial risks concern the development of the UK real estate market.

Private consumption in France will slowly revive and again become the main factor behind demand growth.

Furthermore, exports will pick up somewhat. All other spending components are likely to show more moderate developments in the near future. In sum this will allow GDP to grow at rates of 1.7 percent this year. Inflation is forecasted at 2.1 percent; the surge in inflation will not hit France to the same extent as in many other countries.

The macroeconomic prospects for Italy remain clouded. First, investment will continue to develop moderately. Especially, residential investment growth will fall after relatively strong increases in the last few years. Second, exports of, in particular, the textile industry, which still make up a relatively large share of the manufacturing sector, will continue to suffer from strong international competition. The international competitiveness of the Italian economy continues to deteriorate. Its export performance will therefore keep on worsening as it has since 1996. GDP will increase by 1.3 percent this year. Although employment will grow by less than 1 percent, an even weaker increase in the labour force will still allow the unemployment rate to continue to fall and reach 5.8 percent this year.

Growth in Spain will weaken relative to recent years. Housing markets slump, and residential investment will grow only weakly. This will also affect employment in the building sector negatively, which in turn will dampen growth in disposable income. Private consumption will not develop as strongly as it did in the past. In total, GDP will grow by 2.5 percent this year.

At the start of this year, the two Mediterranean islands, Malta and Cyprus, joined the euro area. With a joint population of 1.5 million and a share of less than 0.2 percent in the euro area's GDP, the importance of these two economies for the economic development of the euro area is very small. These coun-

tries, though, will clearly benefit from entering. Both are open economies that rely heavily on trade with the rest of Europe. Adopting the euro means less currency risk for exporters, more competitive economies for consumers and a stable environment for foreign direct investment. Nevertheless, there are adjustment costs. Both economies are growing faster than the rest of the euro area which might induce rising inflation. Lower interest rates could further raise house and asset prices to dangerous levels. Furthermore, given the upcoming elections in both countries, it is not clear whether the fiscal consolidation path during the run-up to the euro will be maintained.

Although it will level off somewhat, economic growth in the new EU member states will remain strong. GDP of the region will increase by 5.7 percent this year. Domestic demand especially, will continue to expand buoyantly. Inflation will level off somewhat and the labour market – as measured by the unemployment rate – will continue to improve.

The Baltic states, *Estonia*, *Latvia* and *Lithuania*, will remain the front-runners in this group. However, these are also the countries with the largest current account deficits; in Latvia the current account deficit was 21 percent of GDP in 2006. It raises serious concerns about possible exchange rate overvaluation. As compared to other emerging European economies these deficits are to a large extent financed through bank-to-bank and other borrowing rather than foreign direct investments. The currency board arrangements in Estonia and Lithuania and the pegged exchange rate regime in Latvia explain why a significant portion of these credits are denominated in euros. The high inflation in the Baltic states can to a large extent be explained by the combination of the loss of monetary independence associated with a fixed-exchange rate regime (ruling out a stricter monetary policy than that of the ECB) and the Balassa-Samuelson effect.¹¹ Although slated to adopt the euro in 2010, the continuing high inflation rates are bound to become a clear obstacle for entering the euro area (see Chapter 3 of the 2007 EEAG Report on this).

After Slovenia in 2007, Cyprus and Malta this year, *Slovakia* is the next in line to join the euro area. It is aiming to adopt the euro on 1 January 2009. Its readiness will be assessed in May this year. With a fiscal

budget deficit estimated to be 2.7 percent of GDP this year and a debt-to-GDP ratio of slightly more than 30 percent, Slovakia complies with the fiscal criteria; only its high inflation rate of 2.6 percent this year might prove to be somewhat problematic. Nevertheless, we expect a positive decision by the EU Finance Ministers in early summer.

5. Macroeconomic policy

5.1 Fiscal policy

The economic upswing continued to reduce fiscal deficit and debt positions throughout Europe. Except for France and Hungary, all countries that still had debt-to-GDP ratios above 60 percent in 2006 improved their debt positions last year. For the euro area as a whole, the total deficit fell by around 0.8 percent of GDP. As the year before, approximately half of this was of a structural nature. According to the latest estimates, the structural deficit for the euro area has now fallen five years in a row. Nevertheless, there are still fiscal deficits in most of the countries in the euro area.

This year, fiscal policy will turn expansionary again in Europe. The consolidation of government expenditures will not really make progress. Consequently, the scheduled tax relief in, for instance, France and Germany will only partly be financed by reduced expenditures. Improved labour market conditions and increased tax receipts will have to cover the remaining parts in order to avoid a substantial increase in the deficit-to-GDP ratio at the European level. Hence, the cyclical improvements of the recent past are likely to be used as an excuse for complacency and we do not expect to see any further improvements of structural deficits this year.

Although the ageing of our societies is steadily progressing and will definitely take its toll on public finances in Europe (see Chapter 1 of the 2007 EEAG Report and Chapter 4 of the 2005 EEAG Report), politicians have not been able to use the past few years of extraordinary growth to cut government spending to prepare for these future budgetary pressures. To the extent that deficits have been reduced, it has mostly been done by increasing revenues. Excellent examples are the VAT increase in Germany and the increase in income tax progressivity in Italy last year. For years, we (and other economists) have been advocating the lowering of in particular government transfers. This would be an important route towards cutting back

¹¹ The Balassa-Samuelson effect implies that high productivity growth in the tradables sector causes high wage increases that spill over to the non-tradables sector and thereby result in substantial price rises there.

marginal tax rates on labour, which would in turn promote labour supply. Increasing participation rates is a prerequisite for financing the current welfare-state provisions in Europe. At present, a labour force participation rate of 72 percent in the euro area is still well below those of countries like Australia, Canada, Japan, the UK or the US where this ratio stands well above 75 percent.¹²

This year, government revenues in *Germany* will increase by about 2.5 percent, which is less than in the last two years. In particular, the reform in corporate taxation, which became effective at the beginning of this year, is responsible for this reduction in the growth of tax revenues. Government spending will rise by approximately 2 percent, which is faster than in 2007. The defence budget and the budget for education and research will benefit from this. Although the actual government budget will approximately stay balanced, the structural counterpart will for the first time in years deteriorate somewhat. Hence, fiscal policy in Germany will be slightly expansive.

The deficit ratio in the *UK* is not likely to be reduced in 2008. No efforts worth mentioning are scheduled and a level of 3 percent of GDP will be reached this year.

Despite the high debt-to-GDP ratio of 64 percent, it is not very likely that *France* will opt for fiscal consolidation in the near future. The scheduled public expenditures for this year are close to identical to those of last year, underlining the French position to not move to a medium-term target of close to balance in the near future.

In *Italy*, after clear improvements last year, no further structural changes in government finance are scheduled. Fiscal policy in *Spain* will remain expansionary this year. Beside additional tax reductions, an increase in government spending is scheduled. This, together with a cyclical downturn, is forecasted to reduce the surplus to about 1.2 percent of GDP this year.

The public finance situation in the new EU member states will continue to develop quite heterogeneously. A more restrictive fiscal stance, however, does not appear likely in most of these countries either.

5.2 Monetary policy

Monetary conditions

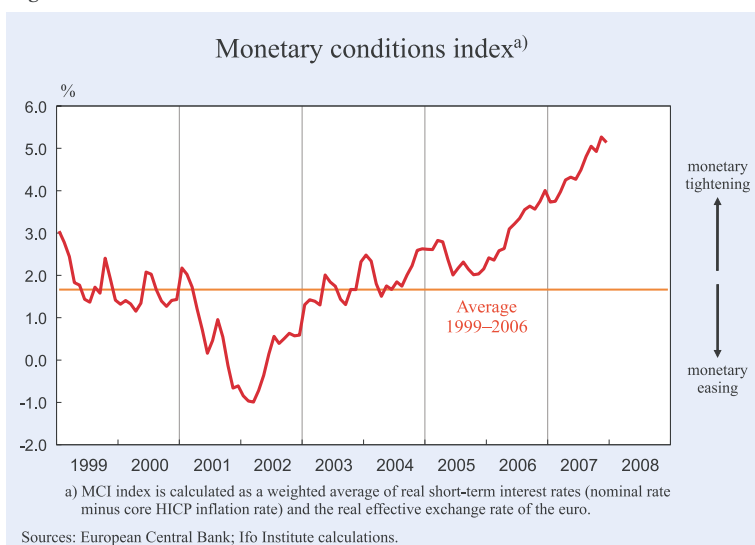
Annual money growth rose to unprecedented rates above 12 percent in recent months. Experience teaches that also in other phases of high volatility in financial markets, the demand for short-time time deposits surges. Though these deposits are part of M3, they are not contained in the more narrowly defined monetary aggregate, M1. Although the ECB notes itself that these extremely high growth rates have been influenced by a number of temporary factors, all related to the financial market turmoil, such as the flattening of the yield curve¹³ and specific transactions associated with the restructuring of certain banking groups, we already have seen M3 growth rates exceeding the 10 percent level since January last year. At the same time as M3 growth started to increase, M1 growth fell from levels above 10 percent to a level of around 6.5 percent. This mainly shows the tightening of monetary policy in Europe. Nevertheless, the monetary and the accompanying credit aggregates still show a vigorous expansion, which is not quite in line with a credit-crunch scenario. Actually, we have to go back to the early 1980s to find more than two consecutive months with M3 growth rates above 10 percent. To the extent that inflation is ultimately determined by money growth and the ECB is taking its monetary pillar seriously – according to which the ECB reference value for money growth is set to be only 4.5 percent – this upsurge has to be watched closely. So far, the ECB has on several occasions stressed that it will wait before taking action and continue to monitor financial markets to see how and when the turbulence calms down.

In addition to the steady increase of the main refinancing rate in eight steps since December 2005, the appreciation of the euro during the same period has tightened monetary conditions in the euro area considerably (see Figure 1.30). Over the year, the euro appreciated by more than 10 percent against the US dollar. In real effective terms the euro appreciated by more than 5 percent against its 44 most important trading partners during the same period.

¹³ The yield curve is a graphical representation of the relationship between interest rates or yields on securities of the same credit quality but with different maturities. Usually, the yield curve is positive, that is, upward sloping, because investors demand compensation for the added risk of holding longer-term securities. A flattening of the yield curve implies that this risk compensation is reduced.

¹² With respect to employment rates, that is, the ratio of total employment to the population of working age, a similar picture emerges.

Figure 1.30



On top of this, interbank money market rates are well above the main refinancing rate, again tightening monetary conditions further. The money market interest rate as measured by the three-month EURIBOR deposit rate was on average 84 basis points above the main refinancing rate in December last year. Between 2006 and the start of the financial turbulence, this spread averaged around 30 basis points. Hence, from a monetary policy point of view, it was as if the central bank had already made one additional interest rate hike of 50 basis points. However, a rise in interbank rates today does not and cannot provide information regarding the future path of interest rates. Hence, this spread does not affect market expectations as an actual interest rate increase would. Only the central bank can meaningfully affect those expectations, which is what matters for future inflation.

Despite this tight monetary policy stance, inflation did surge in recent months. During the last two months of last year, the annual inflation rate as measured by the Harmonized Index of Consumer Prices (HICP) increased to 3.1 percent. Also during the first months of this year, inflation will be well above the ECB target of 2 percent. In the own forecast presented by the ECB early December, the inflation rates lies between 2 and 3 percent, that is, well above its target. This forecast is conditional on the interest rate path that the markets foresee as most likely. Nevertheless, it is also recognised that this inflation surge is temporary and at least partly driven by the drop in oil prices one year ago and the subsequent increase at the end of last year. Furthermore, any further interest rate increases would display

their peak effect on inflation after approximately six quarters. However, there is a risk that the present inflation surge is translated into higher wage demands, which would threaten still moderate medium-term inflation expectations. That would force the ECB to increase interest rates and thereby reduce aggregate demand.

A Taylor Rule for the euro area

What monetary policy decisions can we expect from the ECB this year? Following up on last year's report, we have estimated a monetary policy rule, the Taylor rule, for the euro area. The general idea behind estimating a Taylor rule is to identify to what extent a central bank, in our case the ECB, has changed its main policy rate as a reaction to deviations of inflation and output from their respective targets. The Taylor rule interest rate is generally seen as a benchmark interest rate for actual monetary policy. Furthermore, by extrapolating its past behaviour into the future, we are able to gain an idea of the direction future interest rate changes tend to go.

When using so-called Taylor rules to analyse the appropriate stance of monetary policy, it is important to take a forward-looking perspective. It is generally recognised that it will take several quarters for a policy change today to have its full effect on the real economy and actual inflation rates. Hence, instead of focusing too much on today's inflation rate, the central bank is likely to put substantial weight on expected future developments in their decision-making process. Indeed, when exploring different ECB Taylor rules for the euro area, Sauer and Sturm (2003, 2007) conclude that only forward-looking specifications (by either taking expectations derived from surveys or assuming rational expectations) give estimated Taylor rules in line with both theoretical models and communicated behaviour of the ECB itself. Similar conclusions are drawn by Castelnuovo (2007).

