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Monetary policy and the global economy

Contents

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Translated and edited
by the Bank of Finland Language and Publication Services

Subscriptions
email: BoFpublications@edita.fi

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Bank of Finland
PO Box 160
FI-00101 HELSINKI
Phone: National 010 8311
International +358 10 8311
Fax: +358 9 174 872
www.bof.fi

The cover picture depicts the national motif on the Slovakia's 2 cent coin: The Tatra Mountains' peak Kriváň.

Monetary policy and the global economy

6 September 2012

Executive summary

The global economy has deteriorated during the spring and summer. The outlook is overshadowed by the slowdown in world economic growth, a weakened climate of confidence and the problems in the euro area. Large fluctuations in market prices indicate prevailing uncertainty among investors. Tentative signs of alleviation in the market uncertainty are, however, discernible, for example in share prices, which have recovered during the summer, and on the government bond markets, where eg the yields on Spanish and Italian bonds have fallen, particularly on the shorter maturities.

Notwithstanding the shoots of market optimism, major differences remain between euro area countries in regard to the effective transmission of the common monetary policy. To the extent that differences in the price of finance and its availability reflect differences in governments' debt sustainability, the health of banking systems and the position of the private sector, the risk premia are justifiable and the differences will be reducible only slowly. In contrast, unfounded risk premia, for example those related to the reversibility of the euro, are not acceptable. Accordingly, at its September meeting, the Governing Council of the ECB decided the main features of a new Outright Monetary Transactions (OMT) programme, the objective of which is to ensure the appropriate transmission and singleness of monetary policy.

According to the Bank of Finland's September 2012 global economic forecast, the second half of the current year will be a period of widespread sluggish growth in the global economy. The economic outlook for the euro area for the remainder of the year is weak, while growth rates for emerging economies are projected to be lower than previously expected. The forecast is based on the assumption that, with the help of national and EU-level decisions, market expectations can be sufficiently met and the worst phase of the crisis be left behind. Even so, the dispersal of uncertainty will be a slow process, as, in a best case scenario, we could have to wait until well into next year to see signs of improved economic growth and debt sustainability in those crisis countries with the deepest problems.

In the baseline forecast, the global economy will grow only slowly in 2012–2013. The forecast has been amended downwards, particularly in respect to 2013. The adjustment process in the crisis countries of Europe is only in the early phase, and experiences from past financial crises suggest it could last for several years yet. Although the outlook has changed most in the euro area, forecasts for next year have been revised down for all the main economic regions. The weak climate of confidence and increased uncertainty are also reflected in a deceleration in world trade growth. Inflation is forecast to stabilise at below 2% during the forecast period in the main advanced economic regions.

The forecast risks are primarily on the downside and relate above all to the prolongation and deepening of the problems in Europe. There is a substantial risk that the unfavourable spiral in the euro area will continue, with recovery being even slower than forecast. Such developments could be triggered by eg the economic situation in the crisis countries turning out to be weaker than assumed, growing doubts over the adequacy of policy measures and/or accelerating capital flight. Although the situation in Europe is fragile, better-than-forecast developments are still possible. If Europe is able to build a credible crisis strategy, market confidence may strengthen faster than assumed, which would halt the flight of capital and reduce financing costs for financial stressed countries. Fundamental to ensuring the debt sustainability of the crisis countries is that the countries themselves commit to adequate adjustment measures and structural changes, and that providers of finance provide guarantees over the availability of reasonably priced external funding for the duration of the adjustment measures.

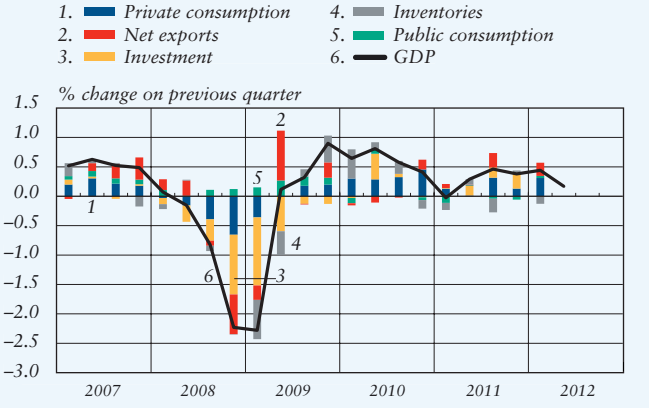
Cyclical conditions and economic outlook for the global economy

The Bank of Finland forecast for the global economy released in March 2012 indicated world economic growth in 2012 would remain at a good 3%, ie about ½ percentage point lower than in 2011. The slowdown was considered to result from the euro area being in a short-lived recession and from an easing of growth in emerging economies, particularly China and India. At the time of preparing the spring forecast, indicators for the euro area suggested that the contraction in the area's economy would end by the summer. Moreover, indicators for the United States pointed to the possibility of slightly accelerating growth as early as 2012. However, the global economic outlook deteriorated in the second and third quarters of 2012 (Charts 1–2). A worsening of the euro area debt crisis added to the uncertainty, leading to a fall in stock prices and a widening of government bond spreads in late spring. Uncertainty and weaker funding conditions eroded household and business confidence, causing indicators of economic agents' expectations to decline in key countries.

Chart 1.

Slower growth in second quarter

GDP contributions

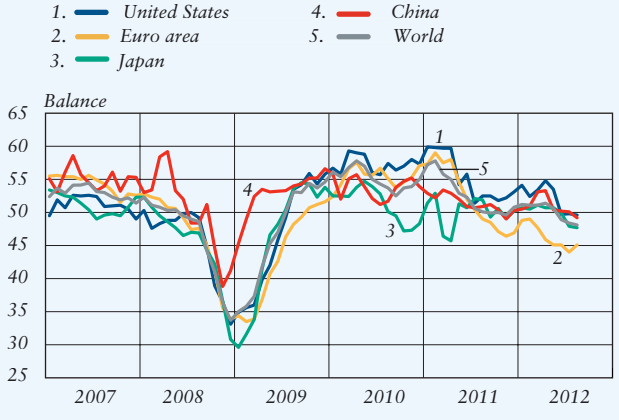


Includes the euro area, Japan and the United States.
Sources: National statistical authorities and Bank of Finland calculations.

Chart 2.

Industrial outlook weakened during the summer

Purchasing managers' indeces: manufacturing



Source: Bloomberg.

The steepest fall in indicators occurred in the euro area. In April, purchasing managers' manufacturing and services indices already pointed to a slowing of euro area economic activity. In fact, euro area GDP recorded a quarter-on-quarter drop of 0.2% in the second quarter.

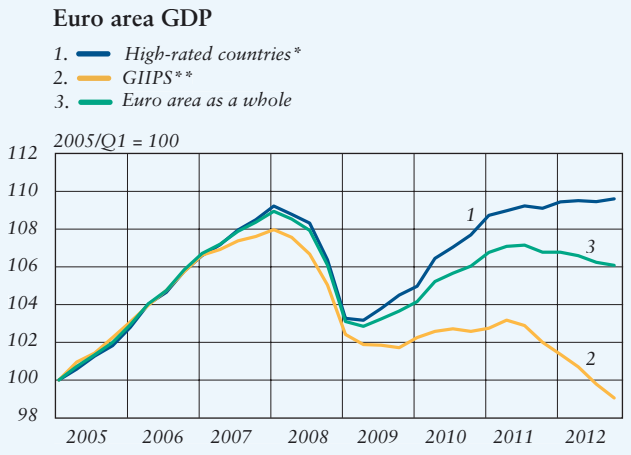
However, there are large differences between euro area countries and regions (Charts 3–6). In the GIIPS countries (Greece, Ireland, Italy, Portugal and Spain), which are at the centre of the debt crisis, GDP contracted by 0.7% on average in the second quarter, whereas the countries with high credit ratings (Germany, France, the Netherlands, Bel-

gium, Finland and Austria) witnessed average GDP growth of 0.1% on the previous quarter. It is particularly noteworthy that GDP in the latter group of countries has exceeded its earlier peak of early 2008, while in the GIIPS countries it has fallen below its post-crisis low of late 2009 (Chart 3).

There are also marked differences in unemployment between the high-rated and GIIPS countries. While the unemployment rate in the former group has already remained fairly stable at around 7% for nearly a year, the GIIPS countries have seen their unemployment rate rise by about 3 percentage points to almost 17% during the same period. By contrast, differences in inflation have remained fairly small (Chart 5). Although weak performance in the GIIPS countries reduces upward price pressures, value added tax increases implemented for fiscal consolidation purposes, for example in Italy, are reflected in the price level.

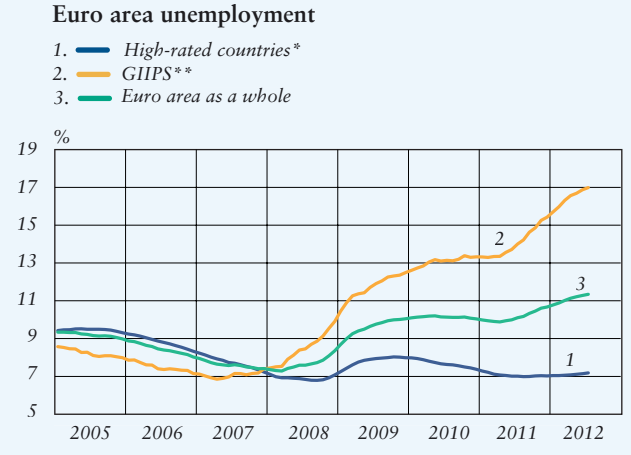
Private sector debt rose substantially more in the GIIPS countries than in many other euro area countries during the years of economic overheating in 2005–2007. As part of disposable income is used for paying down debts, instead of for consumption and investment, economic growth will decelerate. In the GIIPS countries, the deleveraging process is reflected in lower credit volumes. Increased uncertainty has also been visible in declining credit growth in other euro area countries. For the euro area as a whole, the volume of credit has of late remained unchanged (Chart 6). Deleveraging and credit growth are discussed in more detail later in this article (see 'Monetary policy and its transmission').

Chart 3.



* Germany, France, Netherlands, Belgium, Austria and Finland.
** Greece, Ireland, Italy, Portugal and Spain.
Sources: Eurostat and Bank of Finland calculations.

Chart 4.



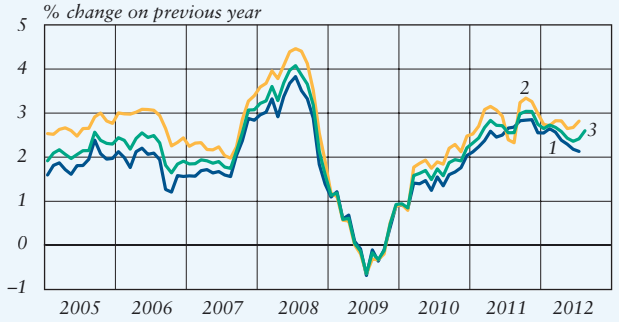
* Germany, France, Netherlands, Belgium, Austria and Finland.
** Greece, Ireland, Italy, Portugal and Spain.
Sources: Eurostat and calculations by Bank of Finland.

Following the favourable early months of the year, US economic growth slowed slightly in the second quarter of 2012 amid increasing uncertainty and subdued employment trends.

Chart 5.

Euro area inflation

1. *High-rated countries**
2. *GIIPS***
3. *Euro area as a whole*

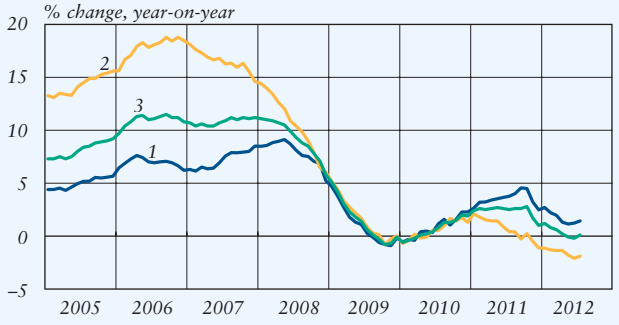


** Germany, France, Netherlands, Belgium, Austria and Finland.*
*** Greece, Ireland, Italy, Portugal and Spain.*
Sources: Eurostat and calculation by Bank of Finland.

Chart 6.

Annual growth in outstanding credit to the public in euro area

1. *High-rated countries**
2. *GIIPS***
3. *Euro area as a whole*



** Germany, France, Netherlands, Belgium, Austria and Finland.*
*** Greece, Ireland, Italy, Portugal and Spain.*
Sources: ECB and calculations by Bank of Finland.

In Japan, GDP growth in the first half of the year was on average in line with forecasts. In emerging Asian economies, developments in the early part of the year were divergent. The pace of growth in China has slowed, but so far largely in line with the Bank of Finland spring forecast. By contrast, growth in India and other emerging Asian economies has eased by more than expected.

Viewed globally, the deteriorating economic situation has been reflected especially in industrial output and world trade indicators (Charts 2 and 7). Accordingly, compared with the previous forecast, the biggest differences relate to world trade, which has been more sluggish than projected in the spring. The volume of imports and exports in both advanced and emerging economies remained flat in the first half of 2012.

Global inflation peaked in autumn 2011 and has subsequently receded. The decline has been due, in particular, to the removal of the inflation effect of higher oil prices and, to a lesser extent, to lower domestic demand pressure as a consequence of lacklustre growth (Chart 12).

Forecast assumptions

The September 2012 Bank of Finland forecast for the global economy is based on the assumption that in the euro area it will be possible to implement political measures that will bring the financial crisis under control and gradually resolve it. This will halt the erosion of economic confidence so as to safeguard the functioning of sovereign debt markets and put an end to the current crisis phase in the economy.

The forecast assumes euro area countries will stick to their promised fiscal adjustment measures and structural reforms for boosting growth. As countries seek to fulfil general government deficit targets in accordance with their stability and convergence programmes, fiscal policy will remain tight.

Such fiscal tightening will impair short-term growth prospects but safeguard governments' debt sustainability over the medium term.

Higher fiscal policy credibility will enable a reduction in the financially stressed countries' overall interest rate levels. This is a prerequisite for a gradual improvement in the position of the private sector. Substantial debt levels in the crisis countries can, however, be corrected only slowly and gradually. Therefore, the baseline forecast does not envisage any rapid, substantial and permanent improvement in markets' risk assessments.

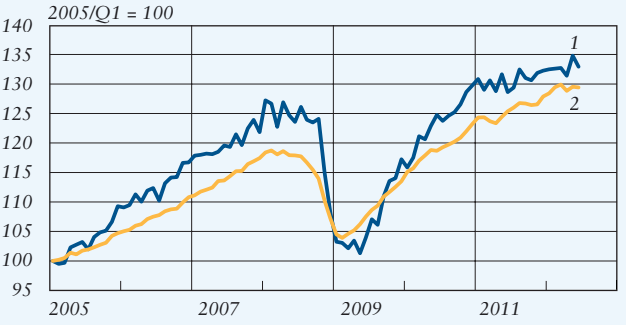
The forecast assumptions are largely in line with available market information. High volatility in market prices is an indication of investor uncertainty. But there are some signs that the uncertainty is receding. Stock prices recovered globally during the summer (Chart 8) at the same time as the VIX index, a measure of stock market volatility, eased. Euro area stock prices are, however, clearly below their peaks reached earlier in the year. Incipient positive signs have also been observed in sovereign debt markets. For example, yield curves for Spanish and Italian government bonds have receded, particularly at two to three-year maturities (Chart 9).

In regard to monetary policy, the September 2012 Bank of Finland forecast for the international economy is based on market expectations derived from three-month interest rate futures on 5 September 2012. Market expectations regarding interest rates, particularly in respect of the euro area, have been revised downward relative to expectations at the time of the March 2012 forecast. Interest rate futures were used, along with uncovered interest rate parity, to derive the exchange rate expectations in the forecast. Accordingly, markets apparently do not expect major changes in nominal exchange rates. The assumptions for crude oil and other commodity prices are based on

Chart 7.

World trade is stagnant

1. World trade
2. Industrial output

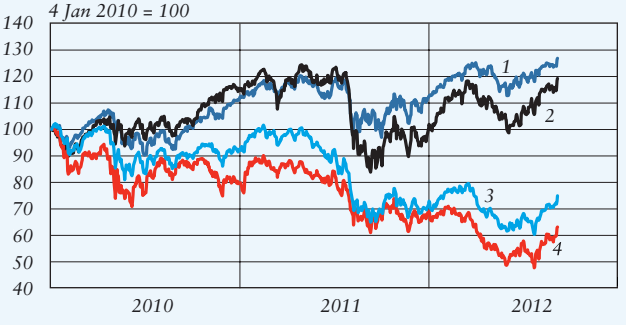


Source: CPB Netherlands Bureau for Economic Policy Analysis.

Chart 8.

Stock prices rallied in the summer

1. United States: S&P500
2. Germany: DAX
3. Spain: Madrid general
4. Italy: Stock Market BCI -index

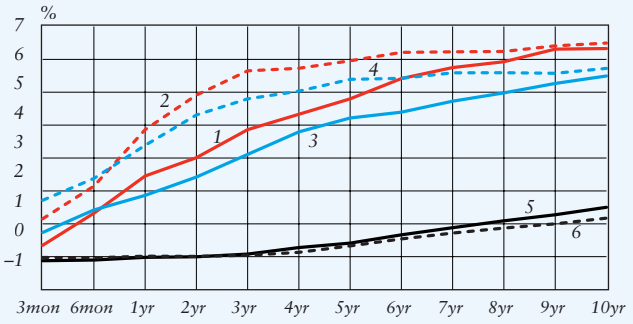


Source: Bloomberg.

Chart 9.

Government bond yield curves decline

1. Spain 6 Sep 2012
2. Spain 1 Jun 2012
3. Italy 6 Sep 2012
4. Italy 1 Jun 2012
5. Germany 6 Sep 2012
6. Germany 1 Jun 2012

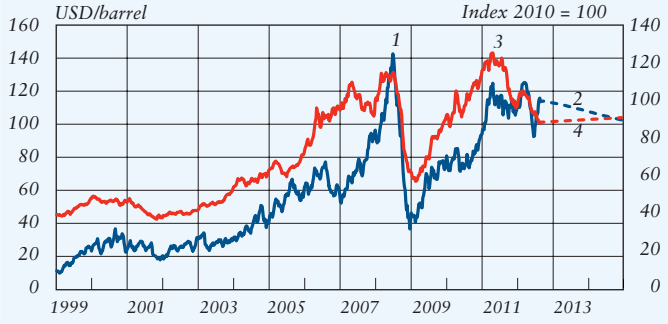


Source: Bloomberg.

Chart 10.

Sizeable changes in commodity prices

1. Crude oil, North Sea Brent, USD/barrel (left-hand scale)
2. Forecast, oil
3. Industrial raw materials excl. energy, USD (right-hand scale)
4. Forecast, raw materials



Sources: Bloomberg and HWWA.

the futures prices prevailing on 5 September (Chart 10).

Euro area outlook weak; United States past slowest phase of growth

According to the September 2012 Bank of Finland forecast for the international economy, world economic growth in 2012–2013 will remain sluggish. For the two years, average annual growth should only be a good 3%, with 2013 in particular being weaker than predicted earlier. This change is due to the recession in Europe dragging on into the latter half of the current year and a moderation in the pace of growth in emerging economies. World trade growth in the forecast horizon will also be more muted than previously envisaged.

The largest downward revisions to the forecast concern the advanced European **EU20** region, which includes, besides the euro area, the United Kingdom, Sweden and Denmark. The **euro area** economy began to contract again during the second quarter of 2012. In the quarters immediately ahead, both private consumption and investment are expected to decline, while fading world trade and many countries' weak competitiveness will constrain export growth. Fiscal tightening and measures to improve the sustainability of sovereign debt will also dampen growth. In addition, the muted performance in the latter half of the year will lower the starting level for the next year. Accordingly, euro area economic activity in 2013 will, on average, remain almost at the same level as 2012, despite expectations of a resumption of growth at the beginning of the year and an acceleration towards the end. Subdued domestic demand and slower global growth will worsen the already weak employment situation in many euro area countries.

In the forecast period, almost all euro area countries will put in place expenditure cuts and tax increases,

which will in the short term reduce public consumption and investment demand as well as household purchasing power. A further challenge for governments is that the predicted recession will hamper government austerity policies, notably in the GIIPS countries. If fiscal consolidation fails to provide positive outcomes sufficiently quickly, the debt crisis may worsen. This is the main downside risk to the euro area forecast. It is therefore important to strengthen growth and growth expectations via structural measures. The risks are further analysed later in the section 'Risks to the forecast weighted on the downside'.

