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EUROSYSTEMET

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The cover picture depicts the national motif on  
the French 50 cent coin: The sower.

# Monetary policy and economic outlook

3 December 2010

The recovery of the global economy from the financial crisis and resulting recession has been marked by two strongly divergent trends. The emerging economies have performed well, while the advanced economies have been much slower to climb out of recession. In many countries, high unemployment and low levels of capacity utilisation have kept inflation in check, and this is reflected in the continuation of accommodative monetary policies. On the other hand, rising prices of raw materials and food have boosted inflation in many emerging economies and led to a tightening of monetary

The pace of recovery from the recent financial crisis varies widely from country to country. Because the crisis has put a brake on growth in the advanced economies, global growth has depended largely on the emerging economies (Chart 1). Growth in Asia has been especially robust thanks to China's highly stimulative economic policy. The emerging economies' performance is also reflected in international trade, which has rebounded faster than expected after a steep decline. The flip-side of the growth in trade is that current account imbalances have again begun to grow, which has raised concern about exchange rate regimes.

Although the global role of emerging economies has strengthened, a continuation of domestically driven growth at the current pace in these countries will be highly uncertain if

policy. Overall, the global economy remains vulnerable, and, in particular, the sovereign debt crisis in Europe has increased uncertainty on the financial markets. Large public sector deficits have limited the scope for economic policy in many countries even as weaknesses in the labour and housing markets add to the prevailing uncertainty. To date, the rapid growth in emerging economies has served as a stimulus to the global economy, but a continuation of growth at the same pace is highly uncertain unless the advanced economies are able to provide some additional stimulus.

the advanced economies continue to post sluggish growth rates. The uncertainty is due to the fact that a large portion of the products of developing economies continues to go ultimately to consumers in Europe and North America.

Chart 1.

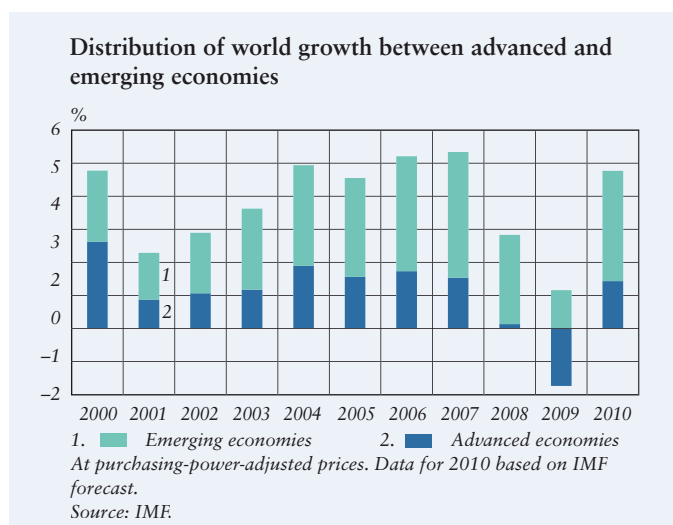
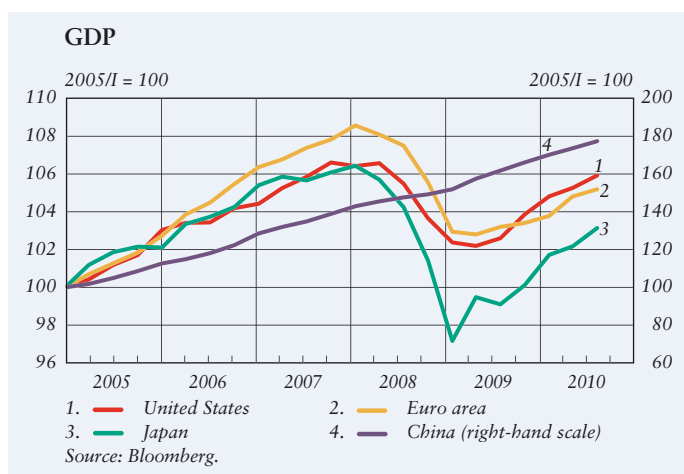


Chart 2.



### Financial crisis continues to restrain growth

Many advanced economies have been very slow to recover from the financial crisis. Although recovery began apace in the United States and Japan, the pace slowed in the spring as export growth eased and national stimulus packages lost their effectiveness even while post-recession restocking of inventories began to wane (Chart 2). Growth in the euro area did not begin to recover until early summer, and it has since slowed, as in the rest of the world.