Hence, we explore forward-looking Taylor rules based on the idea that in order to ensure medium-term price stability, the central bank interest rate seeks to keep expected output growth and inflation at their target

Box 1.4

The KOF Monetary Policy Communicator for the euro area (KOF MPC)¹

The KOF MPC is based on a coding of each introductory statement provided by Media Tenor, a media research institute, which has a long track record in handling press releases and guarantees a high degree of objectivity and reproducibility. Media analysts read the text of the introductory statement of the monthly press conference sentence by sentence. Each sentence contains one or more statements, which are then coded. The coding does not only capture different topics but also various other dimensions such as the tense of a statement, ambiguity and the like. The data that underlies the indicator are obtained from all sections of the introductory statement. However, only statements that refer to risks for future price stability are selected for construction of the KOF MPC. The coding is aggregated into the index by taking balances of the statements that reveal that the ECB sees upside risks to price stability and statements that reveal that the ECB sees downside risks to price stability, relative to all statements about price stability (including neutral). By design, the values of the KOF MPC are restricted to be in the range of minus one to plus one. The larger a positive (negative) value of the KOF MPC, the stronger the ECB communicated that there are upside (downside) risks for price stability. Since price stability is the ECB's primary objective, movements in the KOF MPC should indicate the path of future interest rates.

As the KOF MPC indicates changes in the main refinancing rate, summing up these changes over time gives a better picture of how the KOF MPC correlates with the level of the interest rate. The cumulative indicator is the sum of all previous values of the KOF MPC and the current value. Figure 1.32 plots the development of both the actual KOF MPC and its cumulative version. Comparing Figures 1.32 and 1.31 highlights that the time course of the cumulative indicator closely matches that of the main refinancing rate. This visual impression is confirmed by a contemporaneous correlation coefficient between the two series of about 90 percent. This development shows that the connection between the ECB's deeds and its communication is rather close.

¹ More information on the KOF MPC can be found on <http://www.kof.ethz.ch/communicator>.

rates. In our formulation, real economic developments are proxied by growth rates.¹⁴

We use consensus forecasts for both expected GDP growth and expected inflation as published monthly by Consensus Economics Inc. and estimate a Taylor rule specification for the euro area. The implied target Taylor rate – a benchmark to which we can compare the actual main refinancing rate – is depicted in Figure 1.31. In general, the implied target rate appears to have a lead over the actual interest rate development. At the end of the sample, the target Taylor rate suggests future cuts in the main refinancing rate. This result is easily explained. Actual inflation expectations have not moved much over the past few months. Growth expectations on the other hand have clearly deteriorated. This latter

effect outweighs the former and – given past behaviour of the ECB – suggests a decline in future interest rates. Taking the rhetoric of the ECB into account, this result might come as a surprise. Since the summer of 2007 the ECB appears to stress increased risk for price stability.

Central bank communication has become more and more important over the years. For instance, the introductory statements of the ECB president at the monthly press conference receive high media coverage. Basically every word Mr. Trichet says is analysed by journalists, financial analysts and economists around the world. Among others, it is supposed to contain information about future interest rate moves. The KOF Swiss Economic Institute has recently released a new indicator intended to quantify the risks

¹⁴ Under the assumption of constant potential output growth, this implies that instead of the level of the output gap, we include the expected change in the output gap. For instance, Walsh (2003) and Geberding et al. (2004) have argued that such a “speed limit policy”, or “difference rule”, performs quite well in the presence of imperfect information about the output gap. Given that output gaps are notoriously difficult to measure and tend to be revised substantially over time, this appears quite plausible. Growth rates, on the other hand, are much less prone to data revisions. Secondly, the use of growth cycles has the advantage that they in general have a clear lead over classical cycles. Furthermore, most theoretical models abstract from long-run growth. When allowing for trend growth, it is possible to specify Taylor rules in terms of output growth rates. Finally, expectations and forecasts are normally formulated in terms of growth rates and are therefore readily available. Any deviations of the expected inflation and growth rates from their targets will induce the central bank to adjust the interest rate.

Figure 1.31

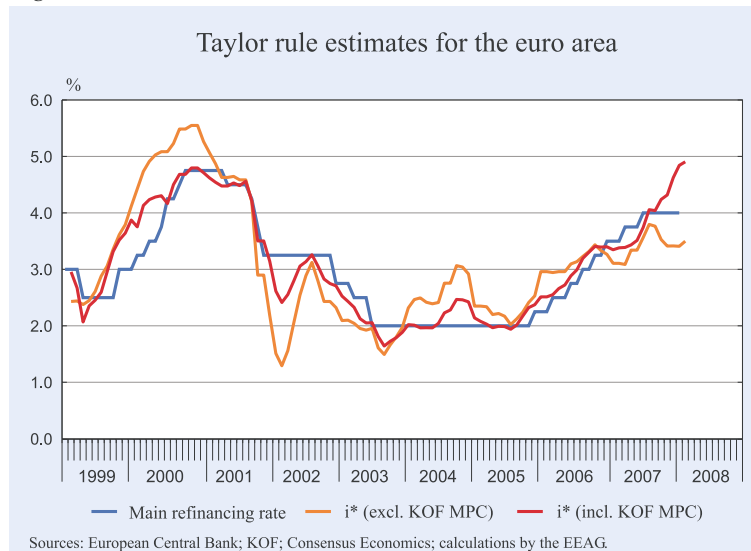
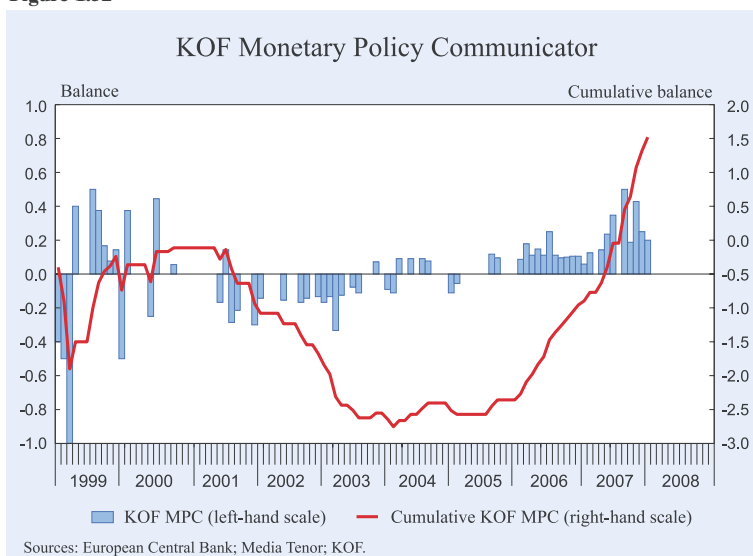


Figure 1.32



the ECB Governing Council ascribes to future price stability. Hence, this new KOF Monetary Policy Communicator for the euro area (KOF MPC) translates the ECB president's statements concerning risks to price stability as made during the monthly press conference into an index. By aggregating forward-looking statements concerning price stability, the KOF MPC contains information about the future path of ECB monetary policy. In general, it anticipates changes in the main refinancing rate by two to three months.

To capture the communication of the ECB, we integrate the cumulative version of the KOF MPC into our Taylor rule. As indicated by Figure 1.31, the cumulative KOF MPC clearly improves the fit. The target Taylor rate implied by a specification including the KOF MPC follows actual interest rate developments far closer without losing its lead. Our previous conclusion that an interest rate cut is becoming more likely, is, however, completely reversed. As of late, the ECB is so strongly stressing risks with respect to price stability, that the implied target Taylor rate that takes this into account points toward future hikes.

The most plausible reason why, despite the clear risk to price stability as communicated by the ECB, we have so far not seen interest rate increases is the turbulence on financial markets triggered by the sub-prime crisis in the United States. Stock markets have been very negatively affected by this and, probably more important, interbank trust plummeted leading to liquidity problems within the banking sector. This initiated fears of a so-called credit crunch, that is, a situation in which banks are less willing to supply credit. More restrictive credit allocation would imply

a worsening of the monetary conditions without a change in the main policy rates of the ECB. Although this has hardly materialised, we do see a larger spread between the main refinancing rate and the three-month inter-bank rate in recent times as compared to the situation before the start of the crisis. This in itself means a tightening of monetary conditions in the euro area.

Another potential reason for holding off policy rate increases might be the exchange rate development vis-à-vis the US dollar.

This argument is less convincing though, as the channels by which the strong appreciation of the euro is affecting monetary policy decisions are already captured by the expected growth and inflation rates.

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Appendix 1:
Forecasting tables

Table A.1

GDP growth, inflation and unemployment in various regions

	Share of total GDP in %	GDP growth		CPI inflation		Unemployment rate ^{d)}	
		in %					
		2007	2008	2007	2008	2007	2008
EU27	33.4	2.9	2.1	2.3	2.5	7.1	6.8
Euro area	24.4	2.6	1.8	2.1	2.4	7.4	7.2
Switzerland	0.9	2.9	2.0	0.7	1.6	2.8	2.3
Norway	0.8	2.9	2.7	2.3	2.4	2.6	2.6
Western and Central Europe	35.1	2.9	2.1	2.3	2.5	7.0	6.7
US	30.2	2.2	1.7	2.8	2.8	4.6	4.9
Japan	10.0	1.9	1.7	0.0	0.5	3.9	4.0
Canada	2.9	2.6	2.3	2.3	2.3	6.0	6.0
Industrialised countries total	78.2	2.5	1.9	2.2	2.3	5.7	5.7
Newly industrialised countries							
Russia	2.3	7.5	6.5	.	.	.	.
China and Hong Kong	6.5	11.0	9.5	.	.	.	.
India	2.0	9.0	8.0	.	.	.	.
East Asia ^{a)}	5.1	5.5	5.5	.	.	.	.
Latin America ^{b)}	5.9	5.0	4.5	.	.	.	.
Newly industrialised countries total	21.8	7.5	6.7	.	.	.	.
Total ^{c)}	100.0	3.6	3.0	.	.	.	.
World trade, volume		5.4	6.0	.	.	.	.

^{a)} Weighted average of Indonesia, Korea, Malaysia, Philippines, Singapore, Taiwan and Thailand. Weighted with the 2006 GDP levels in US dollars. – ^{b)} Weighted average of Argentina, Brasil, Chile, Columbia, Mexico, Peru, Venezuela. Weighted with the 2006 GDP levels in US dollars. – ^{c)} Sum of the listed groups of countries. Weighted with the 2006 GDP levels in US dollars. – ^{d)} Standardised unemployment rate.

Sources: EU; OECD; IMF; National Statistical Offices; 2007 and 2008: forecasts by the EEAG.

Table A.2

GDP growth, inflation and unemployment in European countries

	Share of total GDP in %	GDP growth		Inflation ^{a)}		Unemployment rate ^{b)}	
		in %					
		2007	2008	2007	2008	2007	2008
Germany	20.0	2.5	1.6	2.3	2.3	8.4	7.8
France	15.4	1.9	1.7	1.6	2.1	8.3	8.3
Italy	12.7	1.8	1.3	2.0	2.3	6.0	5.8
Spain	8.4	3.9	2.5	2.8	3.2	8.3	8.6
Netherlands	4.6	3.0	2.2	1.6	2.3	3.2	2.9
Belgium	2.7	2.8	1.8	1.8	2.2	7.5	7.3
Austria	2.2	3.3	2.1	2.2	2.2	4.4	4.3
Greece	2.1	4.1	3.3	3.0	3.3	8.4	8.0
Finland	1.5	4.0	3.0	1.6	2.4	6.9	6.3
Ireland	1.4	4.5	3.3	2.9	2.4	4.5	4.5
Portugal	1.3	1.7	1.8	2.4	2.4	8.2	8.0
Slovenia	0.3	6.0	4.3	3.8	3.8	4.7	4.6
Luxembourg	0.3	5.2	4.4	2.7	2.9	4.9	4.6
Cyprus	0.1	3.8	3.5	2.2	2.3	3.9	3.6
Malta	0.0	3.2	2.7	0.7	2.5	6.3	6.2
Euro area ^{c)}	73.1	2.6	1.8	2.1	2.4	7.4	7.2
United Kingdom	16.4	3.0	2.0	2.4	2.4	5.4	5.4
Sweden	2.6	3.0	3.0	1.7	2.5	6.1	5.8
Denmark	1.9	2.0	1.7	1.7	2.3	3.7	3.3
EU18 ^{c)}	94.1	2.7	1.9	2.1	2.4	7.0	6.8
Poland	2.3	6.5	5.7	2.6	2.8	9.6	8.8
Czech Republic	1.0	6.0	5.5	3.0	3.5	5.3	5.0
Hungary	0.8	2.1	2.8	7.9	5.0	7.2	7.0
Romania	0.8	6.2	6.0	4.9	5.6	6.7	6.5
Slovakia	0.4	8.7	7.5	1.9	2.6	11.3	9.7
Lithuania	0.2	7.8	7.2	5.8	6.4	4.3	4.0
Bulgaria	0.2	6.1	6.0	7.6	6.8	6.9	6.3
Latvia	0.1	10.5	8.0	10.1	9.2	5.9	5.4
Estonia	0.1	9.0	8.0	6.7	6.1	4.9	4.7
EU9	5.9	6.2	5.7	4.2	4.1	7.8	7.2
EU27 ^{c)}	100.0	2.9	2.1	2.3	2.5	7.1	6.8

^{a)} Harmonised consumer price index (HCPI). – ^{b)} Standardised unemployment rate. – ^{c)} Sum of the listed countries.