The **United Kingdom** witnessed weaker-than-expected performance in the early part of the year. The recession has already continued for almost a year, accompanied by declining household consumption and exports. Even so, there have been slight improvements in the latest confidence indicators and employment data. Moreover, real household incomes are expected to increase towards the end of the year, driven by lower inflation pressures and the government's 'funding for lending' scheme launched in August. **Sweden** experienced stronger-than-expected growth in the early part of the year, with increased domestic demand in both household and public sectors. Exports and industrial output have also expanded despite appreciation of the Swedish krona relative to the euro. Although growth in the early part of the year has been robust, the deteriorating external environment will also dampen future demand for Swedish exports. The euro area situation will also be reflected in the non-euro area **Central and Eastern European Countries** (CEEC), which have close links with the euro area via both exports and the financial sector.

Following the favourable early months of the year, economic growth in the **United States** decelerated slightly in

Table 1.

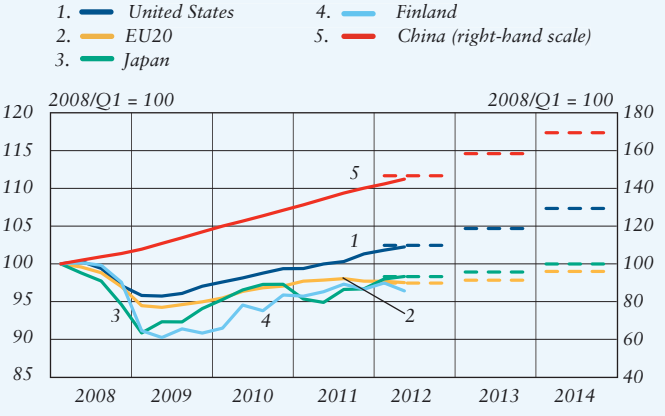
GDP and world trade growth

GDP	*2011*	*2012f*	*2013f*	*2014f*
United States	*1.8*	*2.2* *(2.3)*	*2.2* *(2.6)*	*2.6* *(2.5)*
EU20	*1.4*	*–0.4* *(–0.2)*	*0.4* *(1.0)*	*1.4* *(1.6)*
Japan	*–0.7*	*2.5* *(1.4)*	*0.6* *(1.5)*	*1.1* *(1.7)*
Non-Japan Asia	*7.7*	*6.3* *(6.6)*	*6.6* *(7.2)*	*6.3* *(6.8)*
World	***3.9***	***3.2*** *(3.2)*	***3.5*** *(3.9)*	***3.7*** *(3.9)*
World trade	*6.2*	*3.1* *(3.5)*	*4.8* *(5.8)*	*6.0* *(6.3)*

f = forecast
% change on previous year (previous forecast in brackets)
Source: Bank of Finland.

Chart 11.

Bank of Finland GDP forecasts



EU20 = Euro area, Sweden, Dennmark and United Kingdom.
Sources: National statistical authorities, Eurostat and Bank of Finland.

the second quarter of 2012 amid increasing uncertainty. During the spring and summer, employment growth in particular slowed markedly. Growth in the latter part of the year will remain slightly more subdued than previously forecast, as European problems continue unresolved and uncertainty arising from US fiscal savings measures erode economic growth and, especially, investment.

The **Japanese** economy got off to a good start this year with a growth spurt in the first quarter, based on domestic consumption. In the second quarter, growth moderated but remained positive, mainly on account of a pick-up in investment. The latter part of the year is, however, expected to be a period of very modest growth. Export problems, the petering out of growth effects from post-tsunami reconstruction and a diminishing fiscal stimulus will hold growth to low levels in 2013.

According to the forecast, the pace of growth in **China** will slow to 8% in 2012–2013, and further, to 7%, in 2014. The driving forces behind the slowdown are both cyclical conditions and, over the long term, the huge size of the economy and structural factors. The direct cause of lower growth is the worsening international economic situation, which has curbed China's export growth. Despite a slight easing of monetary policy, the Chinese government has not been able to support growth as previously, because the fallout from the credit bubble caused by the earlier stimulus package and overheating of the property market have tied the hands of policymakers. In the immediate years ahead, growth will be impaired by the country's huge resource needs and structural factors in the economy. For example, as the working-age population starts to decline, this will curtail economic growth. The economic outlook for China is discussed in more detail in the Box 'China's growth model needs to change'.

The **Russian** economy continued its brisk growth in the first half of 2012. Year-on-year GDP growth (4.4%) was almost the same as in 2010–2011 and somewhat faster than forecast back in March. Private consumption still grew rapidly, but other demand components showed a marked weakness. Growth is estimated to slow to a good 3½% in 2012 and 2013 on the back of uncertainties in the world economy and a gradual fall in the price of oil. Private consumption will remain a key factor in economic growth throughout the forecast period.

World trade growth will continue at a very slow pace in the next few quarters. A climate of weak confidence and a higher degree of uncertainty will be reflected in household and corporate purchasing decisions on consumer durables and capital goods. Accordingly, the forecast for world trade has been revised downward in respect of both the current year and 2013. Towards the end of the forecast horizon, however, world trade is projected to achieve its average long-term (1990–2008) growth rate. There will be a moderate correction of global imbalances, as the trade accounts in both China and Japan are expected to be slightly weaker than before.

Box 1.

China's growth model needs to change

China's export- and investment-driven growth model is losing steam and the related risks are increasing. In the years ahead, China's economic growth needs to be increasingly based on households' consumption demand. If an easing of China's economic growth in the coming years would be the result of such a structural change, it would be a welcome development.

Backed by massive stimulus measures, the Chinese economy was able to maintain a growth rate of 9–10% in 2008–2011, even though the world economy ran into major difficulties. China's GDP growth fell to under 8% in the first half of 2012 and, despite stimulus measures, growth for the year as a whole is likely to remain at around 8%. Easing in the pace of China's economic growth gives the markets cause for concern, and many would like to see much stronger growth than that witnessed at present.

Growth is dampened by cyclical and structural factors

The Bank of Finland forecast is based on the assumption that the moderation of China's economic growth to 8% in 2012–2013 and further to 7% in 2014 will be the result of natural developments. Underlying this slowdown is the economic cycle and, over a longer term, the large size of the economy and structural factors. The most imminent reason for the growth moderation is the deteriorating global economic situation, which has weighed on China's demand. Despite a slight easing of monetary policy, the Chinese government has not been able to support growth as much as before, since the consequences of the credit bubble caused by the previous stimulus package and overheating of the real-estate market are still restricting policymakers' room to manoeuvre.

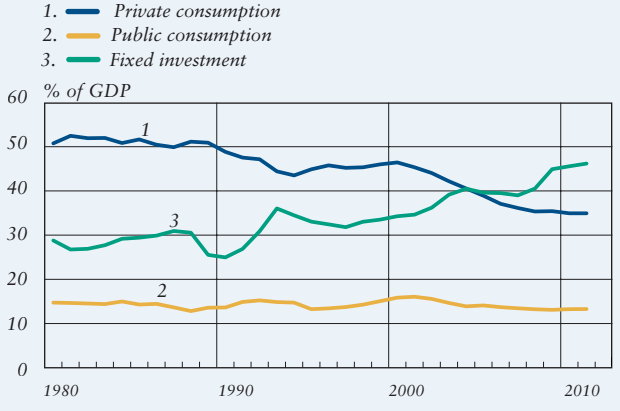
In the years ahead, growth will be slowed by the country's massive resource needs and structural economic factors. Commodity markets will hardly be able to satisfy the kind of demand growth seen recently in China, unless price increases suffice to constrain that growth. Environmental problems too need to be addressed. Economic growth will also be dampened by the ending of the rise in working-age population and actual declines in a few years. Even though there is still a large number of underemployed in rural areas and their employment in rapidly expanding cities will compensate for the fall in labour input, stemming partly from the age structure, improved employment will not support economic growth in future as before.

Excessive investment a risk factor

Perhaps the most prominent reason for the moderation of eco-

Chart A.

Share of investment and domestic consumption in China's GDP, %



Source: CEIC.

nomic growth in the coming years is that China's current investment-driven growth model is waning. Maintaining robust growth in future requires that households' consumption demand succeeds investment as the engine of growth. As a result of the global financial crisis and the investment-driven stimulus policy, China's investment ratio – ie the share of fixed investment in GDP – rose already to 46% in 2011, which is an overwhelming figure by any metric. At the same time, private consumption has dropped to a mere 35% of total demand, which in turn is exceptionally low even in terms of China's own history.

Enormous investment in infrastructure and production machinery have enabled China to take advantage of export markets and to rapidly increase labour productivity in the past decades, but the situation has changed as the country has developed. Already at present, excessive investment gives rise to big problems.

In its most recent China report, the IMF estimates that, while China's investment ratio increased, the capacity utilisation ratio fell from 80% prior to the outbreak of the financial crisis to 60% in 2011. It is therefore likely that there have been numerous poor investments. Considerable excess capacity may lead to bankruptcies and growth in non-performing loans and, through dumping, trade policy problems. With overcapacity, investment may halt abruptly, which would have dramatic implications for economic growth, given the large weight of investment.

Economic reforms support structural change

The global financial crisis has clearly shown that an economy as large as China needs to rely more on domestic markets than export demand. Structural changes in demand can be supported by economic policy. Reform of social security, health and the education system; development and opening up of the service sector to foreign competition; higher dividend payments to state-owned enterprises; and smaller subventions to reduce the incentive to overinvest are reforms that support consumption demand and reduce household saving. Liberalisation of financial markets and development of services would diversify the range of saving and loan products available to households, which would in turn promote consumption. Even though the yuan does not seem to be subject to appreciation pressure at present, should the situation change, a stronger yuan would directly increase households' real income and would be a natural part of structural change in rapidly growing China.

Boosted by positive income developments, household consumption has grown at a brisk pace already for a long time, which is evidenced by double-digit growth rates in retail trade since the latter part of the last decade. Structural change in the Chinese economy will advance specifically via a slowdown in the pace of investment. At the same time, growth in the whole economy will also moderate.

Any signs of change?

China has already taken a number of steps to implement the above-mentioned reforms, but the way ahead is long and changes in demand structure are slow to come. As demand changes, China's production structure will evolve so that the shares of industry and construction in output will decrease and the services sector will become more important. Some signs of change are already visible, as service sector indicators have recently signalled more rapid growth here than in industrial output.

China's current account surplus relative to GDP has fallen from 10% in 2007 to below 3% in 2011. At the same time, accumulation of the huge foreign reserves (now USD 3,240 billion) has slowed, as investment outflows have also increased. However, long-term stabilisation of global imbalances for China's part requires that its policymakers continue with reforms that support structural change.

Following in the footsteps of Japan and Korea

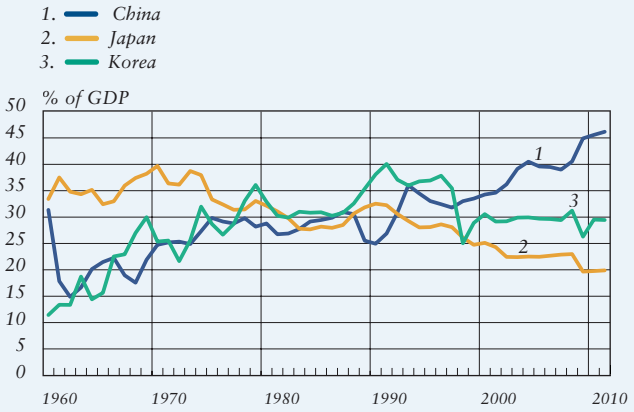
A comparison with growth history in Japan and Korea provides

grounds to believe that the ongoing rapid urbanisation and the rise in labour productivity will ensure robust economic growth for China for a long time. However, considering China's current situation, it is interesting that for Japan and Korea alike the permanent moderation of growth was connected with a falling investment ratio. The importance of global crises in shaking up old structures is also well known. In Japan, structural changes in the 1970s were fuelled by oil crises that rattled the world economy, whereas in Korea the investment ratio fell sharply during the Asian economic crisis at the end of the 1990s.

Economic growth and investment ratios contracted at different rates in Japan and Korea, and it is evident that these do not provide an easy way to forecast the pace of future changes in China. However, the earlier China can reduce its overdependency on investment, the easier the change will be. Moderation of economic growth because of this reduction is welcome for both the Chinese and the global economy.

Chart B.

Investment ratio in China, Japan and Korea



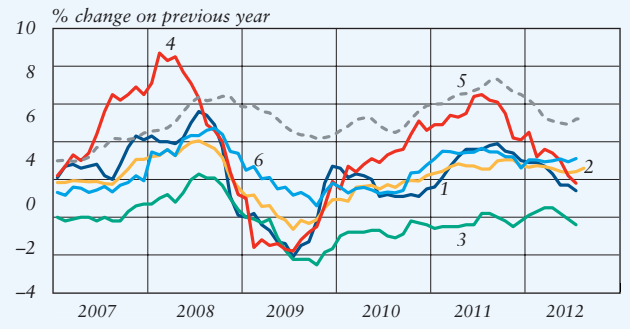
Sources: IMF, World Bank and CEIC.

Subdued economic growth points to moderate price developments

Inflation decelerated considerably in the main economic regions during the first half of 2012. In July, consumer price inflation was 2.4% in the euro area and 1.4% in the United States. In China and Brazil, inflation has levelled off by several percentage points since peaking in autumn 2011. Decelerating inflation has been due, in particular, to the removal of the inflation effect of the earlier rise in oil prices. The easing of more broadly based demand pressures has also been reflected in China's price developments, in particular. In contrast, the deceleration of underlying inflation (excl. energy and food prices) has been less marked in Europe and the United States.

Chart 12.

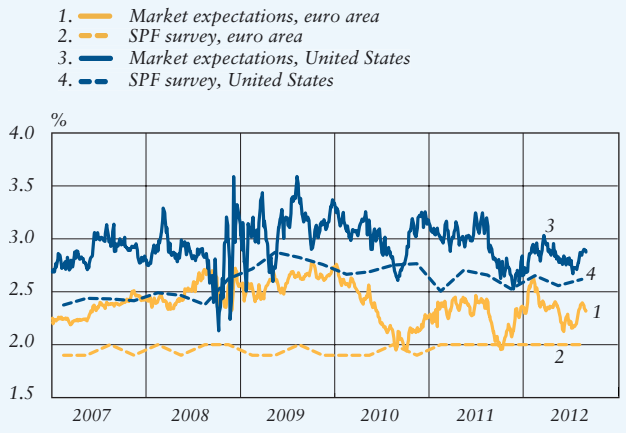
Consumer price inflation on the decline since autumn 2011



Source: National statistical authorities.

Chart 13.

Inflation expectations close to long-term averages



Inflation expectations are based on 5-year inflation swaps.
3-day moving averages, SPF surveys 5 years ahead.
Sources: Bloomberg, ECB, Federal Reserve Bank of Philadelphia and calculations by Bank of Finland.

Oil price changes have been large in the last six months (Chart 10). The dollar price of oil rose to exceptionally high levels in February. At the beginning of April, the trend in oil prices reversed, as the pace of growth in the world economy showed signs of moderation. The price of oil bottomed out at the end of June, at its lowest level since December 2010. During the summer, however, the price of oil rebounded nearly to its spring peak, which was reflected, for example, in a slight increase in the euro area inflation figure for August, to 2.6%. According to oil futures prices, the markets expect the price of oil to decline moderately throughout the forecast period. During the summer, world market prices for food were boosted by exceptional weather conditions, and particularly by drought conditions in the United States. Food price increases may boost inflation pressures in the emerging economies, where food is more heavily weighted in the consumption basket than it is in the advanced economies.

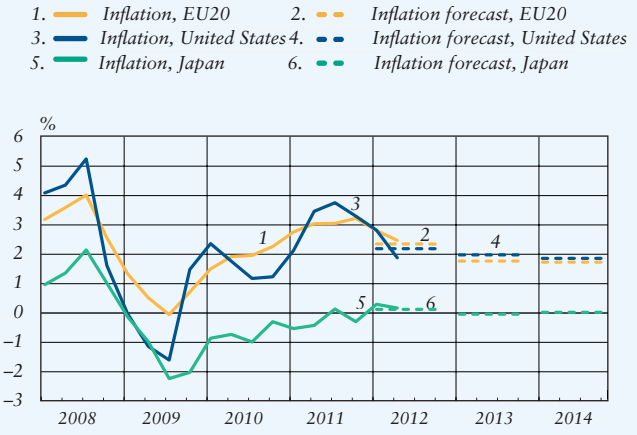
Other commodity prices have fallen (Chart 10).

Long-term inflation expectations derived from market information (5-year inflation expectations in 5 years' time) are currently close to their historical averages, although changes have been considerable over the short term (Chart 13). In surveys of professional forecasters, too, medium-term expectations have remained almost unchanged. According to the Bank of Finland forecast, **inflation in the EU20 countries** will gradually ease, stabilising at around 1.7% in the course of 2013 (Chart 14). The inflation rate will be brought down, in particular, by weak euro area economic performance, which will reduce price pressures from domestic demand. Admittedly, the depreciation of the euro over the summer will put upward pressure on inflation in Europe, at least until the beginning of 2013. **US inflation** is estimated to stabilise at just below 2% during the forecast period. Price pressures stemming from domestic demand will be fairly neutral and rises in commodity prices (particularly recent oil price increases) do not portend an inflation rate significantly higher than 2%. According to the Bank of Finland forecast, **Japanese inflation** should approach zero as the price of oil stabilises. The threat of deflation will therefore continue to remain a topical issue in Japan in the immediate years ahead.

The main inflation risks relate to the global economy heading for a crisis just like late 2008 and early 2009, with the threat of deflation becoming critical. Key to ensuring moderate price developments is that inflation expectations continue to remain close to the central banks' targets in the future, too.

Chart 14.

Bank of Finland inflation forecasts



Sources: National statistical authorities and Bank of Finland calculations.

Risks to the forecast weighted on the downside

The risks to the baseline forecast lie on the downside. The main sources of downside risks relate to the aggravation and prolongation of Europe's problems. The forecast assumes that the measures taken at national and EU levels to stabilise the situation will be sufficient to gradually reverse the negative trend in many European countries and bolster market confidence in Europe's ability to find a sustainable exit from the crisis. Despite these measures, recovery will take a long time and market confidence will be slow to improve.

An important risk is, however, that the adverse developments in the euro area will prevail, making recovery even slower than forecast. A more broadly based spillover of the economic weakness of the GIIPS countries to other euro area countries would impair common euro area crisis management and the implementation of national meas-

ures, which would further exacerbate the negative spiral. Such a negative course of events could be triggered by a weaker-than-assumed economic situation in the financially stressed countries, an increasing loss of confidence in the adequacy of policy measures, and/or an acceleration of capital flight from the financially stressed euro area countries.

It would be particularly difficult to control a situation where an escalating crisis were caused by failures in the implementation of structural changes in the financially stressed economies. Structural reforms are key to putting the countries back onto a sustainable growth path. If structural reforms were to remain undone, for example for political reasons, the crisis countries could remain in the trap of protracted slow growth. Their debt levels would continue to expand at a brisk pace, and they would have even greater difficulties in obtaining market funding. This could cause the countries to slide into a situation where they would be continuously dependent on external support packages. A deteriorating situation in the financially stressed economies would also have an impact on economic trends in the high-rated countries, thus eroding the funding base and credibility of support schemes.

If market confidence in the countries' ability to achieve sustainability in their public finances were to weaken as outlined above, the situation for banks in the financially stressed economies would also soon become uncomfortable. With the aggravation of sovereign problems, capital flight from the financial institutions of these economies would accelerate in an uncontrollable manner. Banks have so far been able to finance their operations by means of secured funding from the private sector and central bank. In a risk scenario such as illustrated above, however, capital flight would be so strong and extensive that banks' collateral assets would be quickly exhausted and there would be few funding opportunities available. They would then sharply cut their lending, which would lead to a steep downturn in the real economy and a further rise in unemployment.

Although the situation in Europe is fragile, better-than-forecast developments are also possible. If Europe is able to formulate a credible crisis management strategy, market confidence may strengthen faster than assumed. From the viewpoint of safeguarding the debt sustainability of the financially stressed countries, it is crucial, on one hand, that the countries themselves are committed to implementing adequate adjustment measures and structural reforms and, on the other hand, that providers of finance ensure the availability of external funding at reasonable cost over the period of adjustment. This would also provide the Eurosystem with an opportunity to take action, whenever necessary, for safeguarding the smooth functioning of sovereign debt markets.

Even the mere accomplishment of a credible crisis management model could calm the markets, put an end to capital flight and lower the costs of sovereign debt. The countries would then have enough time to effect the necessary changes, and improved confidence would be reflected in faster growth, not only in the financially stressed

economies but also elsewhere in Europe and around the world.

The US government fiscal savings programme also brings important downside risks to the growth forecast. The forecast assumes the United States will find a sustainable solution for public-sector adjustments after the November election. The assumption is for fiscal policy to be moderately tightening over the short term, and savings measures to be sufficient over the medium term to restore public-sector debt to a sustainable footing. If, however, stimulus measures scheduled to end at the beginning of 2013 were allowed to cease abruptly, fiscal policy would be tightened sharply, stalling economic growth for the whole of 2013. This would also have significant, increasingly negative impacts on growth in the more export-dependent economies of Europe and Asia.