Generally speaking, the effects of the financial crisis are still being felt in the advanced economies. Bank lending, which has been held back by the crisis, is only now starting to pick up. According to surveys, credit conditions have been tightening gradually since the outbreak of the crisis, and only in the last few months have some tentative signs of easing been detected in some sectors.

The collapse of the real estate market is also restraining growth in many countries. The substantial decline in house prices has taken a large bite out of household wealth, which is slowing growth in consumption. The price decline has put millions of households under water, where liabilities exceed assets. These households (for example in the United States, where housing loans usually carry fixed interest rates) are unable to benefit fully from accommodative monetary policy because

Chart 3.

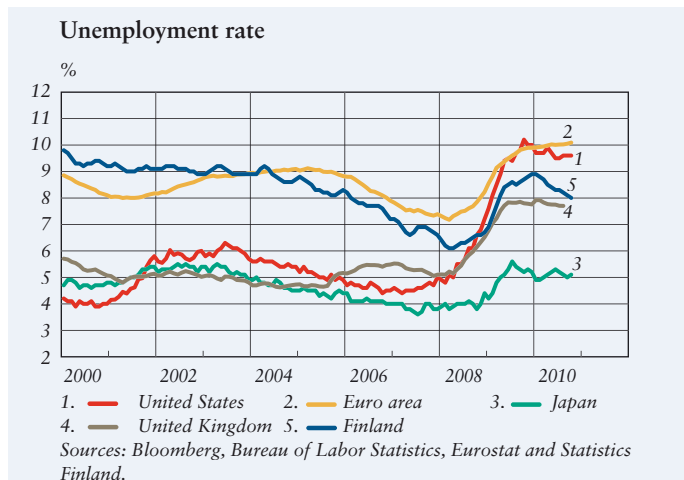
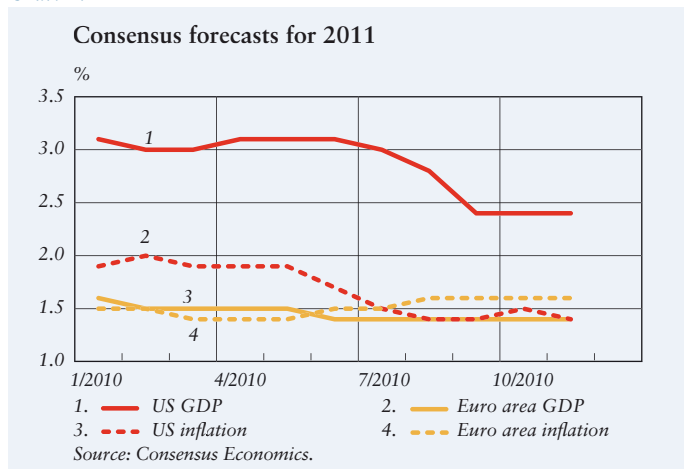


Chart 4.



refinancing at lower rates requires partial self-financing. The decline in real estate prices and current oversupply in the housing market have also greatly reduced construction investment in many countries.

Another negative is the spate of oversized public sector deficits left over from government stimulus packages, which will make it difficult to pursue growth-oriented policies in the future. More likely, we will see cuts in government spending and increases in taxes. In many countries, restoration of government finances is held back by high levels of unemployment that weaken the outlook for household income and increase the level of uncertainty (Chart 3). In response to the increased uncertainty, households have begun to save more, which is slowing growth in consumption. On the other hand, a higher saving rate will strengthen household asset positions.

US growth has slowed considerably in the course of the current year, and the prospects for next year have weakened (Chart 4). A matter of some concern is whether consumption and investment can drive economic growth at a time when the stimulative effects of both the inventory cycle and federal stimulus measures are diminishing (Chart 5).

So far, household consumption has been on a steady growth path, but the speed of recovery has been slow compared with previous recessions. Weakness in the labour

and housing markets has increased the uncertainty, and households have responded by saving more. The rate of economic growth has been too low to reduce the unemployment rate, which is still nearly 10% (Chart 3). The high unemployment is partly responsible for an increase in nonperforming housing loans, and the spate of forced home sales is putting

Chart 5.