Sources: EUROSTAT; OECD; IMF; 2007 and 2008: forecasts by the EEAG.

Table A.3

Key forecast figures for the euro area

	2006	2007	2008
	Percentage change over previous year		
Real gross domestic product	2.8	2.6	1.8
Private consumption	1.8	1.5	1.6
Government consumption	1.9	2.0	2.1
Gross fixed capital formation	4.9	4.8	2.9
Net exports ^{a)}	0.2	0.3	-0.1
Consumer prices ^{b)}	2.2	2.1	2.4
	Percentage of nominal gross domestic product		
Government fiscal balance ^{c)}	-1.5	-0.8	-0.9
	Percentage of labour force		
Unemployment rate ^{d)}	8.2	7.4	7.2

^{a)} Contribution to change in real GDP (percentage of real GDP in previous year). – ^{b)} Harmonised consumer price index (HCPI). – ^{c)} 2007 and 2008: forecasts of the European Commission. – ^{d)} Standardised unemployment rate.

Source: Eurostat; 2007 and 2008: forecasts by the EEAG.

Appendix 2: Ifo World Economic Survey (WES)

The World Economic Survey (WES) assesses worldwide economic trends by polling transnational as well as national organisations worldwide on current economic developments in their respective countries. This allows for a rapid, up-to-date assessment of the economic situation prevailing around the world. In October 2007, 1 020 economic experts in 90 countries were polled. WES is conducted in cooperation with the International Chamber of Commerce (ICC) in Paris. The survey questionnaire focuses on qualitative information: assessments of a country's general economic situation and expectations regarding important economic indicators. It has proved to be a useful tool, since it reveals economic changes earlier than conventional in business statistics.

The individual replies are combined for each country without weighting. The grading procedure consists in giving a grade of 9 to positive replies (+), a grade of 5 to indifferent replies (=) and a grade of 1 to negative (-) replies. Overall grades within the range of 5 to 9 indicate that positive answers prevail or that a majority expects trends to increase, whereas grades within the range of 1 to 5 reveal predominantly negative replies or expectations of decreasing trends. The survey results are published as aggregated data. The aggregation procedure is based on country classifications. Within each country group or region, the country results are weighted according to the share of the specific country's exports and imports in total world trade.

1. World: Economic climate deteriorates

In October 2007, the World Economic Climate deteriorated after a period of economic expansion in 2006 and 2007. The climate indicator still stands at 99.3 (after 113.6 in July 2007: 1995=100), above its long-term average (1991–2006: 95.3). This indicates that the global economic expansion is softening. The index of the present economic situation slipped somewhat, after having reached a six-year high in the third quarter 2007. The economic outlook for the coming six months deteriorated, as experts have become more cautious. The economic climate index fell in all three main economic regions: North America, Western Europe and Asia. The largest decline, as expected, was in the United States. In Western Europe, particularly the near-term forecasts have been revised downward.

The smallest decline has been recorded for Asia as a whole. The Asian decline has been somewhat more pronounced in Japan and Hong Kong than in other Asian countries.

The effect of the on-going US mortgage crisis spilled over to Europe and Asia. Already by the end of 2006, the economic climate index had approached a cooling-down phase. In the first half of 2007, however, business sentiments picked up again. But, in the summer of 2007, the US mortgage crisis caused a sharp decline in global business sentiments, aggravated by the increased oil price, which was heading towards the shock value of \$100 per barrel. In autumn 2007, the economic climate index started to cool down. However, an increasing number of economists have argued that there is an economic "decoupling" of European and Asian economies from the US. The United States is still the world's biggest importer, but in 2006 Japan, China, India and Russia together imported the same volume of goods. Although the economic expectations for the next six months have visibly slipped all over the world, assessments of the current economic situation have been only slightly downgraded, raising hope for a moderate cooling in 2008. A recession in the US, however, remains a sizeable downside risk for the world economy.

2. Western Europe: Economic cooling

The overall economic climate indicator for Western Europe deteriorated strongly in October. Both components of the economic climate index – assessments of the present economic situation and economic expectations for the next six months – were downgraded. According to the panel's forecast, the economic expansion will slow in the first half of 2008.

The economic climate index declined in all euro area countries. Assessments of both the present economic situation and economic expectations have been revised downward. The present economic situation has been assessed as less favourable, particularly in France, where it is judged below the satisfactory level. Economists surveyed trimmed their economic expectations, which, however, still point to a stable economy in the next six months. The surveyed economists also assess as less favourable the present economic performance in Germany, the Netherlands and Belgium, but still considerably above the satisfactory level. Here, the forecasts for the next six months have also been downgraded and point to an economic

slowing in 2008. The fall in the US dollar has had a negative impact on European exports, but, on the other hand, it alleviated the negative effect of rising oil prices for the euro area, as oil, and many other commodities, are priced in US dollars. This, in combination with strong demand from emerging markets raises hopes that economic expansion, particularly in Germany, will continue in 2008, although with lower growth rates.

Outside the euro area the economic climate cooled somewhat. In Denmark and Sweden, the economic climate deteriorated but is still described as very favourable. WES experts gave the present economic performance very high marks on the WES scale. But the economic expectations for the next six months have been downgraded; particularly with capital expenditures expected to weaken. Norway was one of the few European countries where the economic climate index has remained stable at a very favourable level over the last quarter. This situation is expected to continue, although private consumption is foreseen to weaken strongly. In Switzerland a very favourable economic climate prevails. In the current quarter the surveyed economists gave the present economic situation the highest marks on the WES scale. However, the forecasts for the first half of 2008 have been revised downward here as well. In the United Kingdom, the present economic performance is now assessed as good. But the economic prospects for the next six months have been strongly downgraded, indicating that UK economy may follow the US into a slowdown. Capital expenditures and private consumption are expected to weaken strongly in the course of the next six months.

3. North America: Economic climate index strongly deteriorates

The economic climate indicator in North America strongly deteriorated in October. The economic expectations for the next six months weakened in particular. The assessments of the present economic situation are also revised downward. This pattern applies to both the United States and Canada.

In the United States, the economic climate has clearly deteriorated since the previous survey, although the present economic situation is still assessed as favourable by the majority of surveyed economists. But the economic expectations have been strongly downgraded and point to a further slowdown in the

next six months. An increasing number of WES experts see a sizeable risk of recession in the US. They forecast capital expenditures and private consumption to weaken in the coming months, triggered by weakness in the US housing market and lack of confidence in the US financial sector. They expect further depreciation of the US dollar, with the Fed determined to avoid a recession. However, given the weak US dollar, the WES experts in the United States foresee a very significant strengthening of the export sector in the US.

In Canada the present economic state continues to be good, according to the survey responses, but the economic outlook for the coming six months has been very strongly downgraded. Capital investment, private consumption and exports are expected to weaken strongly in the next six months.

4. Central and Eastern Europe: Economic climate remains favourable

The economic climate cooled slightly in Central and Eastern Europe. The present economic situation and economic expectations have been somewhat downgraded, on average. However, both indicators remain at a very favourable level, pointing to a stable economic development over the next six months.

Lithuania is the only country within the European Union where both components of the economic climate index have been upgraded. In Central and Eastern Europe, only Poland and Slovakia have been given higher marks for the present economic performance, although the economic forecasts for the next six months have been strongly downgraded. In Poland, economic experts forecast an economic slowing in the beginning of 2008. Capital expenditures in particular are expected to weaken. An economic cooling is also expected by the surveyed economists in the Baltic countries of Estonia and Latvia, where the present economic situation is, however, still assessed at a very favourable level. But in the next six months capital expenditures and private consumption are expected to deteriorate. The same applies to Slovenia, where the economic climate index has deteriorated relative to the previous quarter's survey. In Hungary, the majority of surveyed economists have described the present economic situation as "bad". However, they remain optimistic regarding an economic turnaround in the near-term future. Capital expenditures and the export sector are particularly foreseen to strengthen

very strongly in the next six months. Optimism prevails also among the surveyed economists in the Czech Republic, where the present economic performance was assessed as very good in October. Further strengthening of capital expenditures and the export sector is foreseen for the next six months.

Outside the European Union, the economic climate remains favourable in Bulgaria and Croatia. It is expected to remain so in the coming six months in both countries, with a further revival in capital expenditures, private consumption and exports. In Romania the economic climate is described as favourable by the majority of surveyed economists. Although assessments of the present economic situation and economic expectations have been downgraded somewhat, the surveyed economists expect a stable economic development in the next six months. In Serbia the present economic performance has strongly deteriorated, according to WES experts and is now assessed as poor. However, the economic prospects for the next six months have been strongly upgraded and have become optimistic. In contrast, the Albanian outlook remains clouded and current conditions are still regarded as weak.

5. CIS: Economic climate cools

The overall economic climate index for the CIS countries covered by WES (Russia, Ukraine, Kazakhstan, Kyrgyzstan and Uzbekistan) cooled somewhat in October compared to the July survey.

The assessments of the present economic situation and economic expectations have been downgraded somewhat in Russia. However, the record oil prices and surging energy exports are fuelling economic growth. Thus the overall economy is still described as very good. The economic forecasts for the next six months point to a stable economic environment in the next six months. The experts named a lack of international competitiveness as the main challenge facing the Russian economy at present. In Kazakhstan the economic climate index has deteriorated somewhat since the previous quarter's survey. While the present economic performance is assessed as satisfactory, the economic prospects for the next six months have been downgraded. The economic climate index in Ukraine has remained stable. The majority of surveyed economists sees the present economic situation as satisfactory. The expectations relating to the economic development in the next six months are generally positive.

In contrast, the surveyed economists regard the economic climate in Kyrgyzstan as below the satisfactory level. The economic outlook points to a rather sluggish economy for the coming six months.

6. Asia: Mild cooling of business sentiments

The economic climate in Asia, the second largest region after Western Europe, deteriorated only slightly in the fourth quarter of 2007, following global business sentiments. Assessments of both the present economic performance and economic expectations for the next six months have been downgraded somewhat, on average, for the region. However, several "old" and emerging markets in the region remain generally buoyant, offsetting the US demand drop for products and services in the global economy. According to surveyed economists the outlook for Asia remains positive.

The deterioration of the economic climate index for Asia resulted mainly from the cooling of business sentiments in the three main economies, Japan, China and India, where both assessments of the present economic situation and economic expectations for the next six months have been downgraded. The surveyed economists expect a slowing of economic activity particularly in Japan. However, in all three economies the capital expenditures are expected to stabilise at a current level and for Japan and India the surveyed economists foresee that exports will strengthen further in the next six months. The economic outlook became clouded also in Sri Lanka and Pakistan, where political turmoil dampens economic recovery. In Thailand the surveyed economists assessed the present economic situation as critical. However, they remain optimistic regarding an economic turnaround in the first half of 2008. The same applies to Bangladesh, where the experts regard the present economic state as somewhat below the satisfactory level.

In the other countries of the region, economic performance did not deteriorate as a result of the financial markets crisis. Singapore and Vietnam are ranked with the highest marks on the WES scale and the WES is very positive in the Philippines, South Korea and Malaysia. The surveyed economists forecast further strengthening in all these countries. Particularly in Vietnam, South Korea and the Philippines, exports, private consumption and capital expenditures are foreseen to pick up by the beginning of 2008. In Hong Kong, Indonesia and Taiwan the surveyed experts

judged the present economic situation as satisfactory. Economic outlook for the next six months is pointing to an economic stabilisation. In Hong Kong and Indonesia the capital expenditures are expected to strengthen somewhat. According to the WES panel, the export sector remains upbeat.

7. Oceania: Economy remains buoyant

According to the fourth quarter survey results, the economic climate improved somewhat in Australia and New Zealand. The Australian present economic situation is assessed with the highest marks on the WES scale. The economic outlook for the coming six months has also been upgraded and is pointing to further strengthening of the economy in the beginning of 2008. In New Zealand, the present economic performance has deteriorated, according to the WES experts, but is still assessed as satisfactory. The economic prospects for the next six months have been strongly upgraded and are now pointing to a period of economic stabilisation. Capital expenditures and the export sector in New Zealand are forecasted to strengthen in the next six months by the surveyed economists.

8. Latin America: Stable economic climate

The economic climate index for Latin America remained stable in October. The present economic situation is again assessed above the satisfactory level, on average, for all countries surveyed in the region. The outlook for the coming six months point to continued economic stabilisation.

A highly favourable economic climate prevails in Brazil, Chile and Peru. The economic outlook for the coming months has been revised slightly downward by the majority of surveyed experts but is still pointing to an upbeat economy in the rest of 2007 and the beginning of 2008. Particularly in Peru and Chile, the surveyed economists foresee a strong pick-up of exports in the next six months. In Peru, a strengthening of capital expenditures and consumption, is expected. In Brazil, WES experts have reported strong consumer demand and capital investment. In Mexico the present economic performance continues to be assessed as satisfactory. However, considering the strong economic relationships to the US markets, the surveyed economists expect rather sluggish economic activity in the next months, particularly in the export

sector. In Argentina the economic climate index has deteriorated somewhat over the previous quarter's survey, although the present economic performance is still assessed as favourable. The Argentinean economy has grown by more than 8 percent each year over the last five years. However, the economic prospects for the next six months have become clearly pessimistic. WES experts forecast inflation to be nearly 16 percent for this year. Energy shortages are also damping business sentiments. Capital expenditures are expected to weaken strongly and private consumption to fall, according to WES experts. In Venezuela, Paraguay, Ecuador and Colombia, the present economic state has been described as good in the present survey round. However, the economic forecasts for the next six months have been downgraded and are cautious in all of these four countries. Particularly pessimistic are the panel's forecasts for Ecuador and Venezuela, where lack of confidence in the government's economic policy appears to be growing. Also in Bolivia, lack of confidence in the government's economic policy is ranked as the economic problem number one by the surveyed economists. In Costa Rica, Uruguay and Guatemala a favourable economic climate prevails, according to the WES experts. In Costa Rica the present economic situation has been assigned the highest marks on the WES scale. The economic forecasts in all three countries point to stable economic growth in the near-term future.