Despite fiscal policy uncertainties, positive signs are also visible in the US economy. The worst phase of debt restructuring in the private sector is over and the banking sector's balance sheets are in a better shape than before. The most important positive risk to the forecast is, in fact, related to better-than-projected near-term developments in the housing market, which regained momentum in the spring. If interest rates remain low, the abundant pent-up demand in the housing market may be unleashed, considerably boosting housing prices. This could trigger a virtuous circle where households' improved wealth positions enable higher consumption and favourable labour market dynamics. Positive trends in the world's largest economy would be felt elsewhere in the world, too, in the form of export growth and a calming of the financial markets. This would also significantly help a Europe that is struggling to tackle its debt problems.

Monetary policy and its transmission

Monetary policy

Monetary policy close to the zero lower bound

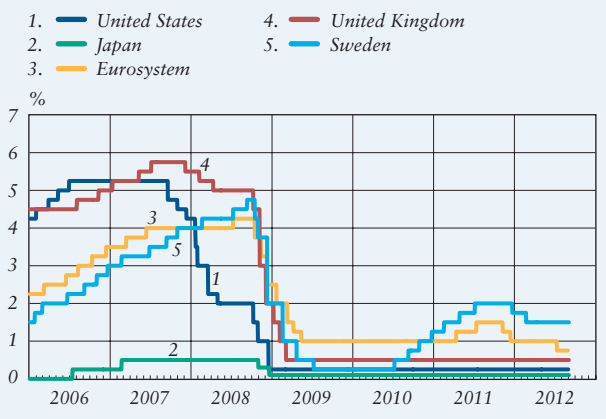
The world's major central banks have relaxed their monetary policies during the course of 2012 in response to a global deceleration in the pace of inflation and a weakened economic outlook.

In July, the Governing Council of the European Central Bank lowered its main policy rate from 1% to 0.75% (Chart 15). In addition to this, the Governing Council has during the course of 2012 extended the non-standard measures that have supported both the lending capacity of a banking sector weakened by the debt crisis and the trans-

Chart 15.

ECB Governing Council lowered policy rate in July

Central bank rates



Source: Bloomberg.

mission of monetary policy in the euro area. At its September meeting, the Governing Council also decided on additional non-standard monetary policy measures. These are dealt with in Box 2: 'Eurosystem defines its role in managing the sovereign debt crisis'.

Non-standard measures have also been extended during the course of the year in the United States, Japan and the United Kingdom. In these countries, policy rates have already been close to zero for a more extended period. Policy rates in the United States and the United Kingdom were lowered close to zero soon after the global financial crisis came to a head in the second half of 2008. In Japan, interest rates had already been extremely low for a long time due to the country's problems with deflation.

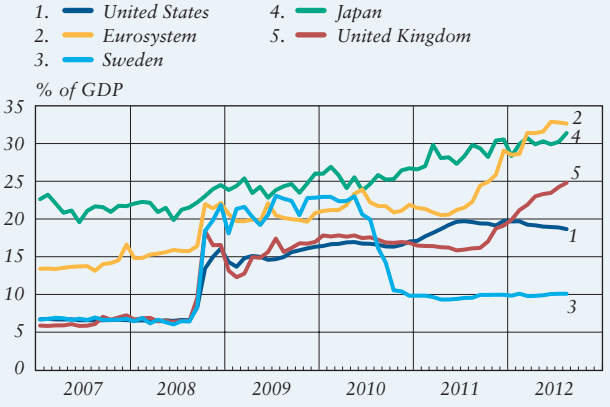
Weakening growth and receding inflation pressures have also been reflected in 2012 in a lowering of interest rates and minimum reserve requirements in many emerging economies, such as China, India and Brazil. China's central bank lowered its key policy rates in June and July by a total of 0.50 percentage points, bringing the annual deposit rate down to 3%. During the first half of 2012, China's central bank lowered the minimum reserve requirements for large banks by a total of 1 percentage point to 20%.

The Eurosystem balance sheet has grown by around 4 percentage points relative to GDP during the course of 2012 (Chart 16). This reflects banks' increased demand for central bank money, which in turn is a sign of tensions on the financial markets and banks' difficulties in acquiring funding, particularly in those euro area countries whose economies are performing poorly. The growth in the balance sheet is due particularly to two especially long refinancing operations in which banks borrowed against collateral a total of around EUR 1,000 billion in December and February for approximately three years. In addition, the ECB Governing Council halved the minimum reserve requirement for banks to 1% (around EUR 100 billion) from January 2012 and relaxed the eligibility criteria for collateral to be accepted in monetary policy operations. These measures were aimed at easing the financial market tensions and thereby supporting corporate and household access to funding. The operating environment for banks in the euro area nevertheless remains challenging.

In Japan and the United Kingdom, asset purchase programmes have been extended during the course of 2012, which is reflected in growth in the GDP

Chart 16.

Extension of non-standard measures reflected in central bank balance sheets



Sources: National statistical authorities, Eurostat and Bloomberg.

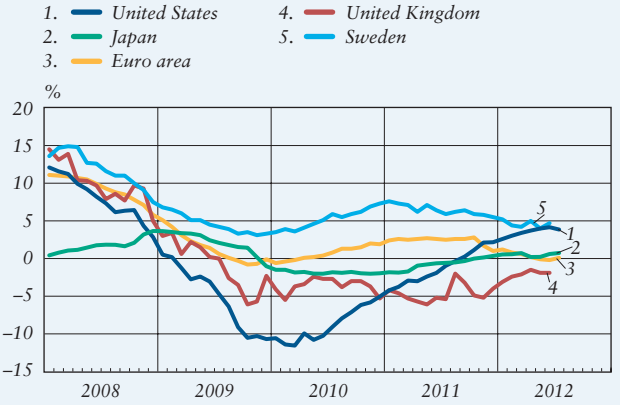
ratios of these countries' central bank balance sheets (Chart 16). In the United States, the Federal Reserve has, under its maturity extension programme (also known as 'operation twist'), sold government securities of short maturity and purchased ones of long maturity with the aim of reducing the longest interest rates and thereby bolstering economic growth. This operation has not swollen the Fed's balance sheet.

The emphasis in the measures taken by central banks during 2012 has been on communication and the precise formulation of objectives. In the United States and Japan, a specific inflation target of 2% was set. The Bank of Japan will, however, be aiming initially for inflation of 1%, as the country's economy has in many years suffered from deflation. In its own statements, the Federal Reserve has estimated that interest rates will remain exceptionally low for a prolonged period ('at least until the end of 2014') if the economy continues to perform as weakly as expected. By thus indicating in advance its view of the future course of its policy rate, the Fed is seeking to guide market expectations in order to achieve its monetary policy objectives.

Despite the relaxation in monetary policy, private credit growth has been sluggish in many of the advanced economies. In the euro area, growth in the private sector loan stock slowed during the spring and came to a complete standstill in the summer months. In the United Kingdom, the private sector loan stock has contracted further in 2012, in contrast to the United States and Sweden, where the stronger performance of the economy has been reflected in loan stock growth of around 4–5%.

Chart 17.

Private sector loan* growth fades in euro area



**Loans granted by banks to companies, households and non-banking sector MFIs. Different countries' loan concepts are not entirely comparable. US data adjusted in respect of balance sheet transfers.*
Sources: Countries' central banks and the ECB.

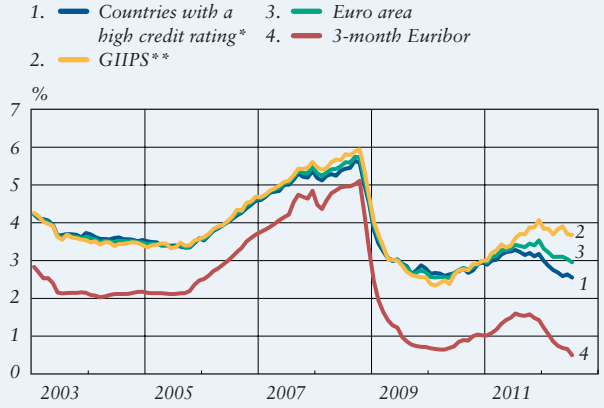
Monetary policy transmits unevenly to companies and households in different euro area countries

The Eurosystem's monetary policy measures have over the course of 2012 produced a clear decline in short-term money market rates. For example, the 3-month Euribor has come down from around 1.3% at the beginning of the year to around 0.3% in August (Chart 18). The disturbed state of the government bond markets and prolonged weakness of the economy have, however, clearly tightened financial conditions in the euro area. This is reflected, for instance, in the fact that interest rates on private sector loans have not fallen by as much as short-term money market rates like the 3-month Euribor. Financial conditions have tightened

Chart 18.

Monetary policy relaxation not visible in GIIPS countries' private sector loan interest rates

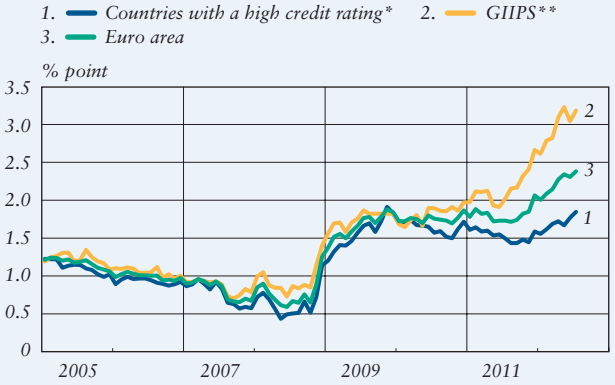
Interest rate levels and 3-month Euribor
(corporate and housing loans***, new agreements)



* Germany, France, Netherlands, Belgium, Austria and Finland.
** Greece, Ireland, Italy, Portugal and Spain.
*** Variable interest housing loans linked to reference rates with a rate fixation period of at most 1 year.
Source: European Central Bank.

Chart 19.

Interest rate spreads of new corporate loans relative to 3-month Euribor also grown in countries with a high credit rating



* Germany, France, Netherlands, Belgium, Austria and Finland.
** Greece, Ireland, Italy, Portugal and Spain.
Source: European Central Bank.

most in the GIIPS countries, where the debt crisis has weakened the position of the banking sector. In these countries, the general relaxation of monetary policy has barely reduced the interest rates payable on new private sector loans during 2012 (Chart 18). Moreover, access to credit in the GIIPS countries has deteriorated, and the terms of credit have become tighter. At the same time, in countries with better-performing economies, like Germany and France, the interest rates payable on new corporate and household loans are below the euro area average.

An examination of the interest rates levied on companies and households for new bank loans relative to the 3-month Euribor (interest rate spread/risk premium) shows the extent of monetary policy transmission from the central bank policy rate via money market rates to the interest payable on new corporate and household loans (Charts 19 and 20). Relative to 2011, interest rate differences have clearly grown across the entire private sector. Particularly in the case of corporate loans, they have continued to grow during 2012, and as yet there are still no clear signs of a turnaround.

The relaxation of Eurosystem monetary policy has been transmitted only partially into the interest rates payable by households and companies in the crisis countries. In the first half of 2012, the interest rates on new corporate loans in Portugal and Greece have been particularly high (at a full 6%), whereas the euro area average has come down to around 3%. Interest rates on corporate loans are also higher than the euro area average in Spain, Italy and Ireland (at almost 4%). Thus, the monetary policy stimulus to domestic demand has been

Box 2.

Eurosystem defines its role in managing the sovereign debt crisis

Market concerns over the debt sustainability of the Spanish and Italian governments and the entire future of the euro area grew through the late spring and summer. The Governing Council of the ECB indicated at its August meeting that the risk premia on the government bonds of several countries have grown and financial market fragmentation is preventing monetary policy from being effective. The Governing Council emphasised that the portion of the growth in risk premia that is due to fears over the possible break-up of the euro area is not acceptable, and the Eurosystem is ready intervene forcibly in this matter. The Governing Council stressed that the euro is irreversible.

At its September meeting, the Governing Council decided the main features of the new Outright Monetary Transactions (OMT) programme. As reducing risk premia depends primarily on the actions taken by euro area governments to restructure their economies and achieve the necessary savings, a necessary condition of action by the Eurosystem is the conditionality that attaches to programmes under the European Financial Stability Facility/ European Stability Mechanism (EFSF/ESM). This can be realised through either a full macroeconomic adjustment programme or a precautionary programme, provided they include the possibility of primary market purchases by the EFSF or ESM.

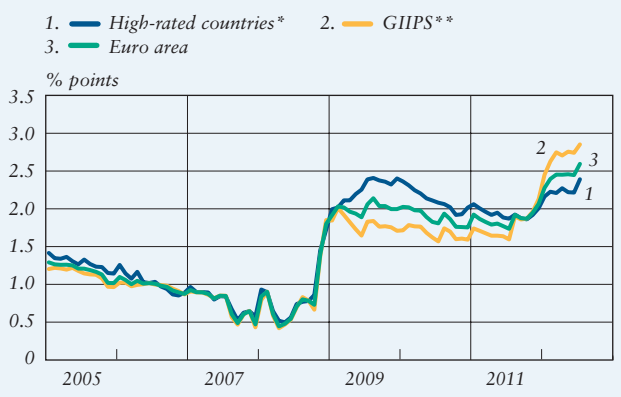
The Governing Council will decide on the start, continuation and suspension of possible OMTs independently and in accordance with its monetary policy mandate. It will consider OMTs only to the extent that they are warranted from a monetary policy perspective and as long as programme conditionality is fully respected. OMTs will be terminated once their objectives have been achieved or if there is non-compliance with the conditions of a programme.

No ex ante quantitative limits are set on the OMTs. Transactions will be focused on the shorter part of the yield curve, and in particular on sovereign bonds with a maturity of between one and three years.

The OMT programme will not increase the quantity of money in the euro area, as the liquidity created by the transactions will be fully sterilised.

Chart 20.

Interest rate spreads on new housing loans* relative to the 3-month Euribor are much larger than in 2011**



* Germany, France, Netherlands, Belgium, Austria and Finland.
** Greece, Ireland, Italy, Portugal and Spain.
***Variable interest housing loans linked to reference rates with a rate fixation period of at most 1 year.
Source: European Central Bank.

weaker in the GIIPS countries than would be hoped for in light of the poor state of their economies.

Although interest rate differences have grown most in the GIIPS countries, those of countries with high credit ratings have also grown relative to 2011. Growth in interest rate spreads is a typical feature of an economic downswing. As the economic situation deteriorates, so also does the ability of companies and households to service their loans; to compensate for this, banks charge higher interest payments to cover the risk of default.

As well as their effects on the euro area in general, the sovereign debt crisis and financial market tensions have weakened the position of banks and raised their funding costs. This is another factor contributing to the growth in banks' loan margins. From the perspective of monetary policy transmission, it is important that banks strengthen their balance sheets. This is vitally important for achieving sufficient lending in the economy and the normalisation of all funding channels.

Fiscal policy

The present situation and outlook for public finances

The sovereign debt crisis is essentially about weakened confidence in the ability of governments to service their debts. A restoration of confidence will require a readjustment of revenues and expenditures, economic growth and a healthy banking system. These are all closely interlinked, which poses major challenges for economic policymakers.

In addition to the crisis countries per se, a swollen government debt also restricts the scope for fiscal stimulus in many other countries of the euro area. Euro area fiscal policy will, therefore, remain tight in the latter part of 2012 and through 2013. On the other hand, weaker-than-forecast economic growth will make it harder to achieve the general government deficit targets.

The weakened state of many banks also means additional problems for governments. During the summer, the Spanish and Cypriot banking systems' need for support grew so large that the countries were forced to apply for financial assistance from the European Financial Stability Facility (EFSF). In July, the Eurogroup decided in principle on a maximum EUR 100 billion loan to Spain for the recapitalisation of the country's banks. The precise terms and scope of the financial assistance package are currently still unclear. The fund-

ing will, however, be channelled via the Spanish government's Fund for Orderly Bank Restructuring (FOBR), and it will be conditional.

Fiscal policy challenges are not restricted to the euro area. Of the major economies, the scope for fiscal stimulus is also limited in the United States, United Kingdom and Japan. These countries' general government deficits are at least twice the euro area average (see chart 21), and they also have substantial debt ratios.

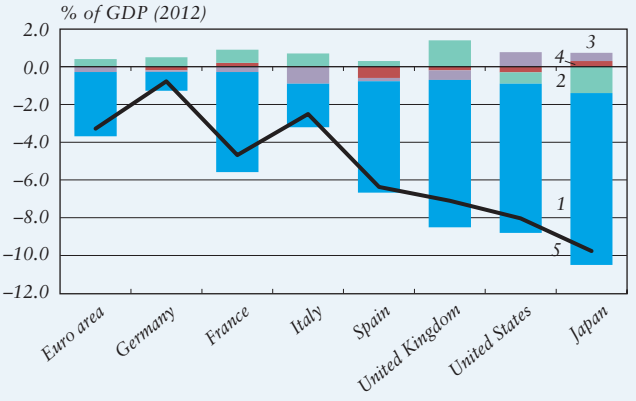
In the Bank of Finland's international forecast published in spring 2012 it was assumed that euro area countries would largely meet their general government deficit targets for 2012–2013 in line with the stability and convergence programmes. This would now appear to be fairly much the case in 2012 for the euro area on the whole and in its largest members, with the exception of Spain, whose targets were eased during the summer. In April, Italy also announced minor changes to its targets. Ireland's and Portugal's fiscal consolidation and structural adjustment programmes are progressing reasonably according to plan, but the situation in Greece remains very uncertain.

In contrast, achievement of the general government deficit targets for 2013 will be more difficult due to the deteriorating economic cycle. Accordingly, in the Bank of Finland's latest forecast, the general government deficit for the euro area is expected to remain around 3.3% of GDP, contracting to 2.8% of GDP in 2014 on account of an improved economic climate. Even to achieve these outcomes, Spain and

Chart 21.

Cyclical situation reflected in deficits

1. *Budget deficit, European Commission's autumn forecast 2011**
2. *Impact of discretionary measures*
3. *Impact of economic cycle*
4. *Impact of other factors*
5. *Budget deficit, Bank of Finland's autumn forecast 2012*



** For the United States and Japan, IMF autumn forecast 2011.*
Sources: European Commission and IMF forecasts and calculations by Bank of Finland.

France in particular will require new consolidation measures. Indeed, in July 2012, Spain announced EUR 65 billion worth of new consolidation measures extending ahead to 2014. France has still to specify what measures it will take to achieve the targets of the stability programme.[1]

All in all, the picture of the present year's general government deficits in the large euro area countries, the United Kingdom, United States and Japan has changed little since the autumn 2011 forecasts (Chart 21). Discretionary measures, depicted by the change in the cyclically adjusted primary balance, have reduced the deficits in the large euro area countries and the United Kingdom. The weakened expectations for economic

[1] These measures have not been taken into account in a precise form in the Bank of Finland's baseline forecast, as both the measures themselves and their timing remain surrounded by uncertainties.

growth will, however, reduce the impact of discretionary measures, and changes relative to the previously forecast deficits will, taken as a whole, be minor.

Public finances and banking crises

The weak position of the banks has, during the current debt crisis, had a negative impact on the general government balance in many countries. Banking crises weaken the public finances via a number of different channels, and direct support for the banks generally constitutes only a small part of the overall costs of the crises. The largest impact on the public finances almost always comes from the decline in economic activity.

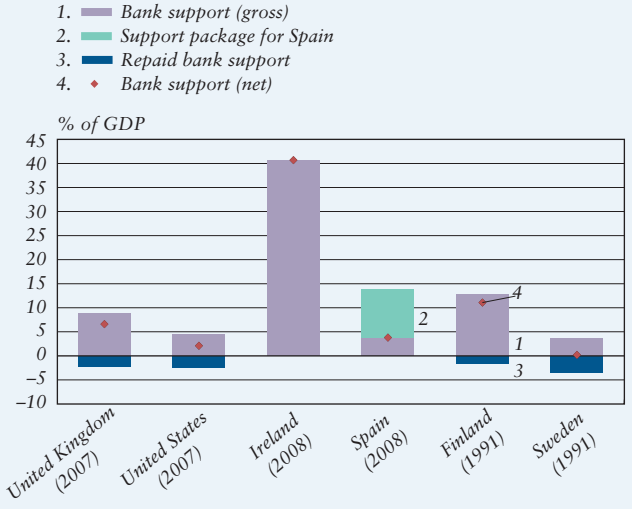
A banking crisis normally begins during a strong economic downswing or recession, which the crisis then feeds. With growing loan losses, confidence in the banking sector declines, which can lead to a flight of deposits or market money. In addition, declining asset prices weaken bank balance sheets. As a consequence of the crisis, the supply of bank lending contracts, causing a substantial weakening of economic growth. Weak economic growth, in turn, leads to a decline in tax revenues and increase in public expenditure, causing the public debt ratio to begin to grow. The collapse in tax revenues can be particularly severe if part of the banking crisis is the bursting of an asset price bubble, leading to a contraction in housing investment and the construction sector.