9. Near East: Diverging economic trends

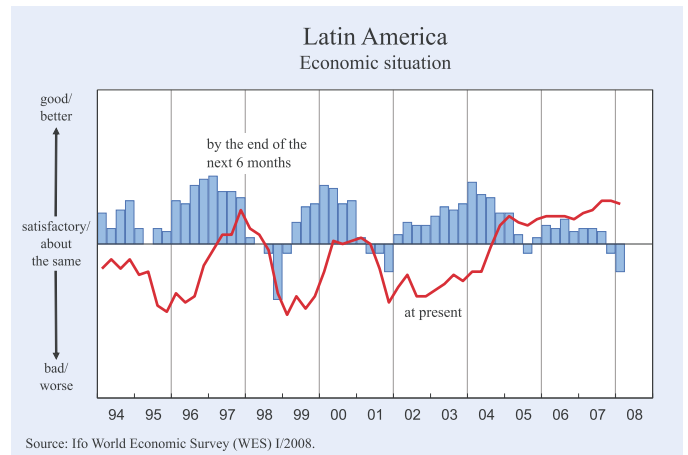
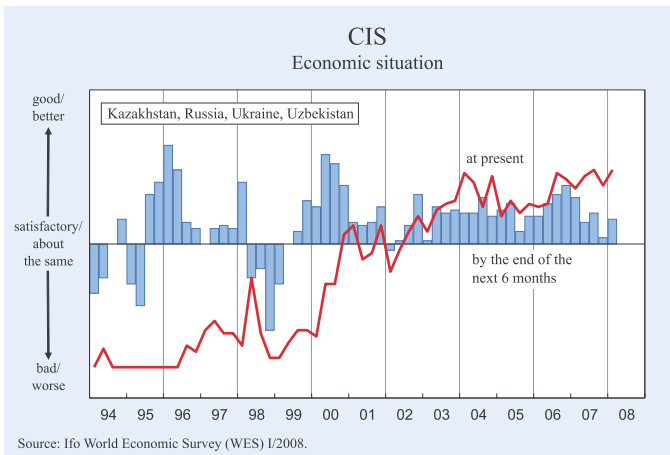
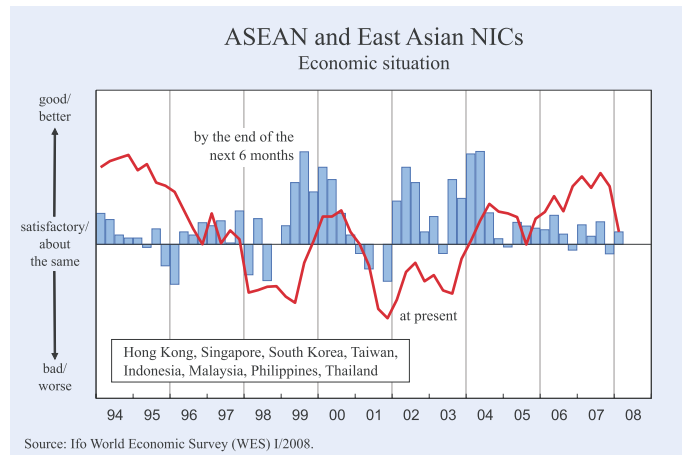
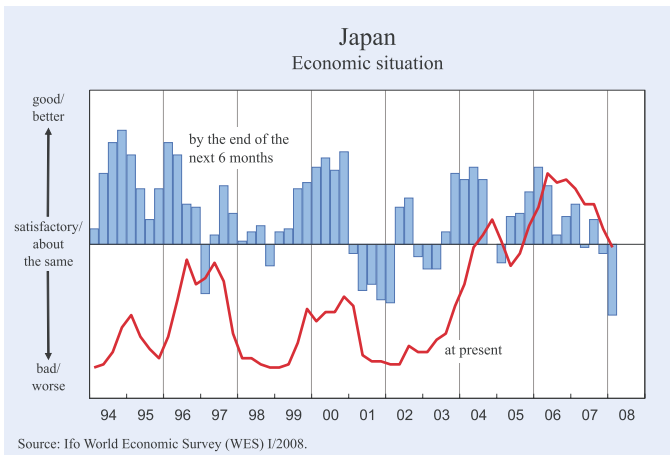
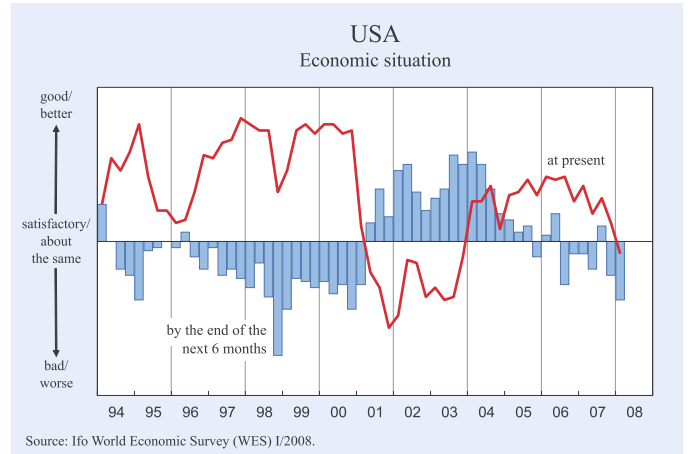
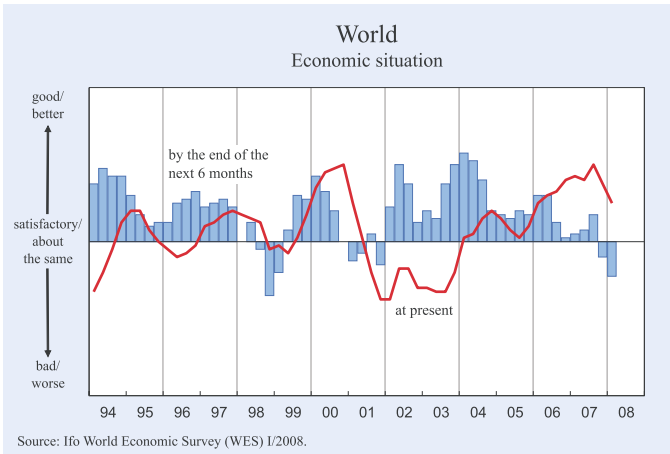
The economic trends in the countries surveyed in the Near East region diverge. While the present economic situation remains highly favourable in Bahrain, Jordan, Kuwait, Saudi Arabia and the United Arab Emirates, the economic climate strongly deteriorated in Iran and Turkey, where an armed conflict is threatening economic activity. Also in Israel, the economic prospects for the next six months have been strongly downgraded. In particular capital expenditure and private consumption are expected to weaken. The country's present economic situation, however, has been assessed as very good.

10. Africa: Business confidence damped in South Africa

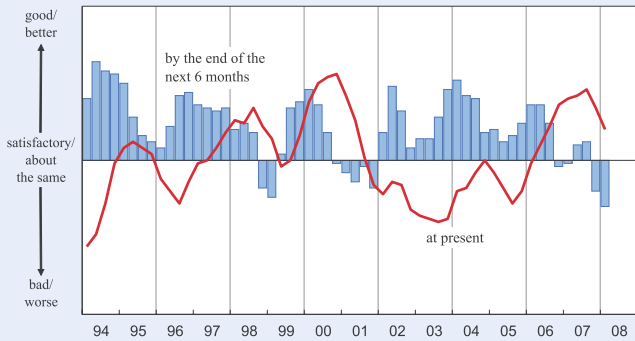
In South Africa, the economic climate deteriorated again somewhat compared to the previous quarter. The assessments of the current economic situation

have been revised downward. South Africa's economy is showing signs of a slowdown due to labour strikes, global financial turmoil and a worsening inflation outlook, followed by rate hikes, according to the Bureau for Economic Research (BER). However, the country's economic performance is still seen as good by the majority of surveyed economists. But the economic outlook for the next six months is cautious. Capital expenditures and exports are expected to strengthen somewhat, but private consumption is foreseen to weaken markedly. In Algeria, Kenya, Morocco and Tunisia, the present economy is performing at a satisfactory level, according to economists surveyed in these countries. The outlook for the next six months points to stable economic development. In contrast in Mauritius and Nigeria, the economy has been described as weak. In Zimbabwe, disastrous circumstances have prevailed for more than a decade now. The bleak economic outlook aggravates the overall situation for the country's plagued population.

Ifo World Economic Survey (WES)

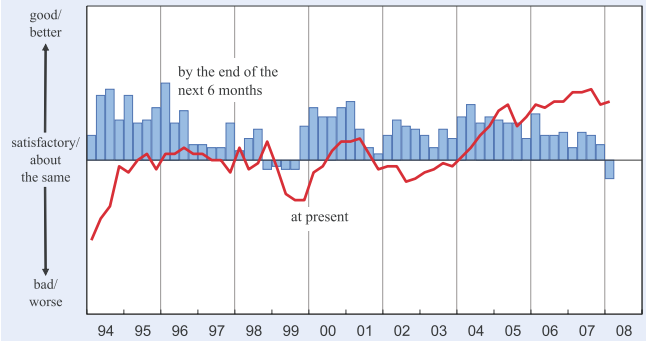


European Union (15)
Economic situation



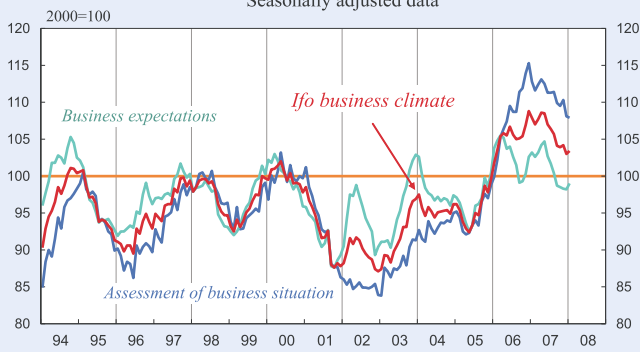
Source: Ifo World Economic Survey (WES) 1/2008.

Eastern Europe
Economic situation



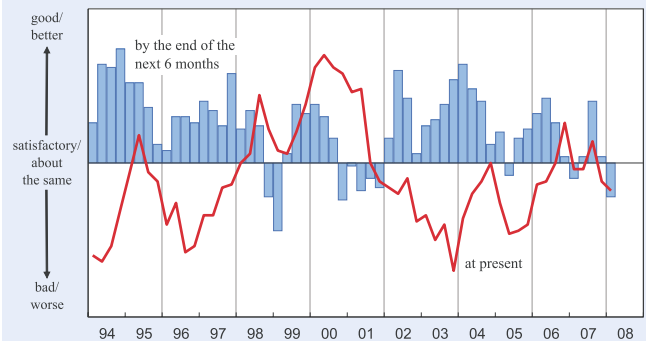
Source: Ifo World Economic Survey (WES) 1/2008.

Germany: Ifo business climate¹⁾
Seasonally adjusted data



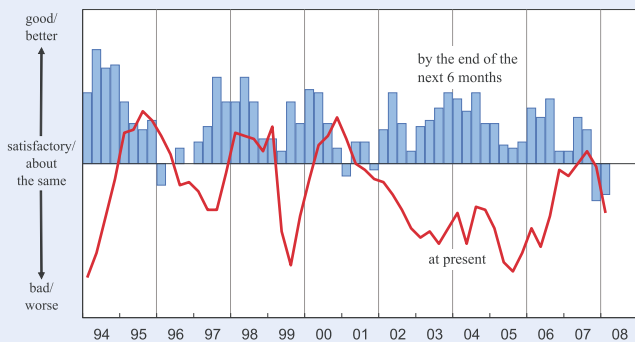
1) Manufacturing industry, construction, wholesale and retail trade.
Source: Ifo Business Survey, January 2008.

France
Economic situation



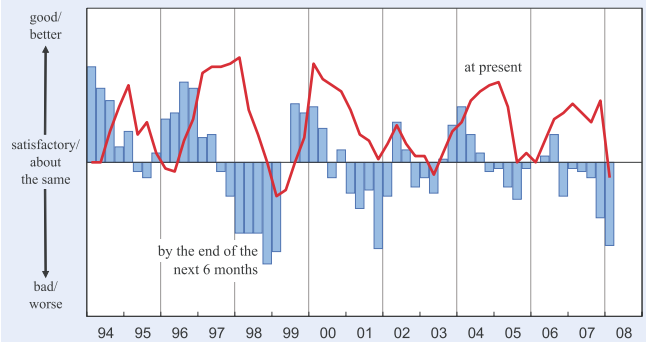
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Italy
Economic situation

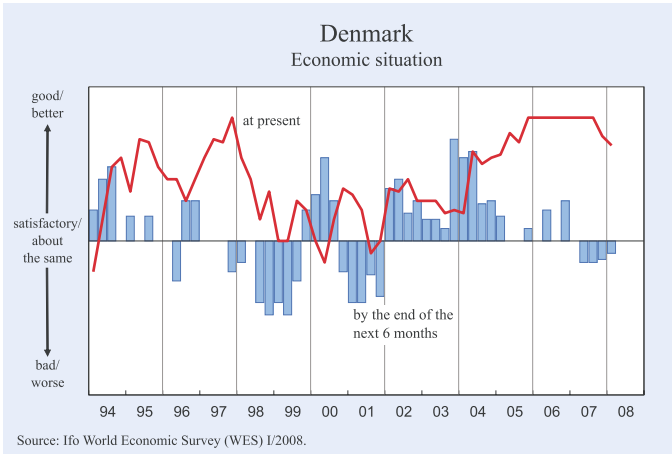
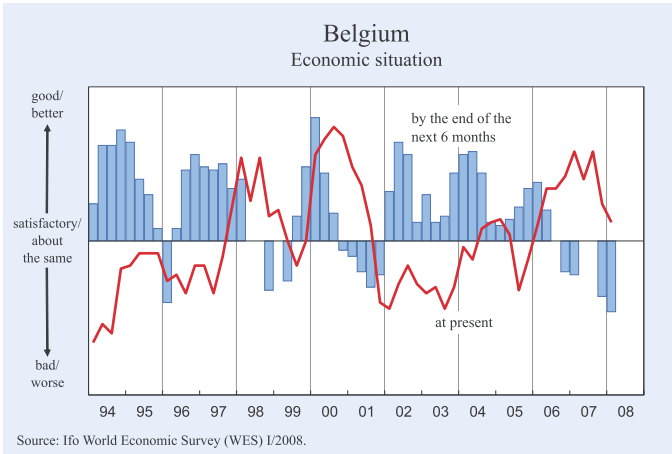
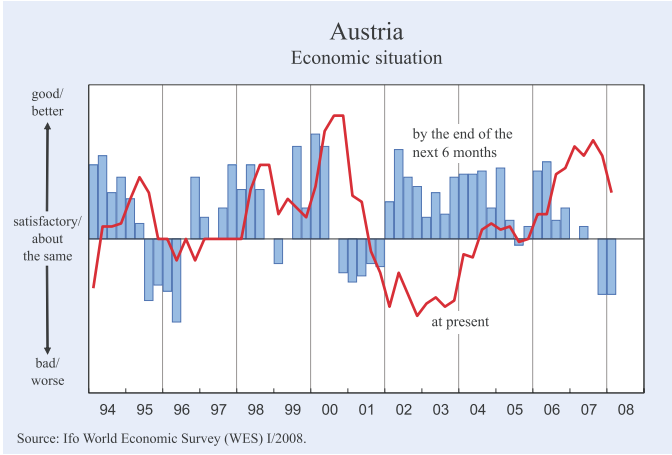
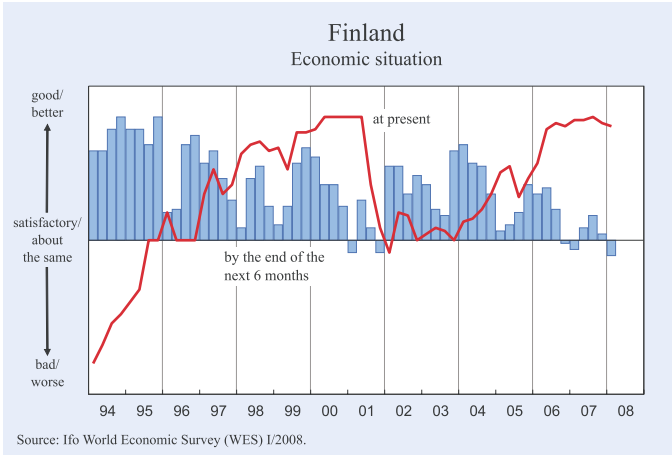
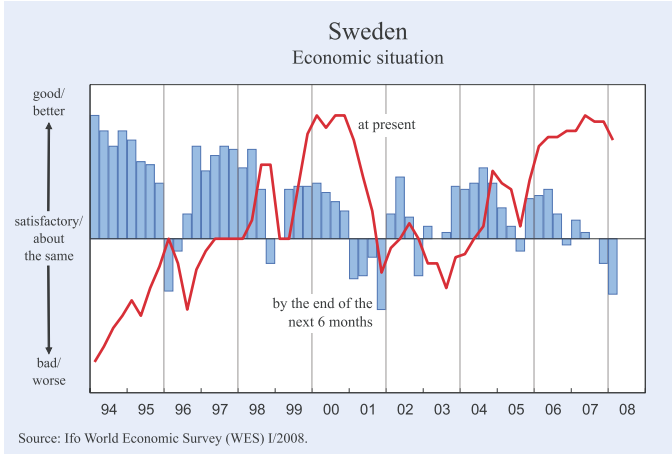
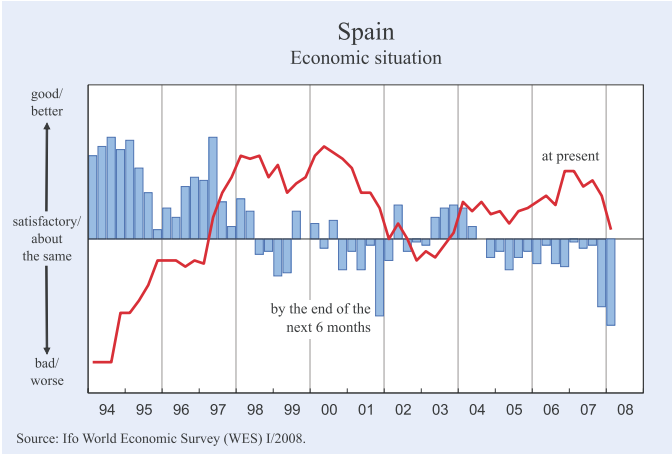


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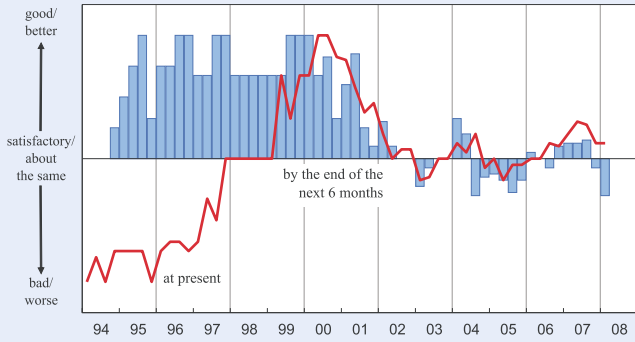
United Kingdom
Economic situation



Source: Ifo World Economic Survey (WES) 1/2008.

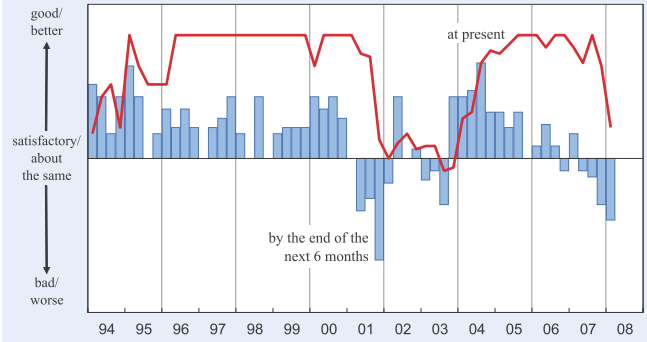


Greece
Economic situation



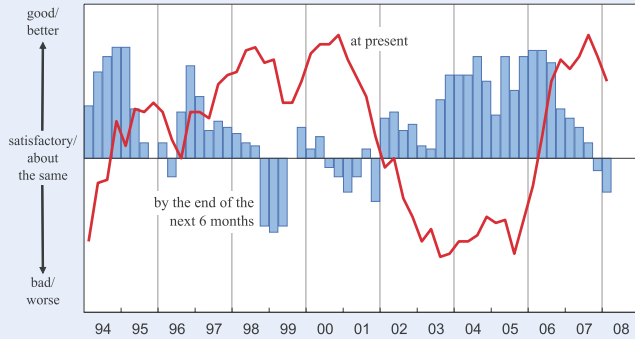
Source: Ifo World Economic Survey (WES) 1/2008.

Ireland
Economic situation



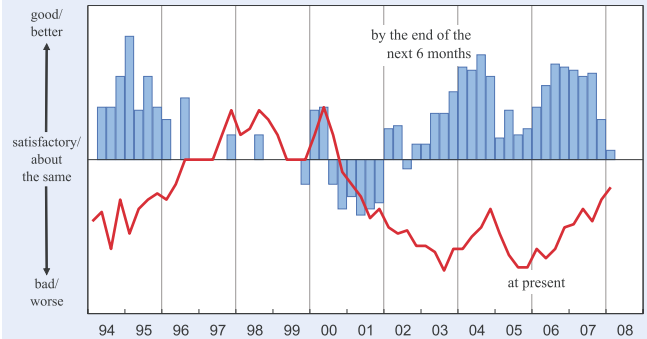
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Netherlands
Economic situation



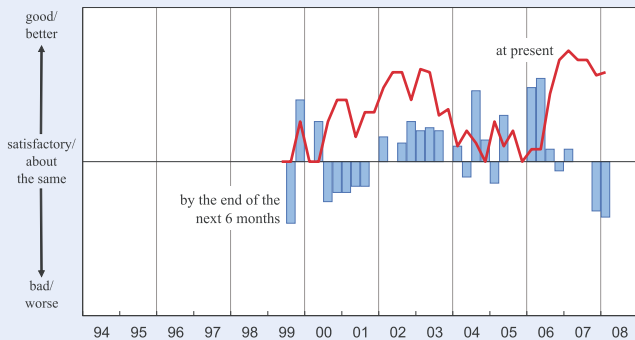
Source: Ifo World Economic Survey (WES) 1/2008.

Portugal
Economic situation



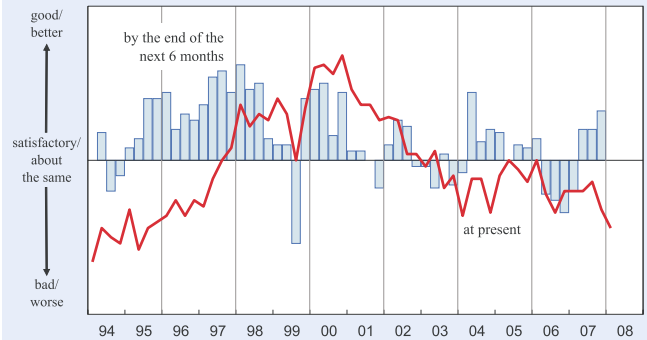
Source: Ifo World Economic Survey (WES) 1/2008.