Banking crises cause a front-loaded increase in direct government expenditure. The direct costs of the present banking crises in Ireland, Spain, the United Kingdom and United States can be compared with the costs of the Finnish and Swedish crises of the 1990s (Chart 22). In addition to the gross costs, our comparison also examines the net costs, expressed as the difference between the gross costs and the amount recovered within five years.[2]

The present crisis has been particularly expensive for Ireland, where the direct gross costs have been equal to approximately 40% of GDP. If Spain has to use the whole of its EUR 100 billion support package, together with the sums already paid, the direct gross costs (relative to GDP) of the banking crisis would grow to match the scale of Finland's costs in the banking crisis of the 1990s. US (5%) and UK (9%) costs have been considerably smaller.

Chart 22.

Direct costs of banking crisis vary



Net costs: Finland and Sweden: 5 years from start of the crisis; others: to date.
Source: IMF: Laeven – Valencia (2012).

[2] This analysis is based on the IMF study Laeven & Valencia (2012). IMF WP 12/163.

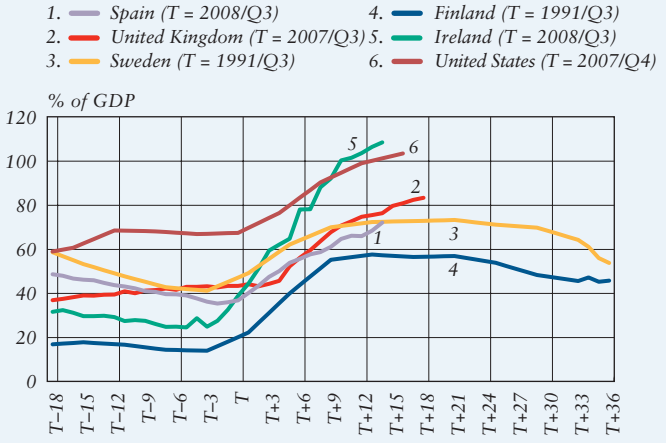
In Finland, the gross costs of the banking crisis in the early 1990s were equal to around 13% of GDP, and in Sweden, to around 4%. In the Swedish banking crisis, most of the direct costs were recouped within 5 years of the start of the crisis. In Finland, the bank support recouped within 5 years was less, but if we consider the amount repaid to the government over 10 years, the figure is much greater, at around 40% of the total support to the banks.

The direct costs of the present crises would appear to be relatively small in the United States and United Kingdom. This is explained by the vigorous fiscal and monetary policy stimulus measures undertaken in these countries. The other side of such expansionary fiscal policy is, however, a strong growth in the general government debt-to-GDP ratio (Chart 23). Indeed, Reinhart and Rogoff have in their study stressed the broader costs of the banking crisis beyond merely the direct support given to the banks.[3] The increase in public debt sets an upper limit to the costs of banking crises. As we can see from the chart (Chart 23), the GDP ratio of public debt is growing explosively as a result of the financial crisis. The increase in the GDP ratio of public debt due to causes other than direct support to the banks as a result of the crisis has varied between 21 and just under 32 percentage points. The costs have been lowest in Sweden and highest in the United States, Spain and the United Kingdom. In Ireland, the costs have been a little lower. In Finland, the equivalent growth in debt was around 24 percentage points.

[3] Reinhart & Rogoff (2009) This time is different.

Chart 23.

Public debt grows in a financial crisis



T = when the financial crisis began. On the horizontal axis, time is presented in quarter years.
Sources: ECB and European Commission.

Alternatives for cutting the fatal link between government finances and the banks

Above, we have examined how a banking crisis weakens the public finances. At the same time, confidence in the banking sector is in part based on the strength of the public finances, because in the final analysis it is government that has to bear the responsibility for the deposit insurance system and support for banks in difficulties. Moreover, the banking system typically owns domestic government bonds, which, in the case of Greece, for example, led to substantial losses for Greek banks. Due to these factors, instability in the public finances is reflected in a loss of confidence in the banking sector as well. This interplay means there is a fatal link between banks and the state that is hard to break.

One way to reduce the probability of a banking crisis and hence the fatal

Box 3.

Banking union includes many elements

The conclusions of the June euro area summit included the objective to establish a single supervisory mechanism, involving the ECB, for banks in the euro area. This single supervisory mechanism has been referred to in discussions as 'banking union'. At its simplest, banking union means the transfer of banking supervisory powers from the national level to the union level. Besides banking supervision, the concept also includes other important elements, which are discussed below.

Although the European supervisory framework was reinforced with new institutions in 2010, responsibility for banking supervision still lies with the national authorities of Member States. The task of the European Banking Authority (EBA) is to promote the convergence of national enforcement of banking regulation and supervision in the Member States and to resolve possible disputes between national supervisors, but it does not have direct powers over banks. To enhance the supervision of cross-border banking groups, a bank's home-country authority is obliged to establish supervisory colleges to ensure the exchange of information and cooperation between supervisors. However, the financial crisis revealed that the current supervisory system is not efficient enough to respond to the challenges posed by a strongly integrated banking system.

The motivation behind banking union is the need for more efficient banking supervision in Europe. Banking union is also seen as a way of resolving the key structural problem of monetary union: the interdependence of banks and governments. The crisis has radiated strongly throughout the banking systems of the problem countries as confidence has faltered in governments' ability to act as a last-resort guarantor of banks' operations and depositors' assets. To break the interdependence between Member States and banks, the transfer of supervisory powers is not enough; instead, banking union also needs centralised mechanisms in other areas, such as crisis resolution powers concerning distressed banks, and deposit guarantee schemes.

The task of centralised supervision of euro area banks should be conferred upon the ECB, in line with the summit conclusions. In banking supervision, the key issues to be resolved are the extent of centralised supervision and the division of tasks between the ECB and national supervisors. The fairly common view is that centralised supervision should cover at least large multinational banking groups whose problems could immediately jeopardise the functioning of the entire financial system in the EU. These banks can be considered as systemically important banks in the euro area. Identifying them is a fairly complex process, but it can be based on the principles for identifying global systemically important banks (G-SIBs), as adopted by the Basel Committee on Banking Supervision.

There are, however, good reasons to extend the ECB's supervisory powers to cover all euro area banks. This would ensure harmonisation of supervisory practices across the euro area and prevent competitive distortions caused by differences in supervisory practices. It is, however, clear that day-to-day supervision of all euro area banks centrally by the ECB is not a realistic option. This problem can be resolved by delegating the day-to-day supervision of local banks to national supervisors. It may, however, be appropriate to maintain the supervision of certain banks with national importance at the ECB, for financial stability or level playing-field reasons; such banks can be chosen on a case-by-case basis.

Notwithstanding the centralisation of supervisory

powers, it is important that the work and local expertise of national supervisors be utilised in the supervision of large multinational banks. To this end, the EU already has in place cooperation mechanisms (supervisory colleges) that can be utilised by strengthening them as appropriate.

In addition to supervisory powers, the powers of the authorities to intervene in the operations of distressed banks subject to joint supervision should also be centralised. A joint crisis resolution authority would be better equipped than national authorities to take into account the euro area perspective, and also better equipped to intervene at an early stage in the problems of distressed banks than Member State authorities that operate under the pressure of national interests. A cross-border perspective and early intervention are critical prerequisites for minimising the costs on taxpayers of banking crises. To cover the direct costs of crisis resolution, funds can be accumulated in a special resolution fund by collecting contributions from banks.

An important regulatory initiative promoting the crisis resolution work of banks is the initiative on bail-in instruments. The objective is to create a credible regulatory framework and practices for committing unsecured creditors to share the burden of costs related to bank failures, either by debt write-down or by converting it into equity. If this objective is achieved, it would provide the authorities with the tools for crisis resolution in respect of distressed banks without resorting to government support measures, thereby significantly minimising the costs to taxpayers of future banking crises.

The third important element of banking union is deposit guarantee. Certain features of deposit guarantee schemes have already been standardised at EU level by Directives, but there are still significant differences between Member States in terms of the schemes. Banking union requires a stronger harmonisation of deposit guarantee, at least involving banks that are subject to single supervision. It is appropriate that a harmonised deposit guarantee regime is up to a certain amount an ex ante funded system based on banks' contributions.

Even extensive regulatory and supervisory reforms are unlikely to completely eliminate large systemic banking crises, the handling of which may still require government support measures. Even under banking union, these situations can be handled case by case, using discretion and taking competition issues into account, in accordance with standard political decision-making procedures, utilising pan-European crisis management mechanisms, such as the European Stability Mechanism (ESM), if necessary.

link between banks and the state is to limit risk-taking by the banks. For just this reason the activities of deposit banking and investment banking were separated by law in the United States from the 1930s all the way through to the 1990s. The same objective has been pursued in the United States recently through promotion of the Volcker rule, according to which banks would not be permitted to engage in securities trading on their own behalf. In the United Kingdom, meanwhile, there has been discussion of the memorandum of the Independent Commission on Banking (the Vickers Commission), which recommends the separation of retail banking from banks' other financial activities. Increasing banks' equity capital in line with Basel III represents another option for reducing banks' levels of risk.

In the euro area, a long-term solution to the fatal link between banks and the state that has been planned is the establishment of banking union. According to the European Commission's 'vision report' published in June 2012, banking union could embrace common banking supervision, deposit insurance and resolution. Commonly funded deposit insurance would reduce the fatal link between an individual country's banking sector and the home country, as the final responsibility for deposit insurance would be divided between several countries. The Commission will be presenting a proposal on a common banking supervision mechanism to the European Council, which will consider the proposal by the end of the year.

Structural policy and macroeconomic stability in Europe

Unwinding of private sector debt accumulation has begun

The accumulation of macroeconomic imbalances in the first decade of the new millennium is one of the main factors behind the ongoing debt crisis. In those euro area countries that now find themselves in difficulties, the crisis was preceded by deteriorating competitiveness, a burden of external debt that had grown heavy following a sustained large current account deficit and, in many cases, overheating in the housing market and construction sector (Chart 24).

The differences between euro area countries are also reflected in financing conditions. Particularly in the GIIPS countries, the rise in the cost of finance has forced countries to accelerate their adjustment processes.

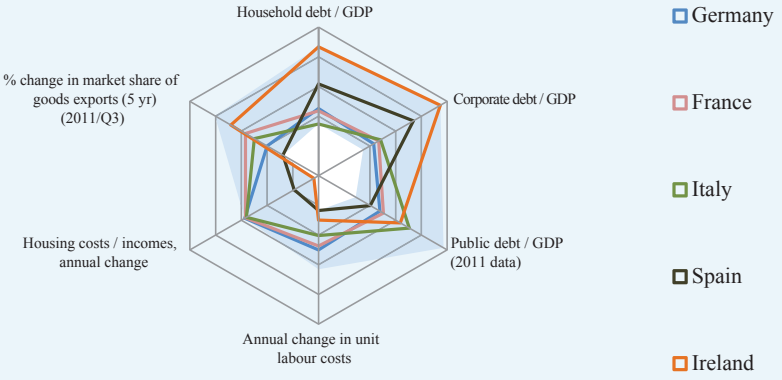
The GDP ratio of private sector[4] debt has as a whole evened out in the euro area, and annual growth in debt levels has faded (Chart 25). In part, this is a reflection of the tightening of financing conditions in the GIIPS countries, but it is also a sign that the process of deleveraging has begun. Overindebted economies have been forced to tighten consumption and reduce their debt levels. In the short term, the adjustment will weaken the performance of their economies, but for the long term the reduction in the level of debt is essential to bring the economy back onto a sustainable growth path.

In its monitoring of macroeconomic developments, the European

[4] Here, household and corporate debt relative to GDP, excluding the financial sector.

Chart 24.

Factors contributing to macroeconomic imbalance



The variables have been chosen at our discretion. The blue area depicts the maximum-minimum range and includes Spain, Ireland, the United Kingdom, Italy, Greece, Portugal, France, Germany and Finland. The closer to the outer edge a variable is, the larger the observed value. The corporate debt/GDP figure for Ireland is from the third quarter of 2011, due to a statistical revision. The housing price index for Italy is from the second quarter of 2011.
All observations are from the first quarter of 2012, except where otherwise stated.
Sources: European Central Bank, Eurostat, IMF, BIS and Bank of Finland.

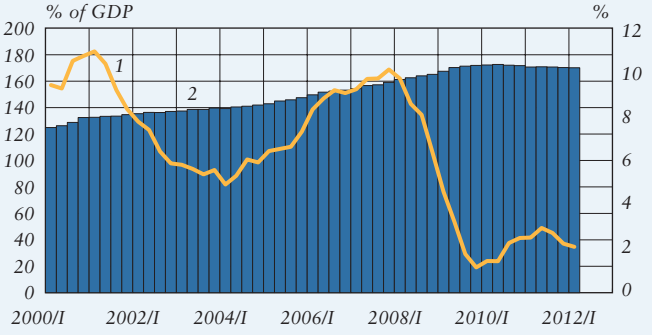
Commission is beginning to devote particular attention to private sector debt when the level of debt crosses a threshold of 160% of GDP. In most euro area countries this threshold has already been crossed. There are, however, considerable differences between countries. Private sector debt exceeds 200% of GDP in, for example, Ireland, Portugal, Sweden, the United Kingdom and Spain. Since 2009, there has been a turnaround in private indebtedness in these heavily indebted countries, and the levels of debt have come down. However, at the same time the level of public sector debt has risen. This is not unusual, as the adjustment of private sector balance sheets in the wake of financial crises is typically accompanied by a related growth in public debt (Chart 26).

The process of adjustment in European economies has, however, only just begun. If we consider previous financial crises, the adjustment can be expected to last for several years yet. Historically, post-financial-crisis reduction in private debt has taken an average of 7 years, beginning around 2 years after the crisis

Chart 25.

Euro area private sector debt*

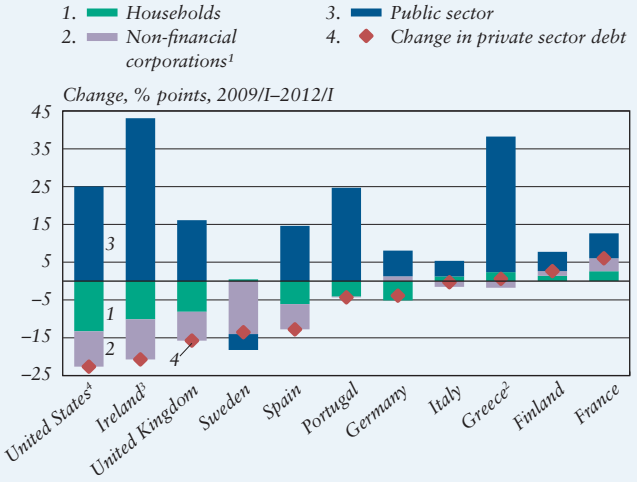
1. *Private sector debt / GDP (left-hand scale)*
2. *Annual growth in private sector debt (right-hand scale)*



** Private sector debt = household and corporate loan debt and bonds.*
Source: European Central Bank.

Chart 26.

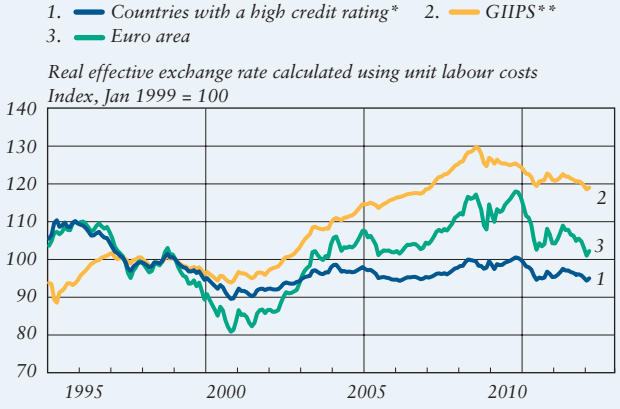
Private sector debt-to-GDP ratio has begun to contract, particularly in the most heavily indebted countries



[1]*Private debt excluding the financial sector and non-financial corporations' equity capital.*
[2]*Due to a statistical reform, the change in Greece's household and corporate debt has been calculated for the period 2010/Q2–2012/Q1.*
[3]*Due to a statistical reform, the change in Ireland's corporate debt has been calculated for the period 2009/Q4–2011/Q3.*
[4]*US data is for the period 2008/Q4–2012/Q1.*
Source: SDW (IAEQ).

Chart 27.

Price competitiveness gaps were growing until the financial crisis



** Germany, France, Netherlands, Belgium, Austria and Finland.*
*** Greece, Ireland, Italy, Portugal and Spain.*
Source: Eurostat.

breaks out.[5] In the United States, the adjustment of private sector debt levels began already in 2008. By mid-2012, the GDP ratio of private sector debt had been reduced by 23 percentage points. In Ireland, the corresponding debt ratio has contracted 21 percentage points, while in the other highly indebted euro area countries the process of adjustment is still at an early stage (Chart 26)

Crisis countries' competitiveness has begun to improve

Cost levels rose in the GIIPS countries faster than in competing countries during the euro era prior to the financial crisis. This weakened the GIIPS countries' competitiveness and contributed to the development of imbalances. By 2009, Spain, Italy and Greece, in particular, had lost their competitiveness[6] at the same time as German and Swedish competitiveness was improving. Differences between European countries in competitiveness trends are also reflected in price trends. Until 2009, consumer price inflation in most of the GIIPS countries was much higher than in, for example, Germany, France and Finland. At the same time, particularly in Ireland, Greece and Spain, unit labour costs were rising faster than in comparison countries.

Signs of an adjustment in price levels can be observed, as a fall in wages and better productivity have improved the crisis countries' relative competi-

[5] In this period, the GDP ratio of private sector debt has contracted by an average 38 percentage points. Reinhart & Reinhart (2010), NBER WP 16334; Tang & Upper (2010), BIS Quarterly Review September.

[6] When examining the real effective exchange rate deflated by unit labour costs.

tiveness (Charts 27 and 28). Since 2009, unit labour costs have fallen in Ireland, Spain and Portugal. In France and Finland, wages have risen faster than productivity, and unit labour costs have grown. In Germany and Italy, wages and productivity have developed side by side since the crisis, and no significant change is observable in unit labour costs. Although productivity gaps have narrowed in the past three years, they remain substantial.

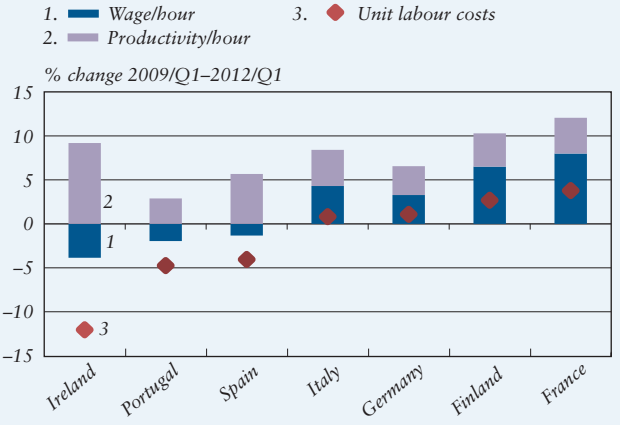
The adjustment of competitiveness should in the end also be reflected in a substantial reduction in the pace of inflation. Such a development is not yet visible in the crisis countries, with the exception of Ireland. The inflation differences between countries have, however, narrowed, and Greek, Spanish and Portuguese inflation is now closer to the pace in Germany and France. On the other hand, some factors relating to adjustment of the public finances, eg increases in indirect taxation, have slowed adjustment of the price level in eg Italy, Portugal and Greece. New structural adjustment measures relating to labour and product markets are expected to improve countries' future competitiveness, thereby fostering moderate price developments.

Common monetary policy has helped crisis countries adjust

Enhanced competitiveness, weaker domestic demand and adjustment of debt levels have led to a contraction in current account deficits in all the crisis countries (Chart 29). At the same time, private capital inflows into the crisis countries have significantly declined.

Chart 28.

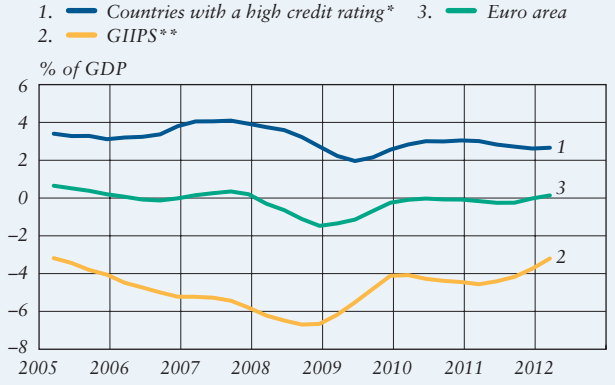
Competitiveness gaps have begun to close



Source: Eurostat.