Slovenia
Economic situation

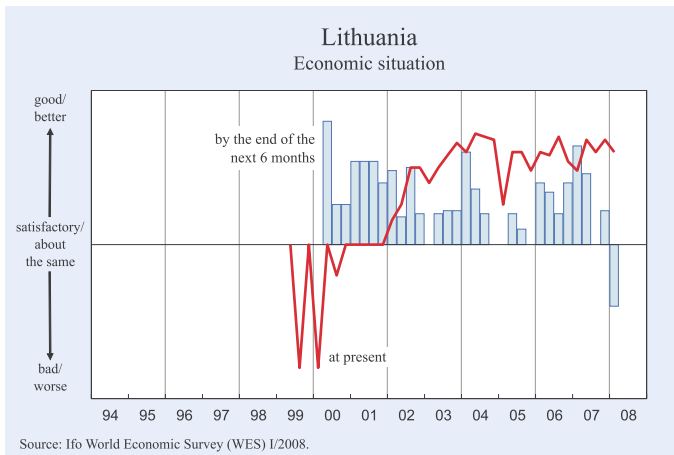
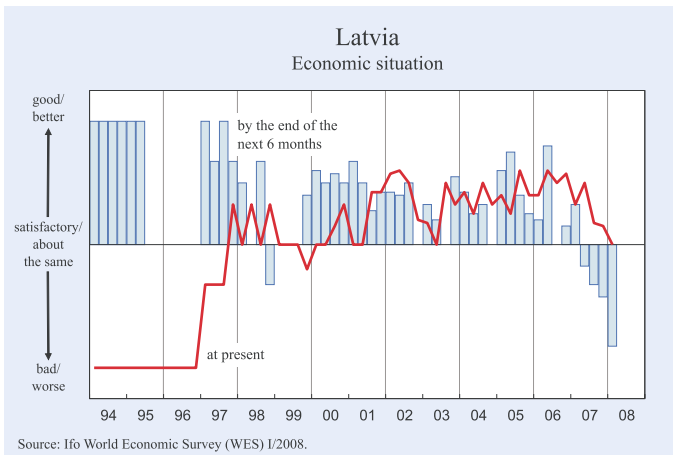
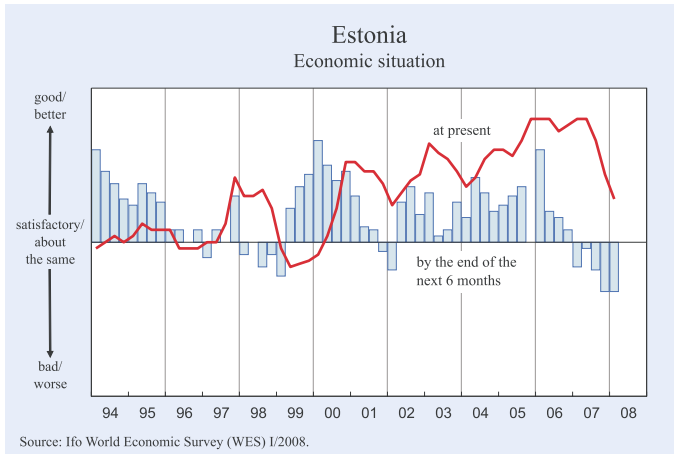
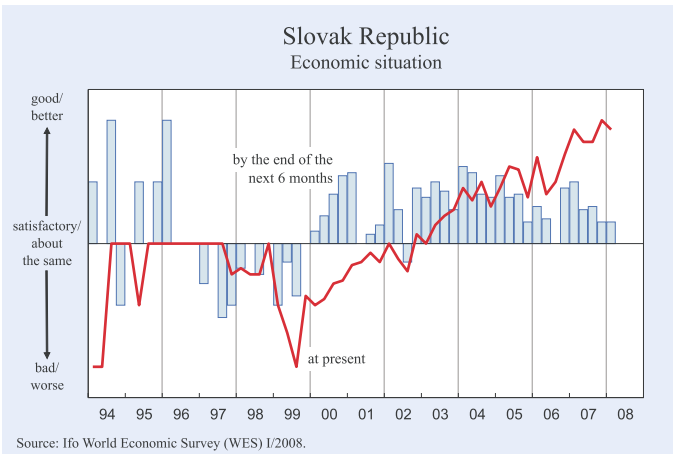
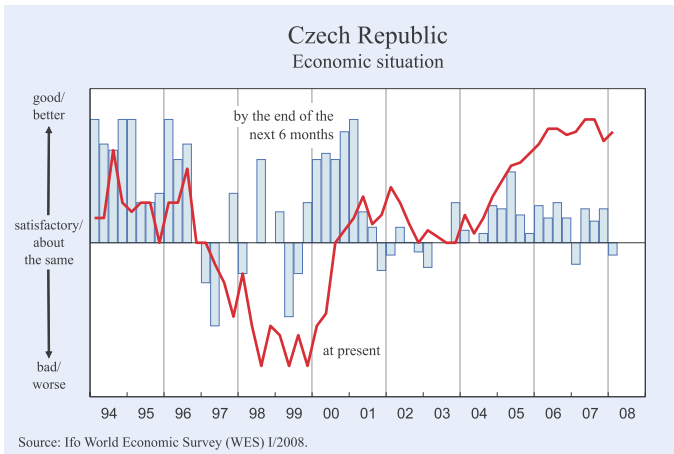
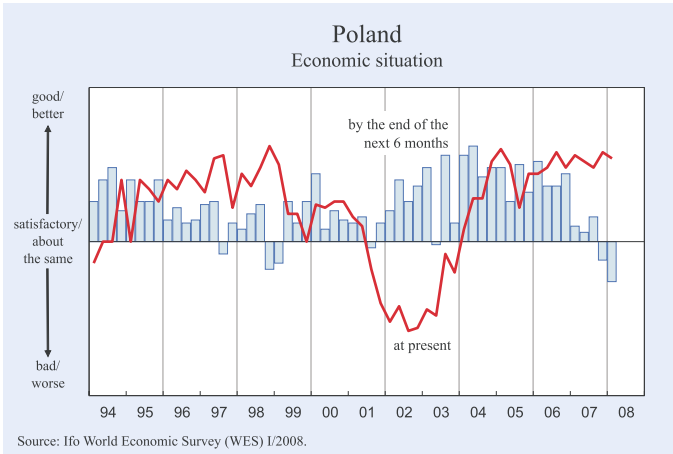


Source: Ifo World Economic Survey (WES) 1/2008.

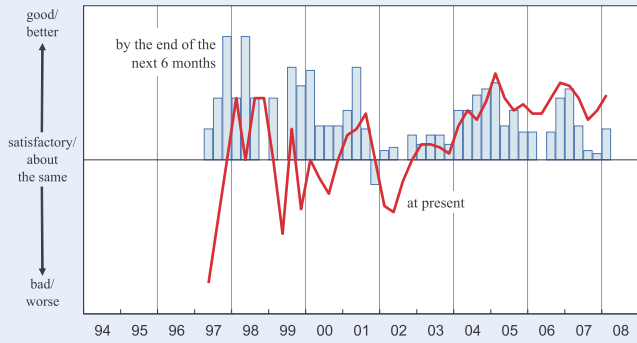
Hungary
Economic situation



Source: Ifo World Economic Survey (WES) 1/2008.

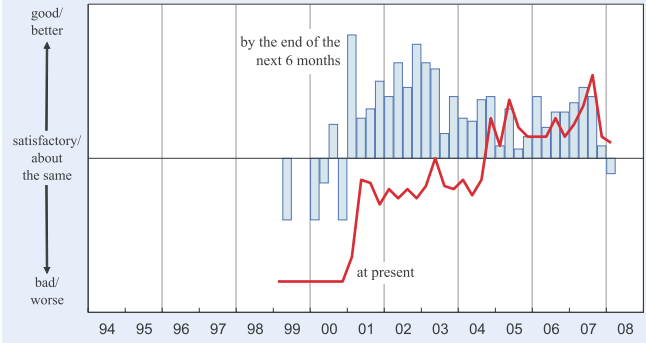


Bulgaria Economic situation



Source: Ifo World Economic Survey (WES) I/2008.

Romania Economic situation



Source: Ifo World Economic Survey (WES) I/2008.

HOW MUCH REAL DOLLAR DEPRECIATION IS NEEDED TO CORRECT GLOBAL IMBALANCES?

1. Introduction

In the mainstream view, a weak dollar is the natural consequence of the long string of large and increasing current account deficits run by the US in the past decade. In ten years, from 1997 to 2007, the current account deficit of the US increased from 1.7 percent of US GDP to 1.7 percent of world output.

Already in 2000, leading economists such as Maurice Obstfeld and Kenneth Rogoff warned that adjustment would require substantial depreciation of the dollar in real terms and on a multilateral basis. Specifically, based on a stylised model, Obstfeld and Rogoff (2005) showed that eliminating a current account deficit of 5 percent of GDP in an economy like the US would require that economy's real exchange rate to depreciate between 35 and 50 percent.¹ Meanwhile, from its peak in 2002 to the beginning of 2008, the dollar lost almost one third of its value in real terms (CPI based). Against the major currencies the fall was much more pronounced: about 40 percent in real terms – mirroring the strong appreciation of the euro (up to 50 percent!).

Questions such as “How much dollar depreciation should Europe and the world expect in the future as a consequence of the US imbalance?” or “To what extent will the dollar fall be accompanied by a global realignment of Asian currencies, supposedly reducing the pressure on the euro?” are in everybody's mind, and rightly so. Yet, to a large extent the answer to these questions builds on some understanding of the specific mechanisms by which real dollar depreciation is an essential step towards global adjustment. After all, it is these mechanisms that

will shape the macroeconomic outlook in the next few years.

In what follows, we reconsider the argument that the US currency must weaken substantially in real terms to correct the US current external imbalance. The emphasis here is on “real terms”, because what counts in the adjustment process is the movement of the price of US goods relative to goods produced in the rest of the world.

Addressing this issue is important because estimates of the real dollar depreciation required for a correction of global imbalances provide a natural anchor for trends in the currency market. The world has already experienced ample swings in the dollar-euro exchange rate. Early on in the decade this rate almost reached 80 dollar cents per euro; it may well be possible that the parity will fall as low as 1.60 dollars per euro. But would the exchange rate then remain persistently at these extreme levels?

The text below will emphasise that the largest estimates of real dollar depreciation (such as the ones by Obstfeld and Rogoff 2005 mentioned above) are based on models which typically assume a strong adjustment in the *domestic* relative prices of non-tradable goods (say, services) within the US and abroad. Strong movements in these prices relative to international prices are clearly possible, but they would be unprecedented by historical standards, and are not supported by econometric evidence. In addition, it is hard to think that large movements in domestic prices would fail to create strong incentives to reallocate production across sectors (away from the non-tradables sector), which would in turn reduce the need for price movements.

The chapter concludes by discussing two recent contributions that reconsider the mechanisms underlying current account adjustment, pointing to much milder scenarios of real dollar depreciation (Dekle et al. 2007 and Corsetti et al. 2008). Carrying out exercises similar in spirit to those of Obstfeld and Rogoff (2005 and 2007), these new contributions confirm the presumption that closing the US current account imbal-

¹ The assessment of the real dollar depreciation required to correct global imbalances carried out by international organisations was often less extreme. As of 2006, the IMF had constructed scenarios with real effective dollar depreciation in the range of 15 percent, under the so-called soft-landing scenario. See, for example, IMF (2006), Box 1.3. Similar estimates are discussed in Faruqee et al. (2007)

ance will require the dollar to weaken persistently in real terms. But the depreciation required for a sustainable current account adjustment would be much lower. The results suggest that a real dollar depreciation of between 10 and 20 percent may well be enough (see also Corsetti 2007).

What does this mean for Europe? Early assessments of the equilibrium exchange rate between the euro and the dollar, especially the ones based on purchasing power parity, by and large pointed to values between 0.90 and 1.30 dollars per euro,² an interval also suggested by Figure 1.5 in Chapter 1. Our conclusion is that at the beginning of 2008 the real exchange rate between the euro and the dollar has already reached, and probably overshot, the value needed for global rebalancing – especially if Asian countries end their (explicit or implicit) peg to the dollar.

2. The ABC of dollar depreciation: terms of trade versus internal price adjustment

The 2005 EEAG Report already discussed in great detail different views on what lies at the heart of the emergence of global imbalances in the 1990s, and the implications of such imbalances for Europe. That report also included a synthetic introduction to the ABC of dollar depreciation and external adjustment according to leading models. To introduce our new argument, it is worth reconsidering once again the role of relative price movements in rebalancing the external account. The starting point consists of a definition and simple national accounting.³

To begin with, recall that the real exchange rate is the price of US consumption relative to consumption abroad. It is customarily measured by multiplying the nominal exchange rate by the ratio of domestic to foreign CPI. The CPI, of course, includes both goods that are traded across the border and goods that are not traded because their value is too small relative to (international) trade costs. Hence, real exchange rate movements can be roughly decomposed into changes in the relative price of traded goods produced at home and abroad, that is, the *terms of trade*, and changes in

the price of non-traded goods in terms of traded goods.

As regards national accounting, the simplest identity states that the value of a country's total domestic demand plus net exports must be equal to the value of its output:

$$\text{Value of Domestic Demand} + \text{Value of Net Exports} = \text{Value of GDP}$$

For our purposes, it is useful to rewrite this identity as follows. First, net exports are replaced with some *target* level of current account adjustment, that is, of an assessment by how much adjustment would be required to correct the external imbalances. As a reference estimate, consider an adjustment up to 5 percentage points of GDP, which would correspond to a de facto elimination of the US external imbalance. Second, in order to highlight the role of relative price adjustment, demand and GDP are broken down into two components, distinguishing between traded and non-traded goods. We obtain:

$$P_N D_N + P_T D_T + D_F + \text{Current Account Adjustment} = P_T Y_T + P_N Y_N$$

In this identity, P_N and P_T denote the prices of US non-tradables and US tradables, respectively, both expressed in terms of US imports (which consist of foreign tradables); D_N , D_T and D_F denote the US demand for domestic non-tradables, domestic tradables and foreign tradables (imports); Y_N and Y_T denote US output of non-tradables and tradables.

With the different components of output and demand spelled out explicitly, the above identity is useful to capture the essence of the adjustment mechanism. The logic of this mechanism is straightforward. Reducing the US deficit is equivalent to a transfer of resources from the US to the rest of the world. Adjustment thus requires a decrease in US demand relative to production, matched by an increase in demand relative to output in the rest of the world. Such global reallocation of demand in turn requires a change in relative prices as well as a change in relative income and wealth.

To see the role of relative price adjustment most clearly, assume that all quantities produced in the world (the Y 's in the above identity) remain constant before and after the adjustment. This means that the whole adjustment mechanism works through prices and

² See Chinn and Alquist (2000), Alberola et al. (2002), Maeso-Fernandez et al. (2002), and Rosenberg (2003) among others.

³ The model below draws on the economics of "transfer", referring to the classic controversy between Keynes (1919, 1929a,b,c) and Ohlin (1929a,b).

demand movements (the P 's and the D 's in the identity). This is essentially the exercise proposed by Obstfeld and Rogoff (2005).

For a given output, current account adjustment requires all prices to move in equilibrium. The relative price of US tradable goods (P_T) must fall to raise foreign demand for US exports, and discourage US demand for imports (causing a fall in D_F). But, other things equal, cheaper US tradables would mean that US households and firms will demand more of them, at the expense of their demand for US non-tradables. As the supply of these goods is given by assumption, the relative price of US non-tradables (P_N) must also fall, to ensure that domestic demand for US non-tradables will be high enough to meet their supply.