Chart 29.

Current account imbalances narrowed***



** Germany, France, Netherlands, Belgium, Austria and Finland.*
*** Greece, Ireland, Italy, Portugal and Spain.*
**** Aggregated from national current account figures.*
Sources: European Central Bank, Eurostat and Macrobond.

These have been compensated by funding under the EU and IMF adjustment programmes (Ireland, Greece and Portugal) and Eurosystem loans. As an example, balance of payments data for January–June indicates a flight of EUR

220 billion in foreign capital from Spain, and EUR 89 billion from Italy (Chart 30). Most of the resultant gap has been filled by Eurosystem loans.

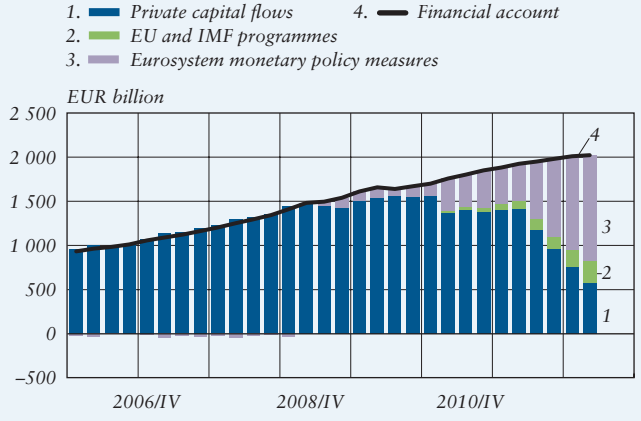
The adjustment of macroeconomic imbalances is essential for the long-term unity of the euro area. In addition to internal problems, imbalances render an economy vulnerable to external shocks, such as a rise in the price of oil or decline in global demand, while also lengthening the time taken to recover from crises. The need for and phases of adjustment vary between countries. For example, in Ireland adjustment began earlier and has progressed further than in the other crisis countries.

Funding under the EU and IMF adjustment programmes and covered loans granted to the banks by the Eurosystem have helped soften the adjustment process in the crisis countries. This has given them more time to push through essential reforms and has to some extent ameliorated the risks of uncontrolled adjustment, which could significantly damage economic performance throughout Europe. For example, an overly rapid unwinding of indebtedness could seriously weaken demand and trigger a negative spiral that could destabilise the banks and the public sector. At the same time, it would increase the social costs of adjustment. It is, however, vital that a more gentle pace of macroeconomic adjustment does not delay the essential restructuring of the financial sector in the crisis countries.

As with vigorous crisis measures in general, the non-standard measures taken by the Eurosystem will also have many effects, some of which might not be positive. For example, the long-term funding offered by the Eurosystem may have encouraged banks to purchase more government bonds of their home countries. Thus it has possibly fostered a deepening of the links between the public sector and domestic banks, and hence increased the countries' systemic risks. When deciding on non-standard measures, the Eurosystem has to take account of the various potential impacts of the measures and assess their usefulness as a whole.

Chart 30.

Eurosystem credits have replaced private capital flows in the GIIPS countries



Sources: European Central Bank, European Commission, national central banks, Macrobond, University of Osnabrück and calculations by Bank of Finland.

Box 4.

Structural gaps burden European economies

Structural problems in the economy constrain sustainable GDP growth in many euro area countries, impacting on their long-term growth potential via both resource allocation and productivity. In the GIIPS countries, in particular, weak economic structures have eroded market confidence in the countries' future growth potential. Efforts to bridge this structural gap[1] could significantly increase potential output and thus help find a sustainable solution to the debt crisis.[2]

The lower GDP levels in euro area countries relative to the United States stem from fewer hours worked per capita and weaker productivity per hours worked relative to competitors (Chart A). Structural challenges in the GIIPS countries broadly relate to the need to improve labour and product market efficiency, whereas in the countries with high credit ratings growth is held back by competitive barriers in the service sector, low labour participation rates and wide tax wedges.[3]

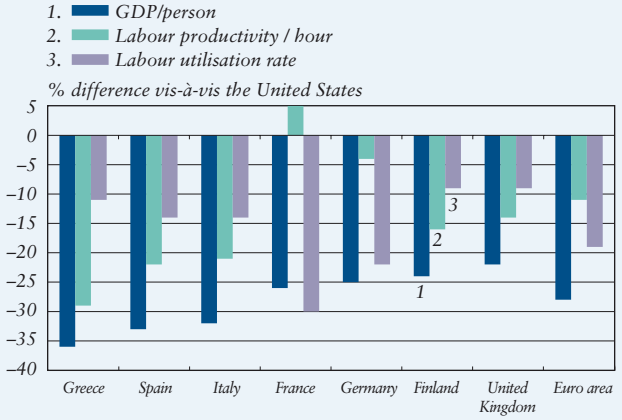
Structural gaps in euro area labour and product markets

Labour market structures have a pivotal impact on both labour supply and labour demand. Labour demand is affected, for example, by employer payments in wages and salaries and social contributions, including possible severance payments. The large share in these labour costs of employee-related taxes and other social and similar costs ('the tax wedge') acts as a constraint on labour demand especially in France, Germany and Greece (Chart B). Strong employment protection, in turn, reduces labour market dynamism in some Continental European countries, thereby weakening employment opportunities for certain groups of jobseekers and the productivity of the economy as a whole (Chart C).

By contrast, labour supply is affected by unemployment and other income support schemes, their relationship to net wages, and pension systems, among other factors. For example, sizeable and long-sustained earnings-related unemployment benefits may reduce incentives for seeking new employment, thus creating incentive traps. Especially in Finland and Ireland, but also in Germany and the United Kingdom, the difference between unemployment benefits and earned incomes after five years of unemployment is considerably lower than the OECD average.

Chart A.

Differences in GDP, labour productivity and labour utilisation rate* vis-à-vis the United States, 2006



** Labour utilisation rate refers here to total hours worked relative to total population.*
Source: Gilles (2009) EC Economic Papers 354.

[1] *The structural gap illustrates the downward impact on productivity and employment from the various structures of the economy, compared with competitors.*

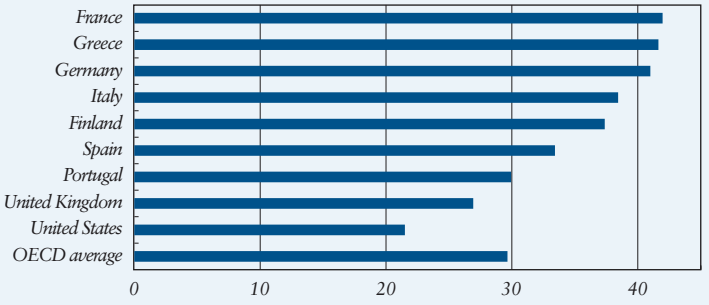
[2] *The comparison uses data from the United States and, occasionally, the OECD definition of countries with the 'best practices'.*

[3] *The analysis does not deal with the financial sector.*

Chart B.

High tax wedges particularly in Continental Europe

Tax wedge, at % of average employee income, 2008

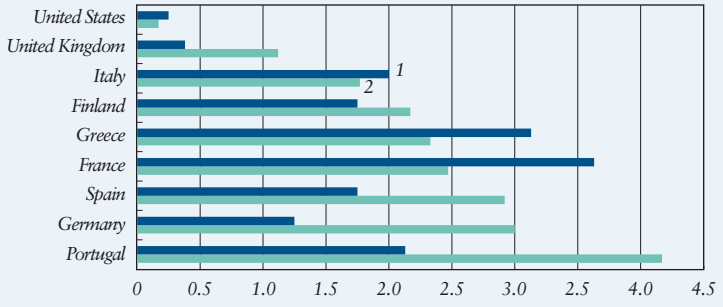


Source: OECD database.

Chart C.

Rigid euro area labour markets compared with the United States and the United Kingdom

1. Protection for temporary employment
2. Protection for permanent employment



** Scale 0–6, with 6 denoting strictest regulation.*
Source: OECD database.

In addition to labour market rigidities, poorly implemented laws and regulations on product and service markets may weaken effective resource allocation and competition and increase employer costs. These will, in turn, effect on both the economy's productivity and the labour utilisation rate. Complexity in governance structures and overall business environments makes comparison between countries difficult. However, an indicator[4] from 2008 for product market rigidities in the OECD countries can be used as a rough measure. In terms of this indicator, too, the structural gap between Continental Europe, the United States and the United Kingdom is significant, but there is divergence even inside the euro area (Chart D). On the other hand, an examination of indicators gauging the competitiveness of the business environment,[5] and governance effectiveness[6] reveals that Italy, Greece, Spain and Portugal score poorly compared with other OECD countries.

The present analysis of structural gaps in European countries is mainly based on the situation in 2008 (Charts B–D) and therefore excludes important economic policy reforms undertaken after the onset of the financial crisis. The most sizeable reform programmes have been launched in crisis-hit European countries. In Ireland, Greece and Portugal, the conditionality of the support programmes has made it easier to start with the implementation of politically difficult, extensive reform programmes. Spain and Italy, for their part, have seen market pressures force governments to take similar action.

Narrowing structural gaps would enable stronger growth

Several studies have shown that, over the long term, labour and product market reforms have significant positive implications for employment, productivity and economic growth. Although

[4] *The indicator captures countries' official laws and regulations concerning the proportion of state-owned businesses, as well as legal and administrative barriers to entrepreneurship, and barriers to international trade and investment.*

[5] *World Bank (2011) Doing Business Indicator.*

[6] *World Bank (2011) Governance Indicator.*

structural reforms are largely focused on altering long-term economic fundamentals, the effects of business cycles and short-term supply and demand shifts must be taken into account, notably in times of crisis.

The latest estimates of the potential impact of structural reforms on European growth are based on an OECD[7] study that gathers together a variety of empirical evidence, and IMF[8] calculations. The IMF calculations suggest that halving the structural gap related to euro area labour markets and pension systems would boost GDP by 1.5% after five years. Product market reforms would translate into an additional GDP contribution of 2.25%. According to OECD estimates, bridging structural gaps related to labour and product markets and pension systems could contribute more than 5% to GPD in almost all southern and central European countries over five years and more than 10% over ten years.

The results from these OECD and IMF studies serve as strong incentives for structural reforms. Even so, the results need to be viewed as merely indicative and interpretations must take account of the underlying assumptions and limitations. Closing the structural gap would for many countries mean weaker social security and cuts in other income transfers. The resultant implications for income distribution or social welfare are not taken into account in these calculations.

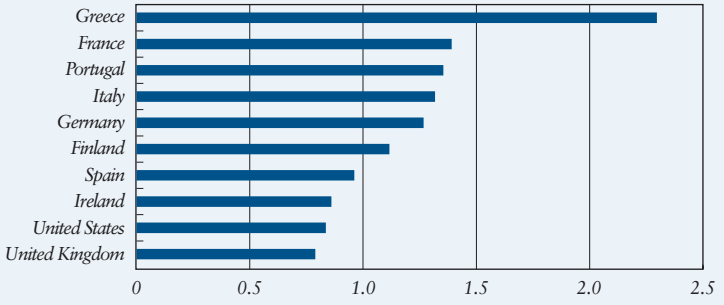
Growth can be boosted even in the short term, but cyclical factors also play a role

Although structural reforms are primarily aimed at enhancing long-term economic growth, research findings[9] point to mainly positive effects in the short term, too. Based on OECD findings, growth effects from reforms related to labour markets and social benefits are typically already positive within a short period of time. The IMF provides similar evidence. Short-term effects were positive particularly in respect of tax reforms, active labour market policies and pension system overhaul. By contrast, the effects of reforms focused on product market regulation mainly materialise over the long term. According to the IMF, a combination of labour and product market reforms could bring Europe a growth boost of as much as 0.6 of a percentage point even in the first year.

The short-term implications of structural reforms also depend on the cyclical situation. For example, if, in an economic downturn, reforms increase aggregate supply more than demand, the short-term implications may be negative. The short-term effects of reforms to unemployment benefits and employment protection, in particular, vary according to the business cycle. Implementation of such reforms in an economic downturn causes their short-term effects on overall employment to turn slightly negative.[10] On the other hand, structural reforms have been found to exert significant combined and knock-on

Chart D.

Differences in product market regulation*



** Scale 0–6, with 6 denoting strictest regulation, 2008.*
Source: OECD database.

[7] *OECD (2011) WP No. 835.*
[8] *IMF (2012) SDN/12/07.*
[9] *OECD (2012) WP No. 949, IMF (2012) SDN/12/07, OECD (2012) WP no. 948.*
[10] *OECD (2012) WP No. 949, IMF (2012) SDN/12/07, OECD (2012) WP no. 948.*

effects.[11] The potential negative short-term implications of labour market reforms, for example, can be mitigated by simultaneous implementation of more extensive labour and product market reform programmes.

Although research findings argue strongly for structural reforms, addressing structural rigidities nearly always impinges on the interests of individual groups and is therefore politically challenging. Many European economies are burdened with financial sector fragility, high indebtedness, imbalances in relative prices and rigidities in political decision-making, all of which will impair the near-term performance of these economies. Structural policy measures should be seen as part of the overall economic policy toolkit with which countries' economic problems are being tackled. Market confidence can be increased even in the short term by putting in place a comprehensive, credible economic policy reform programme that includes ambitious structural adjustment measures.

[11] *OECD (2012) WP No. 948, IMF (2012) SDN/12/07, Allard et al. (2010), IMF.*

Bursting of the housing price bubble and the economic policy challenges for Spain

30 August 2012

The wealth shock caused when the housing price bubble burst in Spain will have strong, long-lasting effects. As a consequence of the bursting of the bubble, financial factors (such as weaker balance sheets and higher costs of funding) weigh on the investment and consumption potential of companies and households. In this article, we use a model simulation to illustrate the procyclical effect of financial factors on the economic downswing in Spain. The economic programme of the country must be based on a realistic assessment of economic development that captures the significant and long-term negative growth contribution of financial factors. Economic policy measures should be adopted to avert the threat of balance sheet recession facing Spain and avoid any permanent effects of the crisis on the output potential of the economy.

Financial factors deepen and prolong Spain's economic downswing

The strong credit expansion and economic upswing preceding the global financial crisis resulted in a housing price bubble in Spain. Over the years 2002–2006, housing prices increased by 15% on average annually. During the economic upswing, both households and companies (especially in the real estate and construction fields) ran heavily into debt. The indebtedness of the private sector was accompanied by a current account deficit and, therefore, in view of the external indebtedness of the economy as a whole, was not sustainable.[1]

[1] In 2007, the general government debt of Spain was moderate, amounting to about 36% of GDP. In the same year, the current account posted a 10% deficit.

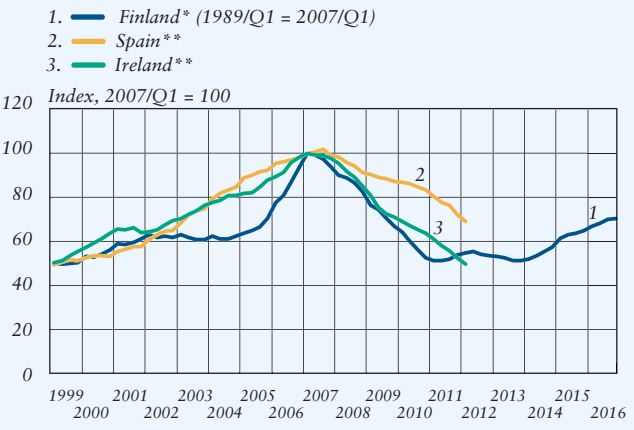
With the bursting of the housing price bubble, the surge in private sector indebtedness in Spain during the boom years was revealed as a problem for the whole economy. After the peak witnessed in 2007, housing prices have fallen for almost five years already (Chart 1). The decline in housing prices from the peak up to the second quarter of 2012 has been about 26% in nominal terms and about 32% in real terms.

The wealth shock induced by the bursting of the housing price bubble will have strong, long-lasting effects. The fall in asset prices weighs on the balance sheets of companies and households, as (the values of) assets are reduced but the level of debt remains unchanged. The wealth shock depresses real economic development, in that the erosion of private sector balance sheets reduces the investment and

Hanna Freystätter
Economist
Monetary Policy and Research

Chart 1.

Real housing prices: current Spanish and Irish crises relative to the 1990s crisis in Finland



**Deflated by national CPI.*
*** Deflated by HICP.*
Source: ENS 95.

consumption potential of companies and households. The wealth shock also weighs on the balance sheets and lending capacity of the banking sector. Overall, the debt dynamics of the private sector may reduce domestic demand to such an extent that GDP will contract despite a growth in exports. Furthermore, in the absence of adequate policy measures, weak balance sheets in the private sector may hold back economic performance for a long time, causing what is known as a balance sheet recession.

The Spanish economy is still in a downward spiral.

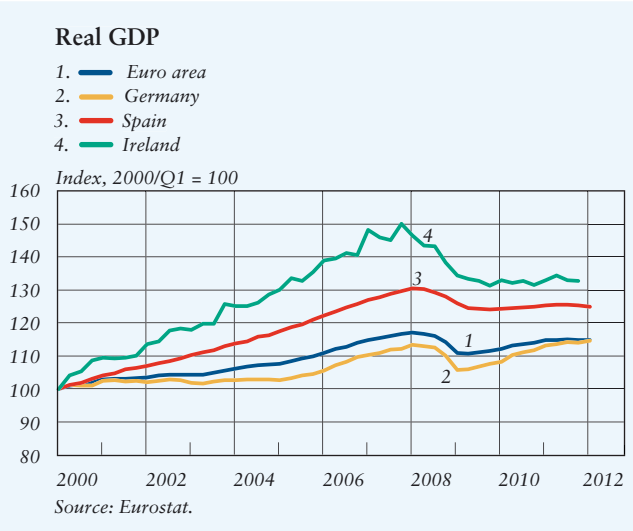
In mid-2012, almost 5 years after the bursting of the housing price bubble, Spanish real GDP stands around 5% below the level of early 2008 (Chart 2). GDP is expected to contract by 1.5% this year and 0.6% in 2013.[2] Hence, the Spanish economy is still caught up in a downward spiral, with the fall in housing prices, contraction of GDP and subdued expectations of growth in future years weakening private sector balance sheets. This coincides with an aggravation of the problems of the banking sector and general government finances, and higher unemployment. The deterioration of the banking sector and general government finances has already progressed so far that Spain had to request external assistance in June 2012 to safeguard the functioning of its banking sector.

The fall in asset prices, weaker corporate and household balance sheets, rising costs of funding in combination with funding availability constraints and a high level of private sector indebtedness are financial factors that will deepen and prolong the economic downswing in Spain. In this article, we use a model simulation to illustrate the procyclical effect of financial factors on the recession in Spain. The simulation is based on a modern small open economy macroeconomic model that has been presented in earlier publications of the Bank of Finland.[3]

The simulation highlights the importance of capturing the effect of financial factors to ensure that the need for and scope of policy measures is based on a realistic assessment of the country's future economic development and related risks. Model simulations that do not incorporate financial factors and the debt dynamics of the private

[2] IMF (2012d). For more details on the Spanish situation, see also IMF (2012c).

Chart 2.



Source: Eurostat.

[3] Freystätter (2011 and 2012a). The simulations of this article are largely based on the same calibrated values of model parameters as in the simulations by Freystätter (2012b). The major difference is the higher persistence of the wealth shock facing the economy, combined with a slightly weaker financial accelerator. The simulations presented herein are quantitatively indicative.

sector generally point to a mild and short-lived recession as the only consequence of the bursting of a housing price bubble.

This article also explores the conditions under which financial factors can foster the generation of a virtuous cycle in Spain. Financial factors will underpin economic growth when housing prices turn up, private sector balance sheets improve and deleveraging sets in gradually, easing up the financial conditions of companies and households and improving their investment and consumption potential. The adverse effects of financial factors, especially a long-term decline in investments, should be dampened by policy measures to avoid the effects of the wealth shock on the output potential of the economy and, therewith, longer-term growth prospects.

The need for and scope of economic policy measures are based on an assessment of the economic outlook

The design and formulation of economic policy draws on a variety of forecasts and projections. Calculations typically employ models that measure business cycle fluctuations and feature the key operating mechanisms of the economy. The models allow for the analysis of future economic developments under 'laboratory conditions' and for an impact assessment of alternative economic policy approaches.

At their best, the models serve as analytical tools, contributing to the definition of economic policy objectives. At their worst, a model simulation may, for one reason or another, be misleading, producing a skewed assessment of the need for and scope of measures to be adopted, with fatal consequences.

There are a variety of macroeconomic models, which are always simplifications. The model simulation presented in this article builds an interpretation of actual economic developments in Spain that highlights the importance of financial factors, such as the level of private sector indebtedness. The key message communicated by this interpretation is that the debt dynamics of the private sector will amplify the recession and slow recovery.

Model simulations that for some reason do not capture the negative effect of financial factors typically arrive at a mild and short-lived recession as the only consequence of the bursting of a housing price bubble. When GDP contracts only slightly and the economy recovers swiftly from the effects of the shock, the deterioration in general government finances and banks' financial standing is only temporary.

By contrast, financial factors may deepen and prolong the recession in a way that seriously shakes confidence in the financial sector and the stability of general government finances. From this follows a constriction of the room for manoeuvre in economic policy and a change of needed policy measures.

In the model simulation, financial factors amplify and prolong the downswing, but the economy recovers with the help of adjustment mechanisms

A typical feature of a severe economic downswing is a substantial and protracted fall in investment. Although

net exports may grow, the strong decline in investment will force total output onto a downward path. This was witnessed in, for example, the early 1990s recession in Finland,[4] and signs of a similar path unfolding are now visible in Spain. This is consistent with the financial accelerator mechanism,[5] which is also built into the macro-economic model employed in the present simulation.

The operation of the financial accelerator in the economy can be explained as follows. In a recession, output contracts and asset prices decline, causing erosion of private sector balance sheets. Following a reduction in the net worth of the private sector (assets minus debt), the ability of borrowers to pay back their loans is weakened, meaning that lenders charge higher risk premia. A rise in the cost of funding and potential constraints on the availability of funding dampens private investment. In addition, private consumption and exports may be affected by the financing constraints. Reversing the trend in investments takes time, as deleveraging is a slow process. In this way, the financial accelerator mechanism operates to deepen the recession and slow recovery.

Macroeconomic models of business cycle fluctuations incorporate adjustment mechanisms based on economic theory, which operate over time to return the economy to the pre-shock level. For example the decline in private sector net assets induced by the shock will slowly be reversed towards the baseline, as the level of indebtedness falls in response to a gradual recovery in asset prices. At the same time, the risk premia on external finance, which rose in response to the shock, will fall back to the pre-shock level. Hence, the rationale behind the model is that the economy will not remain depressed forever; GDP will head towards its pre-shock level, although recovery may take several years.[6]

The model is calibrated so as to reproduce the key features of the macroeconomic developments in Spain. This allows for the use of the model as a tool in analysing the need for and scope of economic policy measures. Below, we compare model outcomes with actual Spanish data.

Key features of the economic developments in Spain

1 Bursting of the housing price bubble weakens balance sheets

Since the bursting of the housing price bubble towards the end of 2007, housing prices in Spain have declined by about 26% in nominal terms and 32% in real terms, up to the second quarter of 2012 (Chart 1). In this analysis, the bursting of the bubble is modelled as a wealth shock. The fall in the price of housing, real estate and shares reduces private sector wealth,

[4] Eg Freystätter (2011).

[5] Bernanke, Gertler ja Gilchrist (1999).

[6] Business cycle models do not challenge the position at the outset, for example whether the indebtedness of the Spanish private sector was already too high before the shock. If this is the case, rather than return to the baseline, the economy should aim for a new equilibrium with a lower level of private sector indebtedness. However, this article focuses on the dynamic effects of a wealth shock and does not address changing economic structures.

and household and corporate balance sheets are weakened. Thus, the bursting of the housing price bubble suddenly wipes out part of the net worth of the private sector (assets minus debt).[7]

The crucial issue for future economic developments in Spain is the duration of the shock and the fall in housing prices still to occur before a turnaround. Many analysts suggest that housing prices in Spain have not yet bottomed out.

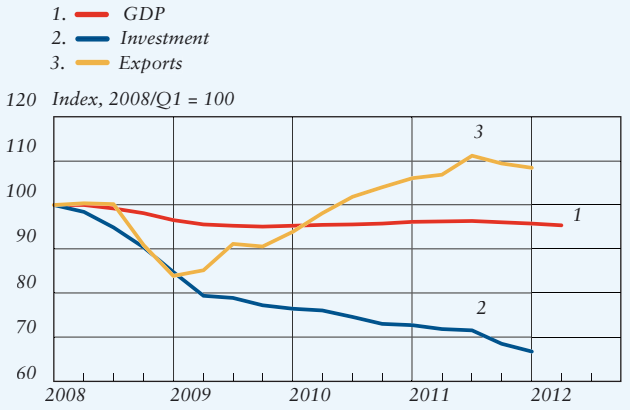
2 GDP contracts and remains well below the baseline for several years ahead

In the model simulation, the wealth shock results in a decline in output and investment. In Charts 3–5, model outcomes are compared with data on actual economic developments in Spain. The magnitude and duration of the shock has been chosen so that the model simulation reflects the contraction in investment and GDP as closely as possible.

A comparison of the model outcome with actual data demonstrates that the model represents an accurate reproduction of the actual path of GDP and investment (Charts 3a and 3b). The simulation shows that GDP contracts by about 5% and investment by about 30% as a consequence of the shock, which, in fact, is consistent with the actual developments witnessed in Spain since the beginning of 2008. According to both the model outcome and actual Spanish data, as a consequence of the shock GDP contracts for about two years, after which it remains about 5% below the early 2008 baseline. During the first few years following the shock, the actual contraction in investment was slightly slower than simulated, but the contraction has not stopped. By the end of 2011, the decline in investment had, in fact, been somewhat larger than foreseen in the model.

Chart 3a.

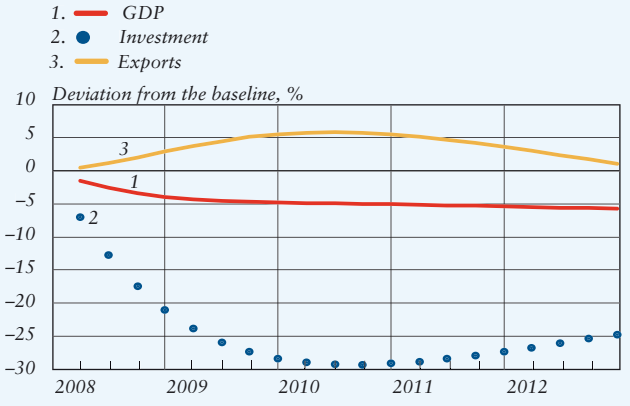
Actual Spanish data



Source: Eurostat.

Chart 3b.

Model simulation of the effects of a wealth shock

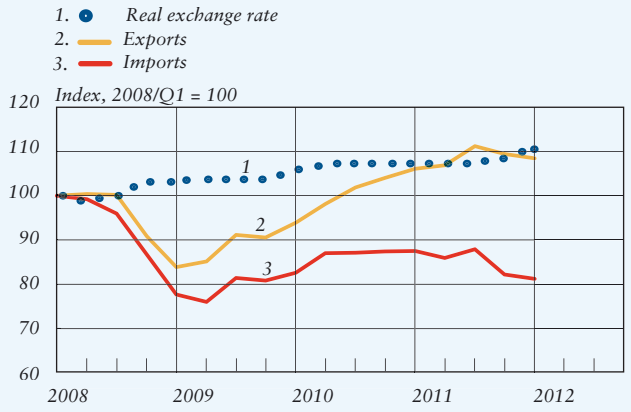


Source: Model simulation.

[7] Asset prices typically fall in a downswing, irrespective of whether the downswing was caused by a wealth shock or not.

Chart 4a.

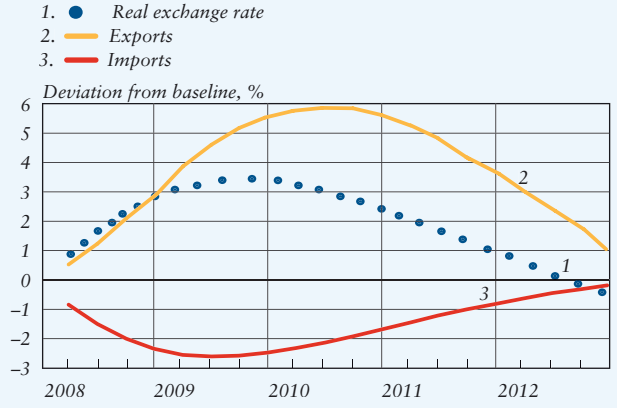
Actual Spanish data



Source: Eurostat.

Chart 4b.

Model simulation of the effects of a wealth shock



Source: Model simulation.

In the model simulation, investment picks up again approximately three years after the bursting of the bubble. This is explained by the adjustment mechanisms built into the model, which produce a spiral of economic growth and easing of financial conditions in the economy. The key adjustment mechanism in terms of investment is the gradual recovery in asset prices from the fall triggered by the shock, resulting in the strengthening of private sector balance sheets and a lowering of risk premia (Chart 5b). GDP is much slower to recover. Recovery will only set in after 10 years, and 20 years after the shock GDP will still be well below the pre-shock level.

3 Improvements in export price competitiveness through internal devaluation raises hopes of an export-driven upswing...

The real exchange rate may depreciate due to either a depreciation of the nominal exchange rate or changes in relative prices. The evidence from many crises shows that a growth in exports following devaluation of the nominal exchange rate has helped countries recover from recession. As Spain is a member of the euro area, its real exchange rate may depreciate if the exchange rate of the euro depreciates or if the level of costs and prices in Spain falls relative to that of its external trade partners. The decline in prices and unit labour costs relative to the external price level is known as 'internal devaluation'.

In the model simulation, the maximum depreciation of the real exchange rate is roughly 3.5%, followed by a gradual appreciation (Chart 4b). In the simulation, the depreciation of the real exchange rate translates into net export growth. The positive effect of exports is strongest in just over two years, when exports are 6% above the baseline.

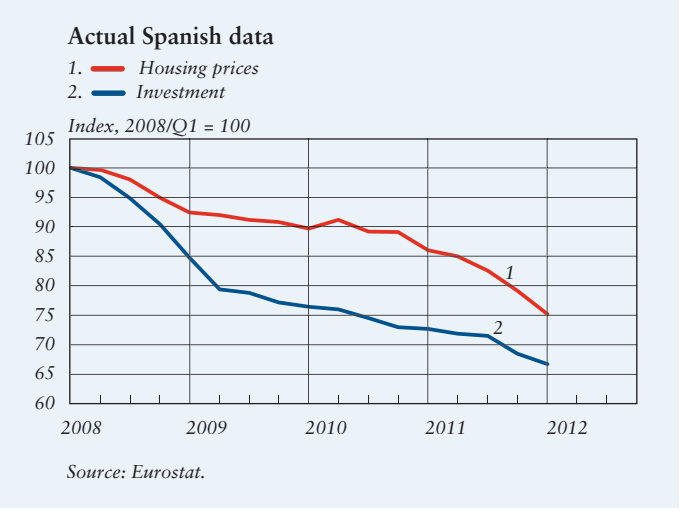
Measured by unit labour costs, the real exchange rate of Spain has already

depreciated by about 10% since the beginning of 2008 (Chart 4a). However, measured by consumer prices the depreciation is much smaller, amounting to less than 4%. The model features a higher elasticity of wages, in particular, compared with actual experience in Spain. Despite the presence of wage rigidities, depreciation of the real exchange rate, slower import growth and higher exports have been witnessed, especially recently, which is consistent with the simulation and raises hopes of export-driven growth (Chart 4a). The feeble development of Spanish foreign trade over the years 2008–2009 is not related to a wealth shock, but to the pronounced deceleration in world trade growth following the global financial crisis, which depressed Spanish exports. The slowdown in exports also resulted in a reduction in the use of imported inputs.

4 ...but the debt dynamics of the private sector slows economic recovery and may offset export-driven growth

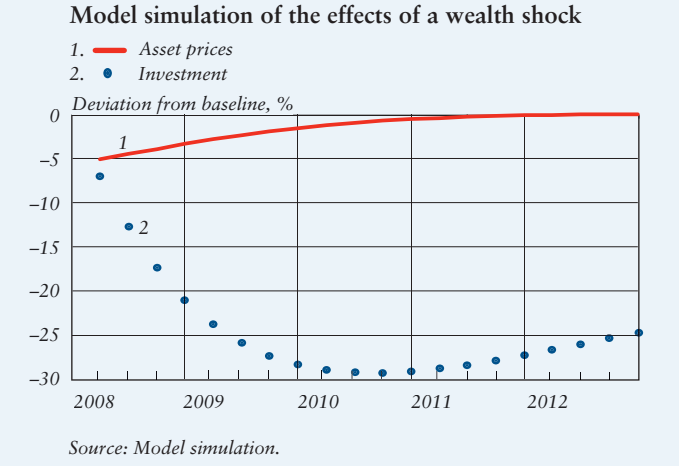
Despite the hopes of export-driven growth raised by recent developments, such as the depreciation of the real exchange rate and net export growth, Spanish GDP continues to shrink. One explanation to the persistent decline in GDP offered by the model is the negative effect on investment of financial factors and private sector debt dynamics, which offsets the positive growth contribution from net exports. With the bursting of the housing price bubble, the net worth of the private sector will decline for a long time and the costs of finance will grow. The risk premia on external finance to be paid by borrowers will increase, as lenders want to be compensated for borrowers' weakened ability to pay back their loans and the consequent heightened risk of default. In addition, banks are raising their lending margins, following the problems in the banking sector. Expanding risk premia will aggravate the recession by depressing investment,

Chart 5a.



Source: Eurostat.

Chart 5b.



Source: Model simulation.

especially as investment projects typically require long-term external finance. With the bursting of the housing price bubble, the availability and terms of funding may be constrained.

In the model, risk premia remain high, dampening investment until a deleveraging of the private sector back to the baseline has been achieved. This process will take a long time, keeping the level of output well below the baseline for several years to come. Over time, as indebtedness declines, risk premia will slowly fall, which is a prerequisite for the recovery of the economy.

The contraction of the Spanish economy seems to match the outcome of the model. The debt dynamics of the private sector operates to dampen investments, amplify the reduction in output and slow down the recovery of the economy. Consistent with the model simulation, Spanish GDP shrinks despite net export growth, due to a marked contraction in investment (Chart 5a).[8]

The high level of indebtedness, together with tightening financing conditions, will have a particularly severe impact on Spanish households, real estate businesses and construction companies.

The wealth shock induced by the bursting of the housing price bubble will weigh on household and corporate balance sheets for a long time. The high level of indebtedness, together with tightening financing conditions, will have a particularly severe impact on Spanish households, real estate businesses and construction companies. Before the recession, housing construction accounted for the majority of investment in Spain, while productive investment (such as investments in machinery and equipment) was more subdued. The pick-up in investment will scarcely depend on construction, as it will take a long time before the economy will need any new buildings. In addition, the uncertainty surrounding Spain and the euro area overall will put off any investment decisions.

In model simulations, obstacles to internal devaluation are often smaller than in reality. In fact, the model simulation shows that even if the price mechanism were to operate appropriately and there were a rapid fall in domestic costs, the unfavourable development of financial factors could still reduce domestic demand to such an extent that GDP will contract.

High level of debt at the outset makes for a severe and protracted recession

Research findings indicate that economic downswings which are preceded by a robust and broad-based credit expansion are more severe and long-lived than recessions which are not preceded by a credit boom.[9] The downswing in Spain was preceded by an overheating of the economy, fuelled by robust credit expansion. The total debt of the Spanish private sector amounted to 286% of GDP in 2007.[10] Given households' and companies' high expectations of future income, together with rising asset prices, balance sheets

[8] In 2007, goods and services exports accounted for 27% of Spanish GDP, against 46% in Finland and 80% in Ireland. The higher the contribution of exports to GDP, the stronger the influence of export growth on GDP. The likelihood of export-driven growth is much higher for Ireland for example than for Spain.

[9] Eg IMF (2012a).

[10] IMF (2012c).

remained sound, although the country was running more heavily into debt. However, the global financial crisis proved the income expectations underlying the level of debt to be overly optimistic.

The level of indebtedness and shocks on indebted sectors of the economy are, in fact, one explanation for the potentially large effects of a shock to the economy. Model simulations show that, for example, an export demand shock produces a much less severe and persistent downswing than a wealth shock.[11] The explanation is that a wealth shock affects the balance sheets of the indebted private sector directly, hence amplifying the effect of the shock. A feature of the model employed is that the higher the initial indebtedness of the private sector (prior to the shock), the stronger the contraction in output and the slower the recovery of output back to the position at the outset.[12]

A wealth shock triggered by the bursting of a housing price bubble has strong, long-lasting effects. For example, in the United States the financial crisis has wiped out several years of returns on household wealth.[13] The major reason for the decline in assets is the collapse of housing prices. Spain has to adjust to the deflation of the housing price bubble as part of the euro area, which pursues a single monetary policy. Meanwhile, fiscal policy measures are constrained by a large general government deficit and a near critical amount of public debt.

No recovery yet in sight

Spanish GDP is projected to contract further this year and next. The path of the economy needs to be reversed to produce a virtuous cycle of economic growth and financial easing. This would turn unemployment onto a downward path and strengthen general government finances and the position of the banking sector. However, no speedy return to the level of GDP fuelled by the over-indebtedness of the economy witnessed in early 2008 is to be expected.

In the aftermath of the bursting of the housing price bubble, the recovery of the economy requires a correction of the overvaluation of housing prices. Experience from many countries has shown that this process takes many years. In Finland, for example, housing prices fell by roughly 50% in real terms in the early 1990s, and a turnaround was only seen six years after the bursting of the price bubble (Chart 1). Housing prices in Spain have now been declining for almost five years, by around 32% in real terms to date.

The persistent downward trend in housing prices erodes banks' balance sheets, as the value of real estate assets (especially real estate and bad loans taken over by the banks) declines, with the recognition of impairment losses weighing on the banks' balance sheets, increasing the need for adjustment measures in the banking sector and limiting banks' lending capacity. As the problems of the housing sector pose a serious threat to the stability of the

In June 2012 Spain requested external assistance for recapitalisation of the banks, as the problems of the housing sector pose a serious threat to the stability of the financial system overall.

[11] Freystätter (2012b).
[12] Freystätter (2012b).
[13] Fed (2012).

Spanish financial system overall, in June 2012 Spain requested external assistance for recapitalisation of the banks.

A resolution of the banking sector problems is crucial, as the difficulties experienced by the banks entail funding availability constraints and higher loan rates for companies and households. A marked tightening of financial conditions has already been witnessed in Spain, in response to the pressure on banking sector balance sheets and the weaker loan servicing ability of households and companies in the context of a declining economy. Financial tightening amplifies the unfavourable economic developments.

The recovery of the real economy is conditional on the financial factors starting to operate in favour of economic recovery. For actual recovery to set in, housing prices must stabilise and private sector balance sheets begin to strengthen, the level of indebtedness gradually to fall and banks' lending capacity to improve. So far, the financial factors appear to be exercising a negative influence in Spain: housing prices continue to fall and private sector balance sheets to deteriorate, while banks' lending capacity is further impaired. In addition, the outflow of private capital in the latter part of 2011 and early 2012 further tightens financial conditions.[14] This phenomenon can be viewed as a new shock facing the Spanish economy.

Persistence of private sector balance sheet problems threatens output potential of the economy

An analysis of this article leads to the conclusion that Spain should adopt policy measures to address the problems of indebtedness suffered by companies and households. In the IMF's assessment,[15] Spain should currently focus on solving the balance sheet problems of the corporate sector by providing for appropriately targeted debt restructuring. There is a threat that the private sector balance sheet problems will develop into a balance sheet recession similar to that experienced in Japan, when unproductive companies nearing bankruptcy (especially in the construction field) remained in business (also known as zombie companies). As a consequence, Japan faced a 'lost decade' (1991–2003), ie a protracted period of extremely slow growth.[16] The major concern is that the long-term contraction in investment and higher prevalence of long-term unemployment will leave a permanent mark on the Spanish economy. Measures designed to foster investment and employment are important for avoiding permanent effects from the bursting of the housing price bubble and the consequent crisis on the output potential and growth prospects of the economy.

Keywords: Spain, housing price bubble, macroeconomic models

[14] Eg IMF (2012c).

[15] IMF (2012b).

[16] Eg Hamada, Kashyap and Weinstein (2011).

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Fiscal policy cyclicality and sovereign risk premia

3 September 2012

A countercyclical fiscal policy is beneficial to the economy, as it smoothes out business cycle fluctuations and reduces government debt servicing costs. If, on the other hand, fiscal policy is procyclical, this hampers the capacity of monetary policy to foster macroeconomic stability. This being the case, decisions by euro area member countries that enhance fiscal discipline will increase stability in the euro area.