A striking result in the Obstfeld and Rogoff (2005) calculations concerns the relative magnitude of the price changes for tradables and non-tradables, once reasonable demand elasticities for different types of goods are used to calibrate the model. These authors propose the following scenario. Holding output quantities fixed, the fall in the international price of US tradables (that is the adjustment in the terms of trade) accounts for a real dollar depreciation of between 5 and 15 percent; the change in the relative price of non-tradables accounts for a real dollar depreciation of between 20 and 30 percent. In this scenario, it is the change in the latter relative price which clearly makes up the lion's share. The movement in non-tradables prices could be several times larger than changes in the terms of trade.

To understand the concrete meaning of these estimates, it is important to keep in mind that services are mostly non-tradables, while manufactured goods are mostly tradables; over time, productivity differentials across sectors cause the price of services to fall steadily in terms of the price of manufactured goods, as predicted by the Harrod-Balassa-Samuelson hypothesis, amply discussed in the 2002 EEAG Report. The reasoning above suggests that for the US to eliminate its current account deficit, the price of US

services should fall by up to one third *relative to trend*, in terms of the (mostly traded) US manufacturing goods.

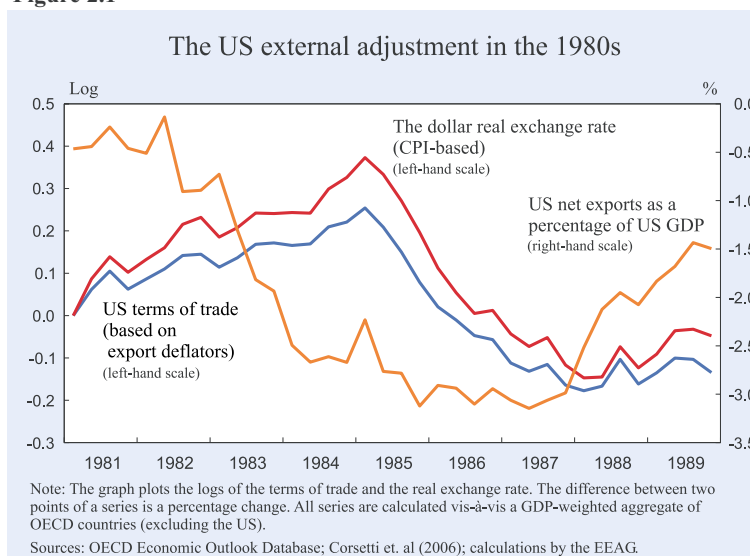
To be accurate, it should also be stressed that the above scenario is not the only possible outcome of adjustment. According to the model used in the above calculation, there are different ways in which a given real dollar depreciation can occur: real depreciation can result from, say, a sharp increase in the price of non-tradables in the rest of the world, as opposed to a fall in the US. The calculations in the example by Obstfeld and Rogoff nonetheless raise an important issue: how much *internal* relative price adjustment in the US can be anticipated in a process of external adjustment?

3. Is a sizeable change in internal prices likely to happen in the US?

Some insight on the different dynamics of relative price movements at the domestic and international level can be gained by reconsidering previous episodes of real depreciation and current account adjustment. We first review a case study, then some econometric evidence.

The most relevant episode for our purpose is clearly the one experienced by the US in the mid-1980s. After a period of substantial appreciation associated with current account imbalances, the dollar started to depreciate in 1985, and fell throughout 1989, after which it roughly stabilised. The current account initially deteriorated somewhat, then stabilised in 1986–87, and

Figure 2.1



eventually started to improve from 1988, with a three-year delay from the beginning of the dollar depreciation phase. These patterns are illustrated by Figure 2.1, which plots US net exports (whose behaviour are very similar to the current account) together with the US terms of trade and the real exchange rate of the dollar (both CPI and PPI-based), measured against an aggregate of other OECD countries. The episode of the US current account adjustment in the 1980s, and the debate around it, is discussed in great detail by Krugman (1991) among others.

In the three-year period going from the beginning of 1985 to the beginning of 1988, the dollar depreciated in real terms by about 50 percent against the rest of the OECD countries, as opposed to a cumulative appreciation as high as 15 percent in the preceding three years. On a multilateral basis (considering all trade partners of the US), the corresponding figures are 35 percent and 20 percent, respectively. From 1988 on, in real terms the dollar fluctuated around the new, weaker level for a long time, well into the 1990s.

Further insight into the role of prices can be gained by looking at Figure 2.2, which plots the US terms of trade together with the relative price of non-tradables. The latter is proxied by the ratio of the US Consumer Price Index for Services and the US Producer Price Index (PPI). The figure also includes a linear trend through (our proxy for) the relative price of non-tradables.

Over the whole period displayed in Figure 2.2, the CPI for services kept increasing steadily in terms of the PPI. The trend line captures the secular rela-

tive price increase of non-tradables. Compared to this trend, however, the figure unveils interesting patterns.

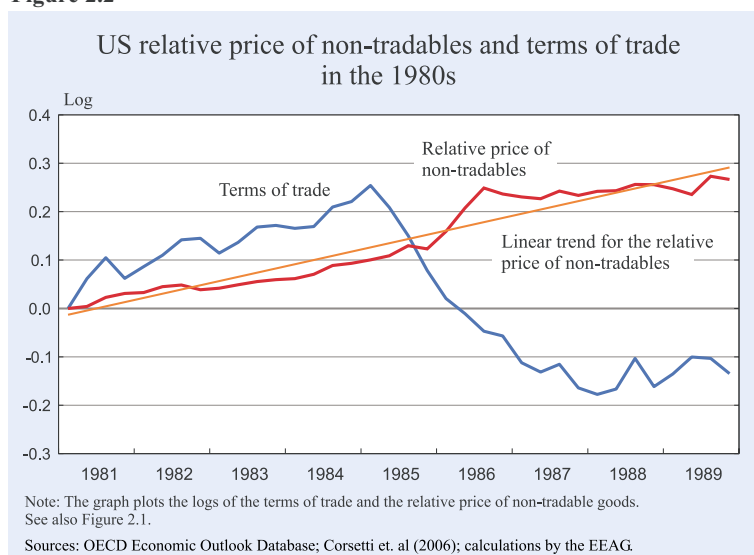
First, remarkably, the rate of increase in the relative price of non-tradables actually became faster in a two-year window after 1985, when the dollar was depreciating sharply, relative to the period before 1985, when the dollar was still appreciating.⁴ This (admittedly temporary) acceleration seems at odds with the model discussed above, as this predicts that the price of non-tradables would actually weaken together with the real exchange rate during phases of external adjustment.

Nonetheless, one should observe that in the three-year period after 1985, the US external deficit did stabilise but did not narrow. A significant change in both internal prices and external deficit, consistent with the argument illustrated by Obstfeld and Rogoff, eventually occurred, but only over the last two years of the decade. It was only then that the price of non-tradables rose at a much lower rate relative to trend, and the current account started to show significant improvement.

The lesson to draw from these considerations is not straightforward. On the one hand, consistent with the leading model of current account adjustment, there was a notable correction of the non-tradables prices around the time when the current account stabilised and started to improve, that is, between 1987 and 2000.

On the other hand, Figure 2.2 also highlights a marked movement of the price of non-tradables in the opposite direction immediately after the beginning of dollar depreciation, especially between 1986 and 1987. In light of the strong relative-price increase for non-tradables in those two years, the reversal in the following years appears less striking, as it may correspond, at least in part, to an offsetting movement. Obviously, cyclical considerations heavily influence these numbers.

Figure 2.2



⁴ A similar picture emerges if one looks at different proxies for non-tradable prices, such as the ratio of the CPI to the price of capital equipment. For this indicator, there is no change in dynamics in the three-year window before and after 1985.

Most strikingly, Figure 2.1 shows that the real exchange rate remained strongly correlated with the US terms of trade before and over the entire adjustment period. In Figure 2.1, the two international prices closely track each other. In the period 1985–1987, for instance, the US terms of trade (based on export deflators) deteriorated by about 40 percent against OECD trade partners, against a 50 percent decline in the real exchange rate. As shown by Figure 2.2, over this period of dollar and US current account adjustment in the 1980s, the terms of trade varied substantially more than internal relative prices.

So, while the experiences from the 1980s suggest that movements in domestic relative prices of non-tradable in the US were eventually consistent with the model, the size of these movements were quite contained, and in any case significantly smaller than the corresponding movements in the terms of trade.

These conclusions are backed by empirical estimates of the effects of deficits on the terms of trade and the relative price of non-tradables. According to the baseline econometric results for the G3 countries by Galstyan (2007), for instance, the percentage deterioration in the terms of trade in response to a reduction in the external deficit is three times larger than the percentage fall in the price of non-tradables (4.7 versus 1.6). Remarkably, this ratio is similar for other countries.

In light of this evidence, it is not surprising to find that also now there is little or no evidence of strong internal relative price adjustment in the US, despite the large slide in the external value of the dollar since 2002. The rate of price increase for services has constantly outpaced the rates of price increase for other broad categories of goods in the US: between the end of 2002 and the end of 2006, the CPI for services has increased by 12.8 percent, more than 2 percentage points faster than the overall CPI (10.6 percent), and twice as fast as the CPI excluding food and energy (6.3 percent). The PPI (excluding food and energy) rose by even less, by about 5.6 percent. Over the same period, the dollar depreciated by about 15 percent in real effective terms, although (admittedly) there was hardly any sign of current account adjustment.

In the next few years, it is plausible to expect some effects of dollar depreciation on the relative rate of price increase by sectors in the US, with the rates of price increase for non-tradables falling somewhat rel-

ative to the rates of price increase for tradables (always relative to trends). According to the model, this should be required for the US external position to improve in a substantial and sustainable way. Correspondingly, Europe should expect internal relative price movements in the opposite direction. It would be highly unlikely, however, that these differentials in the rates of price increase lead to internal realignments of dramatic magnitudes.

4. Prices and valuation effects in the global rebalancing

Real dollar depreciation also causes “valuation effects”, that is movements in the value of US incomes relative to the rest of the world. To see the “income side” of the adjustment mechanism discussed so far, focus on the right-hand side of the national accounting identity in Section 2 above. For given output quantities, the fall in the price of both the US traded *and* the US non-traded goods relative to foreign tradable prices lowers the value of US GDP relative to the value of foreign GDP. Inherent in the logic of the exercise proposed in the first part of this text, US residents are relatively poorer because of price adjustment, even if they produce exactly the same amount of goods.

In this respect, real dollar depreciation is akin to a persistent slowdown of US output growth relative to the rest of the world: in either case the relative *value* of US output would fall, reducing US domestic demand relative to foreign demand, hence making room for current account adjustment. Those who believe that the only way to reduce the US external deficit is a pronounced and persistent US recession essentially emphasise the role of quantities over prices in driving down US relative income.

Now, we have argued above that while the leading model of current account adjustment attributes relative wealth and demand effects to strong movements in the average price of non-tradable goods, a large correction in this relative price is not very likely in practice. Yet, one could argue that the leading model is actually right on target, once the emphasis is placed on the price of housing (after all houses are non-tradables) rather than on the price of non-tradable goods and services entering the Consumer Price Index.

Indeed, a large correction in the housing prices in the US per se can generate substantial wealth and demand

effects consistent with external rebalancing – as long as the fall in these prices hits this country more than the rest of the world. Not only housing has a large weight in national wealth. Most importantly, housing wealth accounts for a very large share of the portfolio owned by low- and middle-income households, who arguably have a relatively higher propensity to spend than richer households. Hence, a fall in housing wealth can be expected to have a comparatively stronger impact on final demand than other components of national wealth.

One may observe that, starting in 2006, the fall in the price of housing indeed coincided with an acceleration in the rate of dollar depreciation and a pick-up in the pace of US net export growth. Assessing the specific role of housing in the global rebalancing is, however, quite complex. First, global portfolio diversification implies that the losses from a fall in asset prices in one country are partly borne abroad. At the time of writing, the amount and distribution across countries of the direct and indirect losses from the subprime mortgage crisis in the US is still unclear. Moreover, the financial turmoil created by this crisis may have global wealth and output implications well beyond the direct losses in the mortgage markets. Second, developments in the housing sector obviously have important cyclical consequences for the country as a whole, driving the current account.

Some of the external effects of a substantial contraction in real estate markets are direct, via import demand from the sector. Evidence on this transmission channel is provided by researchers at the New York Fed, who examined the year-to-year growth rate

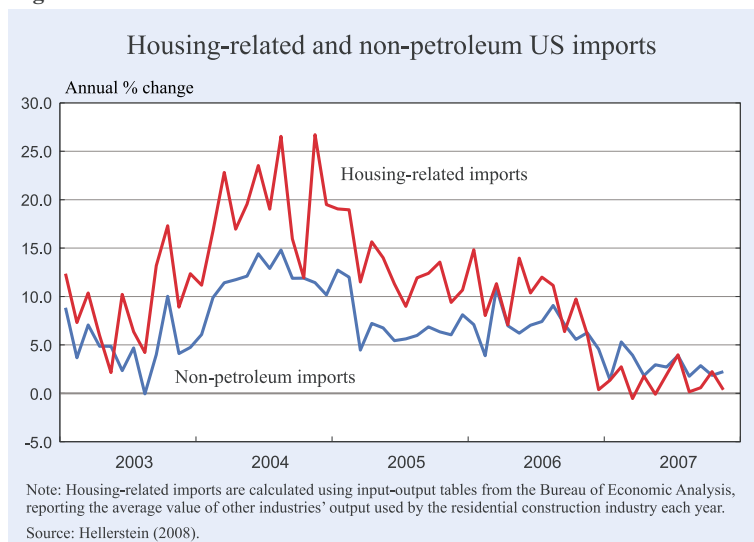
of all non-petroleum imports by the US, and compared this to the growth rate of imports commonly used as inputs by the residential construction sector (see Hellerstein 2008). The main findings are summed up in Figure 2.3 below. The graph shows that the year-to-year growth rate of housing-related imports was very dynamic during the years of the housing “bubble”: it is at least as high, often higher, than total imports (excluding oil) through late 2006. From the end of 2006 on, the growth of housing-related imports slowed down considerably, once again moving closely together with total imports.