Juha Kilponen
Adviser
Monetary Policy and Research

As a consequence of the European debt crisis, the discretionary room for manoeuvre in fiscal policy will be reduced by the introduction of new rules on balanced budgets. The general government structural deficit can in future be a maximum ½% of GDP. The opportunities for European institutions to supervise Member States' fiscal policies will be improved by the new legislation, which also reinforces the Stability and Growth Pact. Also proposed have been stronger moves towards a federal Europe. Such a development could further reduce Member States' room for manoeuvre in fiscal policy, as increased concentration of budgetary powers at EU level would be accompanied by a bigger budget and larger income transfers.

The fiscal policy decisions already taken and the plans for the future are based on the need to increase fiscal discipline within the monetary union and prevent EMU drifting into another debt crisis like the present one, in which the risk premia demanded of Member States' government bonds could grow out of control, disrupting the stability of the financial system. Restricting the size of structural budget deficits is primarily intended to ensure the public finances are kept in balance during the different phases of the economic cycle, but in such a way that during a downswing it will be possible if necessary to provide a stimulus without exceeding the 3% maximum budget deficit limit. This would avoid a situation in which public debt would become excessive relative to the output capacity of the economy.

In practice, restricting budget deficits will require a willingness to regularly adjust public expenditure (revenues) according to the economic cycle in order to meet the deficit and debt targets. As the fiscal policy instruments to be used in meeting the deficit target are not specifically defined in existing legislation, power of decision in this matter lies with each Member State. Another key element in the new fiscal policy system is that fiscal policy rules will be rooted more strongly than before in institutions and legislative provisions. This can be expected to improve the credibility of fiscal policy under the same principle as with monetary policy, where the price stability objective is written into the central bank mandate.

This paper analyses the links between fiscal policy , monetary policy and sovereign bond yields using a general equilibrium model. On a purely empirical basis, this issue has been studied by Iara and Wolff (2010). Their results suggest that the sovereign risk premium will decline by 1% when fiscal policy rules are reinforced by legislation and institutional improve-

ments. The link between fiscal policy and bond risk premia has barely been studied within general equilibrium macroeconomic models. This is because of difficulties in satisfactorily modelling the link between risk premia and the macro economy.[1]

In the present article, the risk premium demanded on bonds expresses households' willingness to take on risk at different phases of the economic cycle. In the model used in the calculations, bond prices (which are inversely related to yields) are low during a downswing and high during an upswing. In other words, bond prices (yields) fluctuate procyclically (countercyclically) relative to economic activity. As households' willingness to take on risk is simultaneously small during a downswing, it follows that the risk premium demanded on bonds is positive.

The key outcome of this article is that a procyclical fiscal policy that reinforces business cycle fluctuations can significantly increase the costs of servicing public debt, as investors demand a high yield on government bonds.

Main features of the model

The model[2] used in this article is a fairly typical new-Keynesian stochastic general equilibrium macroeconomic model.3 Equilibrium models of this type, based on economic agents' optimizing behaviour, are used extensively by central banks as tools for macroeconomic analysis, and also in forecasting.

In our model, the public sector collects taxes and issues long-term bonds. The income accruing from the bond issues is used for public consumption and income transfers to households. Households consume, pay taxes and offer labour to business enterprises. Households also invest in the aforementioned government bonds. In the model, monopolistically competing enterprises produce consumer goods. The prices of these goods adjust slowly to movements in the economic cycle. For this reason, production and employment respond flexibly to changes in aggregate supply and demand, while the response of prices is more moderate. Households and companies make optimal decisions on consumption, labour supply, investment and pricing. The model also assumes that the central bank controls short-term nominal interest rates, and that fiscal policy determines public consumption, the income tax rate and income transfers.

In contrast to household and corporate decisions (which are based on optimization), short-term market interest rates, public consumption, the income tax rate and income transfer decisions are in the baseline model all based on a policy rule estimated from the empirical data. The interest rate rule assumes that short-term rates respond to the output gap[4] and inflation in such a way that the central bank holds inflation on average at the target level: as output grows and/or inflation accelerates beyond the target level, the central bank raises interest rates.

[1] Eg den Haan (1995).

[2] The model is presented in more detail in Christoffel, Jaccard & Kilponen (2011).

[3] Eg Goodfriend & King (1997), Woodford (2003), Galí (2008), Smets & Wouters (2007).

[4] The output gap is defined in the model on as the deviation of output from the balanced growth path.

In regard to the fiscal policy rules, the assumption is that public consumption, the tax rate and income transfers respond to the output gap and to deviations of the debt ratio (debt/GDP) from the target level. In the baseline model, the public consumption to GDP ratio declines during an upswing and grows during a downswing. The tax rate and income transfers, meanwhile, respond slightly negatively to the output gap. All fiscal policy variables respond to the debt ratio in such a way that the ratio returns slowly towards its target level in response to exogenous disturbances. All in all, in the baseline model, fiscal policy is countercyclical and the fiscal policy rules hold the debt ratio at its target level over the long run.

Pricing of bonds in the model

The pricing of government bonds is, in the model, based on a stochastic discount rate with which households discount the cash flow from bonds. Cash flow can, in the case of a bond, be formed from the coupon interest plus the capital repayable once the bond has matured, or in the case of a zero-coupon bond, solely from the capital repayable once the bond has matured. In the latter case, the yield on the investment comprises only the difference between the issue price of the bond and the capital sum repayable on maturity, as there is no coupon interest payable during the life of the bond.[5]

The stochastic discount factor is determined by households' marginal utility between present and future consumption. In a market equilibrium, the bond price is given by the condition whereby the discounted marginal utility from a bond investment is equal to the utility of the household using a sum equivalent to the price of the bond on present consumption. As the marginal utility of consumption depends on consumption and hours worked in the present and future period, so bond prices, too, fluctuate as consumption and hours worked, and hence aggregate supply and demand, fluctuate.

In the model, the risk premium on bonds (the difference of between the yield of a bond and the short-term risk-free interest rate) is positive due to the fact that bond prices fluctuate procyclically (countercyclically) relative to the business cycle. As the bond price is low during a downswing, but the marginal utility of consumption is high, this means that bond investment does not provide effective protection from business cycle fluctuations: the bond yield is small precisely when the utility of additional consumption would be high. In such a case, households will require a return from the bond that is larger than the risk-free return. The size of this risk premium will naturally depend on the parameters of the model and– as is noted below – essentially also on the cyclicality of fiscal policy.

Estimating the model parameters

As the size of the risk premium on bonds (and of fluctuations therein) depends fundamentally on the parameters of the model, particular attention must be given to the selection

[5] This cash flow is estimated in the model using the coupon interest, which declines geometrically over the life of the bond. The duration of the bond has, in turn, been calculated using the Macaulay duration formula.

of the parameters. The parameters of our model have therefore been estimated using standard methods[6] that use some key macroeconomic variables (such as private consumption, inflation, short-term interest rates, public consumption, tax revenues and income transfers) as observable variables in the estimation.

Some of the parameters have also been calibrated in such a way that the model's long-term equilibrium is consistent with average observations over the estimation period (such as real interest rates and the GDP ratio of public debt, public consumption and income transfers). The empirical data used has been US quarterly data from the period 1971/I–2007/IV. In addition, the model assumes that shocks exogenous to the model relate to productivity, inflation, interest rates, public consumption, the tax rate and income transfers.

The fit of the model relative to the empirical data has been examined by comparing the business cycle statistics produced by the model's simulations against the empirical data itself (Table 1). Table 1 presents a comparison of fluctuations in key macroeconomic and financial variables produced by the model simulations and their correlations with corresponding variables in the empirical data.

The results show that, of the key macroeconomic variables, the model slightly underestimates fluctuations in output and consumption and correspondingly overestimates the fluctuations of hours worked. At the same time, however, the model performs well in forecasting the correlation between these variables and output. Of the fiscal policy variables, the model overestimates fluctuations in the debt ratio, at the same time as the correlation between public consumption and output in the model simulations is mildly positive and in the empirical data clearly negative. With regard to financial variables (interest rates, inflation), the model slightly overesti-

[6] An & Shorfheide (2007).

Table 1.

Comparison of model simulations with empirical data

	Business cycle statistics			
	Standard Deviation (%)		*Correlation (relative to output)*	
	Data	*Model*	*Data*	*Model*
Output	*1.60*	*0.84*	*1*	*1*
Consumption	*1.27*	*0.87*	*0.90*	*0.93*
Hours worked	*1.24*	*1.76*	*0.80*	*0.91*
Public expenditure	*0.24*	*0.30*	*–0.59*	*0.09*
Income transfers	*0.40*	*0.39*	*–0.63*	*–0.09*
Debt ratio	*1.05*	*2.79*	*–0.03*	*–0.72*
Tax rate	*0.33*	*0.51*	*0.08*	*0.16*

	Financial statistics			
	Mean (%)		*Standard Deviation (%)*	
	Data	*Model*	*Data*	*Model*
Short-term interest rate	*2.51*	*0.76*	*2.66*	*3.51*
Inflation	*4.04*	*0.44*	*2.62*	*2.71*
Bond risk premium	*1.06*	*0.72*	*0.54*	*0.08*

The table compares the values of key macroeconomic and financial market variables generated by the model simulations against empirical data. Business cycle statistics are based on logarithmic and Hodrick-Prescott-filtered quarterly series. The financial market variables are presented as percentages at the annual level. The empirical data used has been US quarterly data from 1971–2007, with the exception of the bond risk premium, which is taken from Rudebusch & Swanson (2008). The model-implied moments are based on second-order Taylor approximation around the steady state.
Source: Christoffel, Jaccard & Kilponen (2011).

mates fluctuations in long and short interest rates, but precisely reproduces the volatility of inflation.

The main point of interest in the model is the risk premium (Table 1). Based on the simulations, we can say that the model is rather successful in reproducing the average risk premium in the empirical data, particularly if we remember that models of this type generally produce a risk premium close to zero.[7] The average risk premium generated by the model simulations is 0.72%. The corresponding figure in the empirical data is 1.06%.

Based on a variance decomposition (Table 2), we can see that productivity and public consumption shocks explain most of the fluctuation in both output and bond prices. Inflation can be largely explained by inflation and productivity shocks. In the model, fluctuation in bond prices is mostly explained by productivity, inflation and interest rate shocks, as would be expected.

[7] Eg Rudebusch & Swanson (2008).

Fiscal policy and the risk premium

The majority of the fluctuations in output in the empirical data are explained, on the basis of this model, by fluctuations in productivity and public expenditure (see also Table 2). Productivity shocks themselves explain around 56% of the fluctuations in output, while public expenditure explains around 41%. At the same time, shocks affecting taxes and income transfers explain only a marginal proportion of the cyclical fluctuations. From the perspective of the connection between the risk premium and fiscal policy, the key feature of the model is that an increase in public expenditure leads to an increase in the marginal utility of consumption at the same time as bond prices decline.

Growth in the marginal utility of consumption is a consequence of the negative wealth effect of an increase in public expenditure. In the model, economic agents compensate the negative wealth effect caused by expected future tightening of taxation due to higher public expenditure by

Table 2.

Historical variance decomposition of output, inflation and bond prices

	Shock				
	Productivity	*Public consumption*	*Short term interest rate*	*Infllation*	*Other (tax rate, income transfers)*
Output	*55.90*	*40.90*	*1.80*	*1.30*	*0.10*
Inflation	*14.40*	*0.20*	*0.10*	*84.90*	*0.40*
Bond price	*76.50*	*6.10*	*6.70*	*10.60*	*0.10*

The table's variance decomposition illustrates how much of the total variation in a given variable is due to a particular exogenous shock. The values in the table should be understood as percentages.
Source: Christoffel, Jaccard & Kilponen (2011).

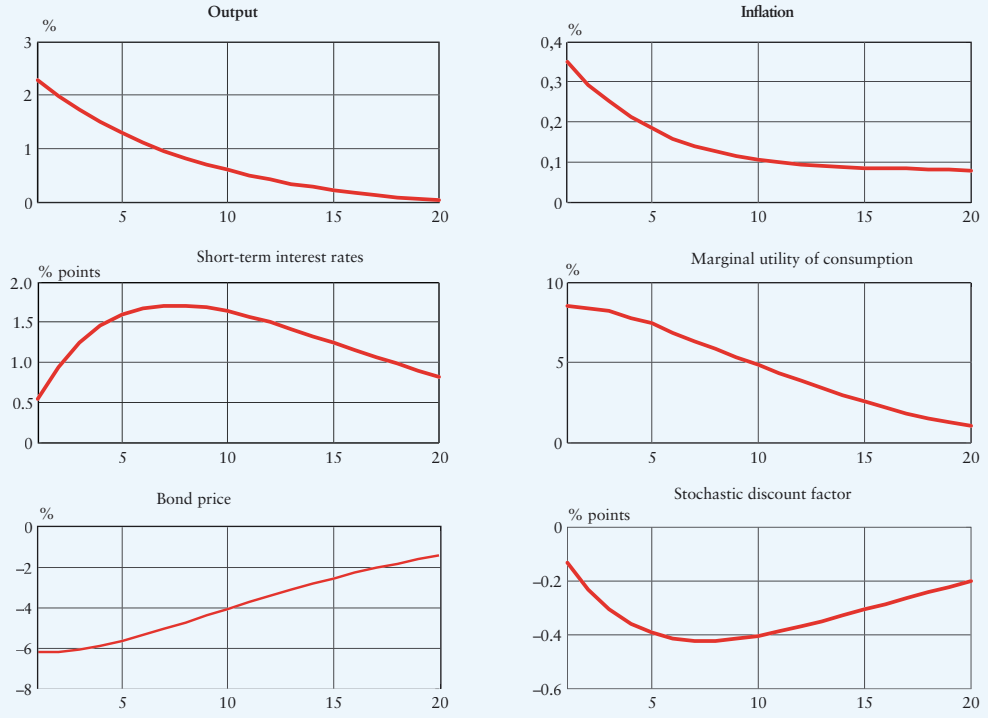
increasing labour supply. This, in turn, boosts the marginal utility of consumption. This effect is a consequence of the assumption built into the model that consumption and labour supply are mutually complementary in the household utility function. For its part, the fall in bond prices is a consequence of accelerating inflation and higher interest rates: public expenditure boosts aggregate demand, increasing the pace of inflation. Meanwhile, acceleration in both aggregate demand and inflation leads to higher interest rates via the response of the central bank.

These dynamics are examined in Chart 1. In response to the increase in public expenditure, output rises, inflation accelerates and short-term interest rates rise, but the marginal utility of consumption increases. Correspondingly, the price of bonds declines.

It is worth noting that a negative productivity shock, too, can produce similar responses in the variables. In principle, interest rate shocks can also lead to the same types of reactions, but,

Chart 1.

Response of key model variables to an increase in public expenditure



The chart presents the model's impulse responses in relation to certain key variables when public expenditure is increased by 1%. The changes are interpretable as percentage or percentage point (interest) changes relative to the baseline model. The horizontal axis present the passage of time in quarters of a year.
Source: Christoffel, Jaccard & Kilponen (2011).

as the variance decomposition suggests, the significance of interest rate shocks in explaining cyclical fluctuations is fairly marginal in this model.

Fiscal policy cyclicality and the risk premium

With public expenditure fluctuations explaining in the model a substantial proportion of the business cycle, the next interesting question is the extent to which the pro- or countercyclicality of fiscal policy affects the risk premium on bonds.

The significance of the pro- or countercyclicality of public expenditure from the perspective of the risk premium on bonds can be studied in the model by estimating how much the risk premium will change if the response of public expenditure to the output gap is changed relative to the baseline model.

In practice, the strength of public expenditure countercyclicality is changed in the model by varying the parameter φ_{GY} in the fiscal rule equation

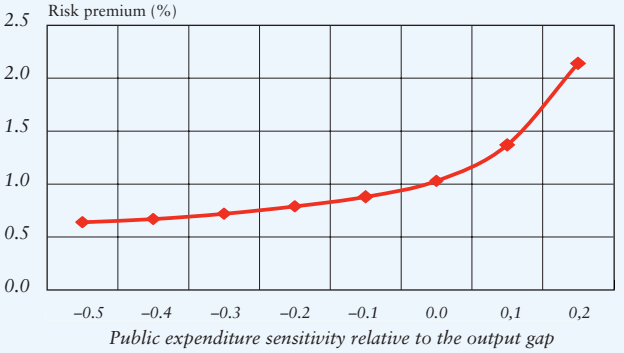
$$\widetilde{G}_{Y,t} = \varphi_{GY}\widetilde{Y}_t - \varphi_{GB}\widetilde{D}_{Y,t} + \varepsilon_t$$

where $\widetilde{G}_Y$, $\widetilde{Y}$ and $\widetilde{D}_Y$ are the ratio of public expenditure to output, the output gap and the deviation of the debt ratio from its target level. φ_{GY} and φ_{GB} are parameters that depict the sensitivity of public expenditure relative to the output gap and the deviation of the debt ratio from its target level. ε_τ is a normally distributed error term that can be interpreted as an unexpected exogenous change in public consumption (ie a public consumption shock).

In the baseline model, public expenditure is countercyclical; in other words, the ratio of public expenditure to GDP tends to decline during an economic upswing and grow during a downswing (in the above equation, parameter φ_{GY} is negative). This could be a consequence of automatic stabilisers, but also of systematic fiscal policy decisions, such as if the government supports aggregate demand in the economy during a downswing by increasing public expenditure. In the baseline model, the risk premium on bonds is 0.72%. In other words, households require a 0.72% better yield from bond investments than the yield on a corresponding risk-free security.

Chart 2.

Risk premium and the degree of procyclicality in fiscal policy



The chart presents the mutual interdependence in the model of the risk premium and a procyclical fiscal policy. In the model, the latter is varied by altering the sensitivity of public expenditure relative to the output gap (horizontal axis) while the other parameters of the model remain unchanged. Fiscal policy procyclicality grows as the values on the horizontal axis grow. The vertical axis gives the risk premium generated by the model as a percentage. The risk premium is calculated in the model as the difference between the yields on risk-bearing and risk-free securities. In the baseline model, the risk premium is 0.72%.
Sources: Christoffel, Jaccard & Kilponen (2011) and calculations by the author.

If we examine in the form of a graph (Chart 2) how the risk premium on bonds changes when the countercyclicality of public expenditure is changed – with other factors unchanged – we can see that, as public expenditure moves from being countercyclical to being mildly procyclical, the risk premium grows substantially. Correspondingly, public expenditure that is more countercyclical produces a smaller risk premium than the baseline. An increase in the risk premium as a consequence of a more procyclical fiscal policy reflects primarily stronger business cycle fluctuations, as the fluctuations in output, inflation and interest rates increase.

The significance of monetary policy

Procyclical fiscal policy amplifies the cyclical fluctuations in the economy and leads to a larger risk premium. If expenditure is increased during an economic upswing, the excess demand generates price pressures and leads to higher inflation expectations (and, on average, the fluctuations in inflation will also grow). Higher inflation expectations erode the real return from bonds and hence depress bond prices. In principle, the central bank can seek to compensate the higher variability of inflation by responding more aggressively to inflation. Simulations show that this can moderate the inflationary fluctuations, but at the cost of higher fluctuations in interest rates. Increased interest rate fluctuation amplifies the risk premium. Thus, a procyclical fiscal policy creates less favourable conditions for stabilising the macro economy, because the increase in the risk premium caused by a procyclical fiscal policy is difficult to compensate with interest rate policy.

A procyclical fiscal policy can increase the costs of servicing public debt

In order to bring the European debt crisis under control, a number of decisions have been taken to increase the discipline of fiscal policy. In particular, the structural deficit target to be applied during economic upswings will restrict the temptation of Member States to pursue a procyclical fiscal policy that amplifies bisness cycle fluctuations. In the present article, we have analysed with the help of a general equilibrium model the connection between fiscal policy rules, and particularly the degree of fiscal policy countercyclicality, and the risk premium on sovereign bonds. Model simulations support the view that a countercyclical fiscal policy is beneficial to the economy not just because it moderates business cycle fluctuations, but also because the interest paid on bonds issued to finance public expenditure is then substantially reduced. A procyclical fiscal policy reduces households' (investors') willingness to invest in sovereign bonds. To compensate, households require a higher return on the bonds, which in turn pushes up the costs of funding public expenditure. Model simulations

also show that when fiscal policy amplifies business cycle fluctuations in the economy, it is more difficult for monetary policy to stabilise the macro economy.

Keywords: fiscal policy, business cycle fluctuations, risk premium, monetary policy

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How have emerging economies changed global price trends?

10 September 2012

The global economic crisis has kept domestically generated inflation pressures at moderate levels in advanced economies in recent years. As a consequence of the crisis, abundant spare production capacity has been available and domestic demand has been slow to regain momentum. By contrast, in many emerging economies, inflation has picked up markedly since 2009, as these economies suffered from the crisis considerably less and have recovered quickly. Due to the substantial rise in the weight of emerging economies in the world economy during the last decade, these countries also have a significant impact on global inflation. This article aims to outline the magnitude, channels and longer-term trends of this impact.

Emerging economies and global price trends

Departing from its earlier trend, global inflation has started to accelerate slightly after the most severe phase of the international economic crisis (Chart 1). By product group, this is discernible in energy and food prices, whereas the rise in the prices of other goods has remained subdued. It has been estimated that the impact of emerging economies is one important factor in boosting global inflation pressures. Although long-term inflation trends are determined on the basis of monetary policy, inflation over the short term may vary, driven by a number of factors. In the first years of the new millennium, advantageous production costs and rapid improvements in productivity in emerging economies still had a dampening impact on global inflation, but this effect may now be petering out. Most emerging economies have recovered from the international economic crisis more rapidly than advanced economies, and the output gap in the former is estimated to have already turned positive. At the same time, labour costs have continued to grow at a brisk pace.

In the wake of deepening globalisation, the contribution of emerging economies to inflation trends in the advanced economies has also increased. Emerging economies already account for half of world GDP (in terms of purchasing power adjusted data), and China alone has developed into the world's largest exporter, with its 10% share of global goods exports. Recent research[1] has found evidence suggesting that, in the advanced economies, the

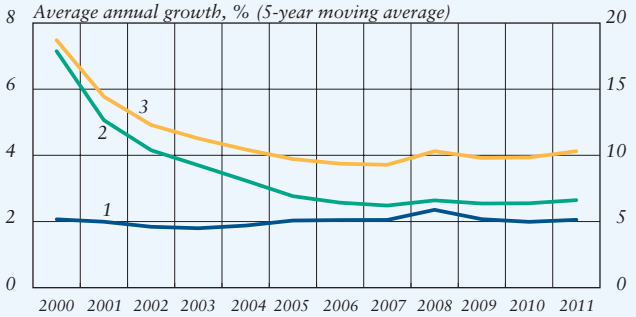
Heli Simola
Economist
Monetary Policy and Research

[1] Eg Borio – Filardo (2007), Ciccarelli – Mojon (2010).

Chart 1.

Consumer prices in advaced and emerging economies, 2000–2011

1. Advaced economies (left-hand scale)
2. Emerging economies (right-hand scale)
3. World (left-hand scale)



Source: IMF.

impact on inflation from developments in the domestic real economy has decreased, while the role of developments in the global economy has increased.

Emerging economies may influence inflation trends in the advanced economies via several different channels. The most apparent channel of influence is imports from emerging economies, the price of which has a direct impact on price movements in the advanced economies. Increasing supply from emerging economies could also have indirect implications for the evolution of prices in the advanced economies. Tightening competition on international markets caused by the emerging economies may lower the general global price level and, by extension, the prices of goods imported from all countries. Keen competition may also affect domestic producer prices in the advanced economies by forcing companies to be content with lower profit margins and by curbing upward wage pressures or enhancing productivity. These factors have the potential to bring down domestic producer prices, or dampen their rise.

Impact of emerging economies via import prices

Imports from emerging economies by the advanced economies has grown vigorously over the past decade. For goods trade, the share of emerging economies in euro area imports from non-euro area countries expanded from 50% to almost 70% in the first post-millennium decade. Similarly, emerging economies increased their share of US goods imports from 40% to well over 60% during the decade.

The prices of manufactured goods imported to the euro area and the United States from emerging economies in the early years of the 2000s did not increase or actually declined (Charts 2a and 2b). Subsequently, the prices of goods imported from South America, Eastern and Central Europe and India began to rise, being joined later by the prices of goods imported from other Asian countries. Nevertheless, the prices of goods imported to the euro area from China and Southeast Asia (ASEAN countries) had at the end of 2011 still failed to reach the level of 2000 (although these price developments also partly reflect exchange rate developments).

Table.

Average impact from prices of goods imported from emerging economies on annual euro area consumer price inflation for manufactured goods, percentage points

	China		*ASEAN**		*South America*		*CEEC***		*Total*		
	Level	*Change*	*Level*	*Change*	*Level*	*Change*	*Level*	*Change*	*Level*	*Change*	*Total*
2000–2005	*–0.06*	*–0.03*	*0.00*	*–0.02*	*0.00*	*0.00*	*–0.03*	*0.02*	*–0.10*	*–0.03*	*–0.13*
2006–2011	*–0.10*	*0.00*	*0.00*	*0.00*	*0.00*	*0.01*	*–0.04*	*0.02*	*–0.14*	*0.03*	*–0.11*

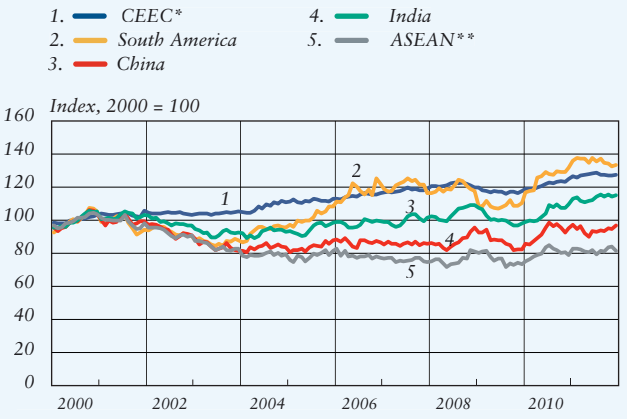
Source: Eurostat.
Level = impact of the price level differential.
Change = impact of the rate of change in prices.
** Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand, Vietnam.*
*** Poland, Chech Republic, Hungary, Romania, Bulgaria, Latvia, Lithuania, Estonia.*

Although emerging economies have had a pronounced impact on the import prices of advanced economies, the consequent effects on the evolution of consumer prices have, at least so far, been modest, according to several studies.[2] Research focusing on 1995–2005 has found that imports from emerging economies have eased annual consumer price inflation in the various advanced economies by 0–0.3 of a percentage point. This can be largely explained by the fact that products manufactured in emerging economies still account for a fairly small proportion of total consumption in the advanced economies. Although the share of these products in, for example, US imports and euro area imports from outside the euro area is already more than half, the share of total imports in domestic consumption remains at 10–15%. Thus, the emerging economies account for less than a tenth of total consumption.[3]

Given that earlier studies have only extended up to the first years of the 2000s, it is also worthwhile examining developments in the euro area in the last few years (Table). The calculations presented here can be considered mainly indicative estimates of the magnitude of the impact, as they are simplifications and there are certain inaccuracies in the underlying data.[4]

Chart 2a.

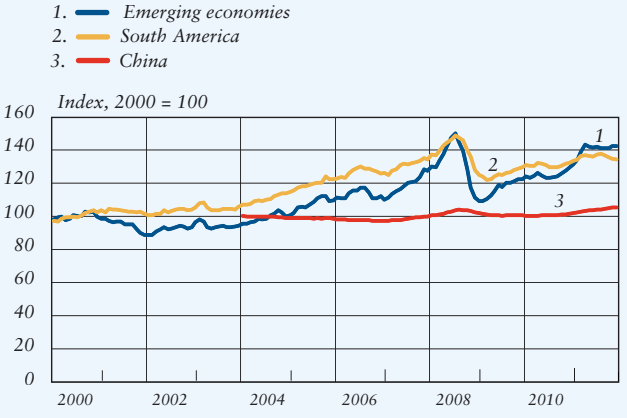
Euro area import unit value index for manufactured goods by region



* Poland, Czech Republic, Hungary, Romania, Bulgaria, Latvia, Lithuania, Estonia.
** Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand, Vietnam.
Source: Eurostat.

Chart 2b.

United States import price index for manufactured goods by region



Source: Bureau of Labor Statistics.

[2] Eg Kamin et al. (2004), Pain et al. (2006), ECB (2008).

[3] Eg Hale – Hobijn (2011) estimate that China's share only represents less than 3% of US private consumption expenditure in 2010.

[4] The calculations also do not take account of how monetary policy would have changed in the absence of progress in globalisation. See eg Bowen & Mayhew (2008).

In addition, the last few years have been an exceptional period due to the global economic crisis, which adds to the uncertainty surrounding the interpretations. But the effects are of the same magnitude as the estimates provided in earlier analyses.

The calculations make use of the same method as employed in, for example, the studies of Kamin et al. and Pain et al. In this method, domestic consumer price inflation is divided into three sub-components that depend on the price level differential between domestic and imported goods, the difference in the rate of change in prices and developments in domestic producer prices.[5]

When we examine average contributions from both price level changes and the rate of change in prices to euro area consumer price inflation in 2000–2005 and 2006–2011, we find that, of the two, the contribution from the price level has been much more important and dampened euro area inflation in both reference periods (Table). The impact of the rate of change in prices has been smaller, but until recently it has also helped keep upward price pressures in check, as the prices of goods imported from emerging economies have decreased or increased more slowly than domestic prices, and their weight in the consumption basket has grown. However, the contribution from the rate of change in prices has turned from negative into positive in recent years, as the prices of goods imported from emerging economies have risen more rapidly than the prices of goods from the advanced economies.

Impact of emerging economies via increased competition

Increased competition caused by the emerging economies may also be reflected in corporate cost pressures and price-setting behaviour in the advanced economies. Several studies have found that imports from emerging economies have a bearing on, in particular, relative producer prices in the United States and Europe.[6] Viewed by sector, with the market share of emerging economies growing by 1 percentage point, producer prices have been found to decline by 2–3 percentage points. This effect has been concentrated in labour-intensive sectors in particular, where emerging economies have most strongly increased their share in the consumption of advanced economies. The decline in relative producer prices has been found to mainly result from higher productivity growth in these sectors, but net corporate incomes have also been found to contract slightly in response to imports from emerging economies. On top of this, evidence has become available suggesting that imports from emerging economies have eased upward wage pressures.

[5] $$\frac{\Delta P^M}{P^M_{t-1}} = \Delta S\left(\frac{C^E_t - C^M_t}{C^M_t}\right) + S_{t-1}\left(\frac{\Delta C^E}{C^E_{t-1}} - \frac{\Delta C^M}{C^M_{t-1}}\right) + \frac{\Delta C^M}{C^M_{t-1}}$$

Here P^M = the consumer price index in an advanced economy, S = the share of imports from an emerging economy in the domestic consumption of an advanced economy, C^E = the prices of goods imported from emerging economies and C^M = the prices of goods manufactured domestically in advanced economies. For the sake of simplicity, the assumption is for the level of prices of goods imported from advanced economies and the change in prices to be the same as the domestic price level of an advanced economy.

[6] Auer – Fisher (2008), Auer et al. (2010), Chen et al. (2004), IMF (2006), Pula – Skudelny (2007).

A simple review based on the most recent available statistical data also points to a similar connection. When we compare wage developments in different sectors and the share of imports in domestic consumption of a sector's products, it appears that wages have risen slightly more sluggishly in those sectors where the share of imports in domestic consumption has increased by more (Charts 3a and 3b). This connection is not particularly strong, but parallel results have also been obtained in earlier studies concerning the euro area, the United States and Japan.[7] A corresponding comparison between the gross operating surpluses of euro area (Germany, France, Italy and Finland) businesses and the share of imports from emerging economies shows that corporate operating surpluses in 2000–2007 recorded a sharper contraction in those sectors where growth in the share of imports from emerging economies in domestic consumption was stronger.

Although the impact of emerging economies on relative producer prices in the advanced economies has been found to be significant, their contribution to overall producer price performance appears to be much more modest. For example, it has been estimated that, in Europe, imports from emerging economies slowed headline producer price inflation by an annual average of 0.1–0.3 of a percentage point in the 1990s and early 2000s. Moreover, as producer price movements do not necessarily feed through to consumer prices in full, the overall impact may be even smaller.

[7] Eg White (2008).

Impact of emerging economies via commodity prices

Emerging economies – notably China – have in recent years become major consumers of raw materials. They already account for almost half of world oil imports, which since 2007 have grown only in emerging economies. China's share of world iron ore imports has also expanded, to as

Chart 3a.

Share of imports in domestic demand and wages per employee by sector
Change, 2000–2008

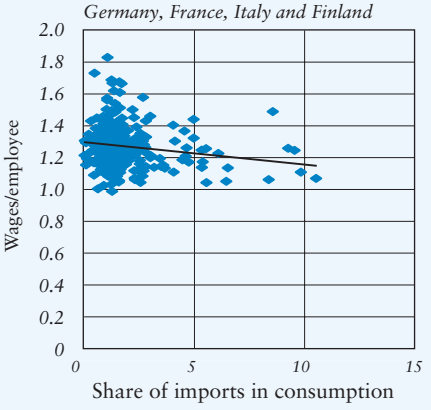
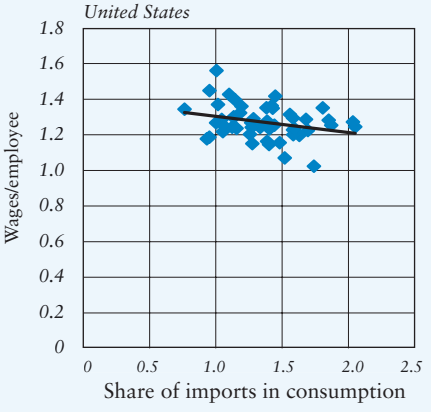


Chart 3b.

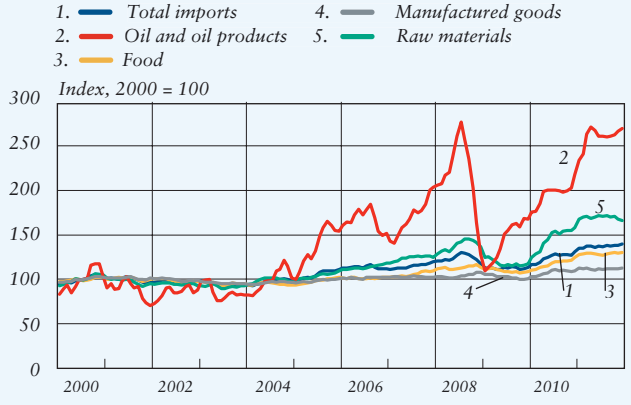


Sources: Eurostat and UNIDO.

much as two thirds, and to almost a half in the imports of many metals, such as unprocessed zinc and copper. Driven by higher income levels, demand for meat, among other things, has grown sharply in emerging economies, which has added to pressures on both meat and feed raw material prices.

Chart 4a.

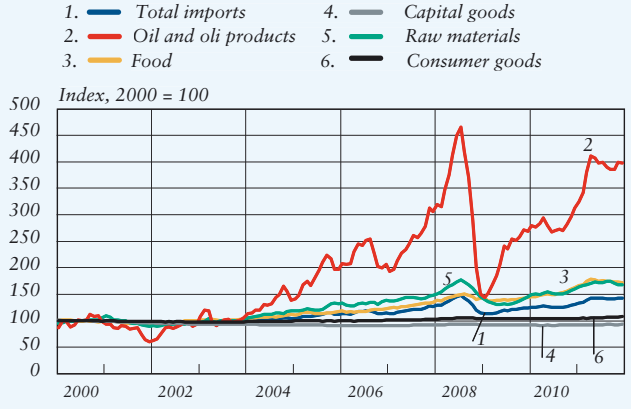
Euro area import unit value index by product group



Source: Eurostat.

Chart 4b.

United States price index by product group



Source: Bureau of Labor Statistics.

According to several studies, the strong increase in demand for raw materials in emerging economies has actually been one of the most important factors in explaining the rapid rise in world market prices for commodities.[8]

As most advanced economies are significant importers of raw materials, changes in commodity prices have a direct impact on the import prices of advanced economies. Accordingly, the rapid rise in the import prices of oil and other raw material commodities in recent years has significantly boosted headline import price inflation in both the euro area and the United States (Charts 4a and 4b).

Changes in the import prices of raw materials are also promptly reflected in consumer prices in the advanced economies. In the euro area, crude oil price changes have been observed to pass through to (pre-duty) fuel consumer prices almost in full within a few weeks. The combined weight of food and energy in the consumer price indices of the euro area and the United States has risen to nearly a quarter in recent decades. Therefore, elevated oil and food prices and their strong volatility often have a significant direct impact on the performance of the total consumer price index. From the viewpoint of monetary policy, it is important to prevent such direct impacts from having second round effects on other prices and inflation expectations. In fact, research findings suggest that the indirect implications of eg oil prices for

[8] Eg Hamilton (2009), Kilian – Hicks (2009), Roache (2012).

euro area consumer prices (via input prices) are moderate.[9]

Growing demand for raw materials is widely expected to continue in emerging economies in the years ahead. The International Energy Agency (IEA) has forecast growing demand for crude oil only in emerging economies, and declining demand in advanced economies.[10] However, as demand in the emerging economies is growing faster than the contraction in the advanced economies, the price of oil will be subject to upward pressures in the years ahead. The price elasticity of oil demand is not particularly strong either, as it is often difficult to find alternative fuels to substitute for oil.

Although demand for raw materials is predicted to continue on an upward trajectory in emerging economies, growth is expected to decelerate to some extent. Economic growth in the country with the strongest demand for raw materials, ie China, is expected to gradually ease and shift from investment-driven to more consumer-driven growth, which is likely to curb growing demand for many industrial raw materials. However, the volume of demand in emerging economies is already so large that even a small increase in demand leads to commodity price pressures, as supply can be augmented only slowly.

In order to increase oil production, many producer countries need to make new oil fields available. But launching new production takes time, and in many cases new production areas are located in places accessible only under more demanding conditions, resulting in higher production costs than before. Moreover, public sector revenues in many large oil producer countries are so dependent on the oil price level that efforts are being made to limit increases in supply in order to keep the price high.

Growth in the production of agricultural raw materials is also estimated to slow in the future, as it is increasingly difficult to mobilise new land areas for agricultural use.[11] The high price of oil, which raises input costs, is another factor that puts agricultural products under price pressure. A further constraint on the supply of both oil and agricultural products often arises from a variety of political or weather-related shocks. Their impact on prices is intensified by the already scarce availability of excess capacity and stocks, precisely because of increasing demand from the emerging economies. Nor do high and rising commodity prices constrain demand growth in all emerging economies as much as elsewhere, because energy and food prices, for example, are often subsidised or price increases in the domestic market are restricted.

Although the emerging economies are the main drivers of growing demand for raw materials globally and have been found to make a pronounced contribution to the evolution of most commodity prices, several studies suggest that the impact of the emerging economies on commodity prices still continues to be smaller than that of the

[9] ECB (2010, 2012).
[10] IEA (2011).
[11] FAO (2012).

advanced economies. In particular, the dynamics of the real economy in the United States has been found to play a decisive role in commodity price formation. Even so, the impact of emerging economies on commodity prices is increasing all the time, and it may also lead to growing upward pressures on other prices in the future.

Emerging economies assuming a stronger role in global price trends

The impact of emerging economies on inflation in the advanced economies has strengthened substantially in recent years as their weight in the global economy has grown and their participation in the global division of labour has increased. Emerging economies appear to have slightly curbed the rise in end-product prices on global markets but accelerated commodity price increases.

Products imported from emerging economies still account for a fairly small proportion of domestic consumption in the advanced economies, which attenuates the impact of the former on the evolution of prices in the latter. Moreover, many products manufactured in the advanced economies cannot yet be replaced by those manufactured in the emerging economies, which reduces competitive pressures on producers in the advanced economies. Imports from the emerging economies may also affect mainly relative prices rather than aggregate price developments. As the prices of products imported from the emerging economies decline, the prices of domestic products or services may correspondingly rise, because of consumers' ability to pay more for the products. This may have been partly why services prices in, for example, the euro area rose more rapidly than goods prices in the first post-millennium decade.

Emerging economies have also had an impact on inflation in the advanced economies via commodity prices, as the rapidly rising demand in emerging economies has contributed to a strong boost in commodity prices. It is, however, difficult to estimate the extent to which the rise in commodity prices is due, specifically, to the emerging economies. Emerging economies have only been truly important economically on a global scale for a very short time. Moreover, the last decade was generally an exceptional period in the global economy, as rapid growth turned into a deep economic recession. It is therefore difficult to distinguish the effect of emerging economies from other factors.

The impact of emerging economies on price trends in the advanced economies is likely to strengthen in the coming years, with their increasing importance in the global economy. Growing imports of end products from emerging economies should curb future inflation pressures in the advanced economies, as the price level of emerging economies is still markedly lower than that of the advanced economies. However, the prices of goods imported from emerging economies have started to rise in recent years. Upward pressures are also likely to prevail in the future as products manufactured in emerging economies

become more sophisticated, their wages rise rapidly and domestic consumption expands. Not even in the emerging economies will new cheap labour be as readily available as before. Accordingly, going forward, the dampening effect on inflation from the emerging economies is likely to be smaller. In addition, the ongoing higher demand for raw materials in the emerging economies will also lead to upward pressures on commodity prices in the future, and thus on price developments in many advanced economies. In recent years, however, many emerging economies have started to pay more attention to establishing monetary discipline and holding inflation under control, which will support a more stable evolution of global prices over the long term.

Keywords: consumer prices, producer prices, import prices, emerging economies

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