In addition to the direct implications for import demand, a real estate crisis drives the external account to the extent that it creates a recessionary impulse (which per se reduces US import demand), and motivates a reaction by the Federal Reserve, in the form of interest rate cuts (which creates external demand via dollar depreciation). An analysis of this scenario is proposed by Krugman (2007).

These cyclical considerations, including the possibility of a severe global slowdown induced by a credit crunch, obviously weigh on the currency market. Arguably, already in 2007 investors took into account possible differences in the response of the European Central Banks relative to the Federal Reserve Bank. A US slowdown and a large fall in the dollar would clearly contribute to accelerating the correction of the US external imbalance.

Yet it is important to stress that sustained adjustment of the external imbalance can only occur through a shift in relative wealth and demand over the medium and long run, that is well beyond the time frame of a business cycle downturn.

Figure 2.3



5. Scenarios for the medium run

If the internal relative prices of goods and services in the US and abroad cannot be expected to move substantially during the process of external adjustment, how far can the dollar be expected to fall in real terms? Once again, the focus here is not on short-run developments but over a longer horizon.

There are reasons to expect a long period of dollar weakness, but the fall in the US currency required to foster current account adjustment is likely to be smaller than suggested by estimates that place a large weight on the adjustment in non-tradable prices.

First, changes in wealth and international prices are bound to have an impact on the level and composition of output in the US and abroad. Indeed, it is hard to believe that internal relative price can move by almost $\frac{1}{3}$ without causing significant sectoral shifts in production, a possibility ruled out by construction in the example proposed by Obstfeld and Rogoff that we discussed in Section 2 above. In some other examples by the same authors, it is indeed shown that, for given demand elasticities, the need for internal price adjustment and therefore real dollar depreciation can decrease considerably if the composition of US output by sector changes in favour of tradables as a response to relative-price movements (see Obstfeld and Rogoff 2007).

5.1 Rebalancing and market dynamics

A relatively small dollar depreciation is predicted in several recent contributions that develop a variety of models, allowing for some adjustment in the level and composition of output. The numerical exercises proposed by Corsetti, Martin and Pesenti (2008), for instance, suggest that closing the US current account deficit (from 5 percent of GDP to zero) could lead to a combination of lower US consumption (– 6 percent), and higher US employment (+ 3 percent), relative to trend. This would then correspond to a rate of real dollar depreciation of the order of 20 percent.

Because of entry and exit of new firms and product varieties in the export market over time, the “required” dollar depreciation could actually become smaller than 20 percent (even substantially smaller; see Corsetti Martin and Pesenti 2007), without necessarily changing the adjustment in consumption and employment (which could still be – 6 percent and + 3 percent, respectively). These results are particularly noteworthy, because they suggest that the macroeconomic costs of current account adjustment (in terms of consumption and employment) are not necessarily increasing in the extent of real dollar depreciation.

Key to these scenarios is the degree of economic flexibility and adaptability of both the US economy and the economies in the rest of the world. In the baseline

exercise, adjustment would coincide with some contraction in the US non-tradables good sector (– 2 percent), coupled by a substantial expansion in tradables, both for the domestic market (+ 11 percent) and for the foreign markets (+ 24 percent). The idea is that product innovation and differentiation could reduce the need for a large weakening of the international prices of US products. Observe that in light of this consideration, in the next few years European firms can be expected to face much stronger competition by firms overseas, even if the adjustment in the exchange rate turns out to be modest.

5.2 A multi-country model

A similar assessment is presented by Dekle, Eaton and Kortum (2007), based on a quite different model. These authors build a multilateral model calibrated to 40 countries using 2004 data on GDP and bilateral trade flows in manufacturing goods.

Table 2.1 reports gross and net trade in manufactures for a subset of countries considered in this study. The table includes 14 European countries, Japan, China, India, and the US. Observe that ten of the 14 European countries included in the table run a deficit, the other four a surplus. The largest deficits are run by the UK, Spain and the area comprising Belgium, the Netherlands and Luxemburg, i.e. the Benelux countries. The largest surpluses are run by Germany, Ireland, Sweden and Finland.

These authors ask what would happen, in general equilibrium, if manufacturing trade deficits around the world had to be adjusted to set *all* current account balances equal to zero. The target adjustment is reported in the fourth column in the table, under the heading “Counterfactual balance”. For the US, the counterfactual balance is of course staggering: it requires a shift from a deficit of almost 500 billion US dollars to a surplus of 180 billion US dollars. Similarly large is the required adjustments with the opposite sign, for China and Japan.

Observe that depending on the overall current account in 2004, the “Counterfactual balance” requires significant adjustment also in Europe. Notably, the surplus in Germany is cut by one half; the surplus should turn into a deficit in Sweden; the external deficit run by Benelux countries substantially widens. On the other hand, Italy is required to increase its manufacturing surplus. Ireland’s external position is unaffected.

Table 2.1

Trade in manufactured goods: values in 2004 and counterfactual adjustment.

	Gross trade (a)		Trade balance (a)	Counterfactual balance (a)	Relative wage adjustment (b)
	Exports	Imports			
Austria	82.4	83.5	- 1.1	- 3.1	1.2
Belgium, the Netherlands and Luxemburg	307.8	371.6	- 63.7	- 136.8	1.5
Denmark	42.6	52.2	- 9.5	- 16.7	4.6
Finland	50.5	36.2	14.4	3.4	5.2
France	333.0	338.2	- 5.3	- 0.3	0.4
Germany	750.9	541.4	209.5	106.5	3.1
Greece	9.3	38.9	- 29.5	- 17.3	- 11.2
Ireland	115.2	49.1	66.2	66.0	0
Italy	278.3	257.1	21.2	35.6	0
Norway	22.8	39.2	- 16.4	- 52.4	34.5
Portugal	29.9	40.6	- 10.7	- 1.0	- 6.1
Spain	132.0	194.7	- 62.8	- 9.1	- 4.8
Sweden	100.3	77.1	23.2	- 5.5	7.3
United Kingdom	254.5	363.7	- 109.2	- 75.3	- 1.4
China and Hong Kong	816.8	695.0	121.8	36.2	2.5
India	58.5	53.1	5.4	- 2.7	1.7
Japan	545.2	268.2	277.0	103.7	3.7
United States	673.7	1159.3	- 484.6	179.4	- 6.8

(a) Data are for 2004 in billions of US\$. – (b) Percentage change.

Source: Deckle et al., (2007), Table 2.

What is the magnitude of the macroeconomic adjustment required to engineer such a fix of external imbalances? The surprising answer is that according to the trade model adopted in the exercise, the magnitude of adjustment is, on average, small.

Strikingly limited is the implied adjustment of relative wages (labour costs). For example, wages in the country with the largest deficit (US) fall only by 10 percent relative to wages in the country with the largest surplus, which is Japan. Overall, the relative wage of the US must adjust by about 7 percent. Among the European countries in the table, relative wage appreciation is quite contained everywhere except for Norway. Relative wage depreciation is expected for Greece, Portugal, Spain and the UK.

In all these countries, however, wages hardly change in real terms, mostly because of the large component of non-tradables in total consumption but also because of a home bias in domestic spending on manufacturing goods. Overall, wages move by approximately 1 percent in real terms, with the exception of Norway where they increase by 4.2 percent (see Deckle et al. 2007 for details).

Changing trade elasticities clearly affects the numerical estimates from the exercise. In some robustness

checks using a lower elasticity, the size of relative wage adjustment in the US rises but only up to 18 percent relative to China and 20 percent relative to Japan. The adjustment in US real wages is barely affected.

5.3 Beyond trade-related considerations

The two exercises reviewed above are similar in spirit to the ones proposed by Obstfeld and Rogoff (2005 and 2007): they are static in nature and largely focus on the equilibrium relative price adjustment required to correct “global imbalances”. For this very reason, however, they prove that general-equilibrium trade models do not necessarily support the view that substantial correction is possible only with a very large real dollar adjustment.

It should be stressed that these calculations are not forecasts. They point to plausible outcomes in a world where a large debtor (the US) starts to service its debt, therefore compressing domestic demand relative to foreign demand. But the exchange rate is driven by many different factors. For instance, an especially important one, which we have not treated explicitly, is relative productivity growth (and market expectations about it). Many observers believe that the differential

in favour of the US, which seems to have driven much of the current account deficits from the mid-1990s on, has now substantially fallen.

Nonetheless, an additional reason why the dollar fall need not be dramatic has to do with the currency and asset class composition of the US external portfolio (including both gross assets and gross liabilities). As is well known, most of the US debt is denominated in dollars, whereas a large fraction of this country's external assets are denominated in foreign currency. In the short run, these differences may provide opportunities for the US to alleviate the burden of its foreign debt through exchange rate depreciation: other things equal, dollar depreciation raises the value in dollars of foreign-currency denominated assets owned by the US, without affecting the value of the dollar-denominated liabilities of this country. As the current account is the difference in the value of net foreign assets between the beginning and the end of a year:

Current Account = Change in Net Financial Assets,

any revaluation of foreign assets held by US residents would clearly reduce the external deficit for a given value of net exports. This mechanism creates a potentially important channel through which international price movements cause valuation effects which feed back into the overall external position of a country, much discussed in recent research work (see Chapter 2 of EEAG 2005 for a discussion).

While dollar depreciation can generate short-run gains, the abuse of the opportunity to manipulate values through the exchange rate would create dynamic risks. The main risk is that excessive and/or systematic recourse to depreciation would convince international investors to redirect their portfolios away from dollar-denominated assets, ultimately raising issues about how to finance the US external deficit. But the US monetary authorities are well aware of the need to maintain confidence in the dollar.

6. Conclusions

Closing the US current account deficit does require a weak dollar, but current assessments of global rebalancing differ regarding the required real dollar depreciation. In this chapter we have argued that, in the leading model of current account adjustment, estimates of large real depreciation presuppose a strong

fall in the relative price of domestic non-tradables within the US economy. In light of the evidence from the 1980s as well as of the results from econometric studies, such sizeable corrections in internal relative prices, larger than changes in the US terms of trade, are quite unlikely.

According to recent studies, the magnitude of a real depreciation that would insure a sustainable correction of the US external imbalance may well be in the range of 10–20 percent, perhaps even less, in real effective terms. By these standards, the real depreciation of the dollar, especially vis-à-vis the euro, is more likely to have reached, and probably overshot, the parity that is consistent with a global correction of imbalances.

This consideration does not exclude much sharper movements over the next few quarters or even in the next few years, in the early phases of the correction (see Krugman 2007 for a particularly sharp analysis of this point). But the economic forces at play do not necessarily support scenarios of sustained extreme dollar depreciation.

We should also stress that possible substantial movements in the dollar, especially taking into account the possibility of overshooting, do not necessarily coincide with a dollar crisis. A dollar crisis could occur if there were to be an abrupt decline of the dollar as the main international reserve and vehicle currency. For instance, a premise for such a crisis could be a sudden sell-off of dollar reserves by monetary authorities around the world. While we do not attach any significant probability to such an event, we find it important to stress that a dollar crisis would be quite harmful to the process of global rebalancing. Financial turmoil would seriously undermine the foundations of world asset market integration. Even more damaging is the possibility that an abrupt depreciation of the dollar could trigger strong protectionist pressures especially in Europe.

Even without an extreme dollar depreciation, however, the correction of global imbalances can be expected to entail significant macroeconomic adjustment both in the US and in Europe. European firms are already facing much stronger and increasing competition from US firms. As there will be some reallocation of resources from the non-tradable to the tradable sector in the US, the opposite can be expected to happen in Europe.

The intensity of these effects is likely to differ across countries. While the current account for the euro

area as a whole is roughly balanced, there are substantial differences among countries. This also applies to the degree of openness and to competitiveness. One of the exercises reviewed in this chapter assumes an even distribution of adjustment across all countries. In this exercise, Germany would reduce its surplus by one half, while Italy is expected to gain competitiveness. Unfortunately, there is no guarantee that adjustment in Europe will be even. With different degrees of flexibility in economic structures, Europe runs the risk of facing a period of strong divergence in growth rates and external adjustments. Dealing with this risk is well beyond the reach of the European Central Bank, and is definitely not a reason for increasing deficit spending, which can at best provide some short-run relief. The need for correcting the global imbalances instead raises the social value of investment in reforming the goods and the labour markets at the national level, along the lines amply discussed in several earlier EEAG reports.

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