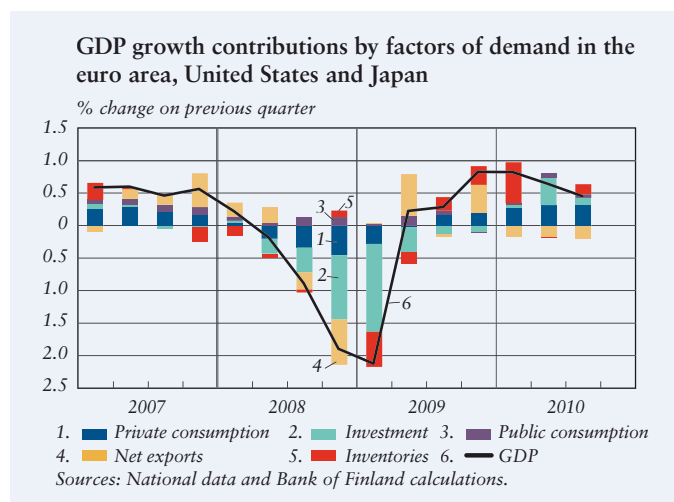
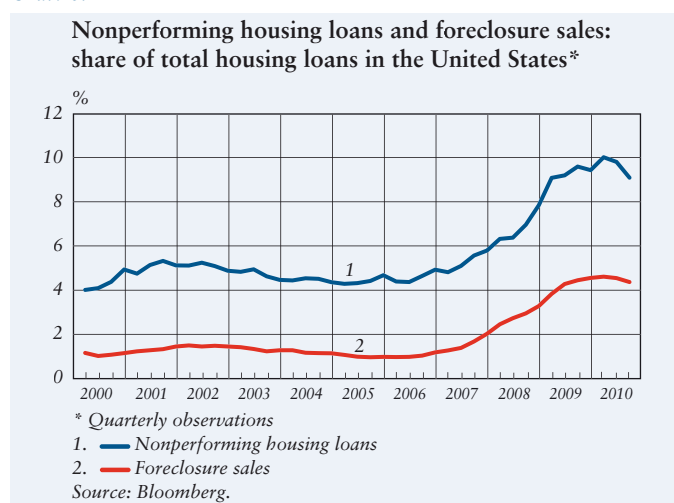


Chart 6.



*Recovery from the financial crisis has been different in different parts of the world.*

downward pressure on house prices (Chart 6). At the same time, there is a paucity of housing construction in progress, nor does the low rate of real estate occupancy bode well for an improvement in the coming months.

One bright spot in the outlook for the US economy has been the robust growth in profits, which is the flip-side of the widespread layoffs and resulting jump in productivity. It is hoped that the positive developments in company finances will result in more hiring and more investment in machinery and equipment, which are still below pre-recession levels.

Japan has also been slow to recover from recession. A pick-up in GDP growth in the third quarter was largely due to remnants of growth-oriented measures, and eg manufacturing has been on the decline for several months running. Export growth has also slowed in conjunction with the appreciation of the yen. Deflation has resulted in a rise in real incomes, which has improved the outlook for retail stores despite an unemployment rate lodged in the region of 5% (Chart 3).

For the emerging economies, the peak phase of growth would appear to be over, albeit growth there is still fairly robust. China bounced back swiftly from the financial crisis; its GDP in July–September was 9.6% higher than a year earlier. China has begun to dismantle its stimulus programme and has been trying all year to cool its overheated real estate sector. Economic growth there is

broadly based, although the focus has shifted slightly from domestic demand back to export demand, as investment growth – previously supported by the stimulus package – has slowed. Domestic household consumption is buoyed by rapid growth in incomes.

China's foreign trade recovered quickly from the financial crisis: both exports and imports are above pre-crisis levels. However, in recent months, falling rates of replenishment of raw material inventories and of investment growth have constrained growth in imports, so that China's balance-of-trade surplus is again on the rise.

Russia's recovery from the recession has also slowed notably during the current year. The sluggish movement of real wages has hampered recovery in consumption, whereas investment has revived in recent months. Rapid growth in imports has had a constraining effect on GDP growth and has reduced the trade surplus.

Latin America, led by the area's largest economy, Brazil, has posted a rapid recovery from the financial crisis. Robust growth has been achieved via successful economic policies and stimulus measures, accommodative monetary policies worldwide, and the high level of raw material prices. In the last few months, however, the slowing of the recovery in the United States and other countries has already had an impact on the countries of Latin America.

## Current account imbalances expanding again

As a result of the financial crisis, world trade shrank by nearly a third in late 2008 and early 2009. The decline in output provides only a partial explanation for the collapse; researchers have found a number of contributing factors.<sup>1</sup> The recession-driven decrease in investment and rundown of inventories both helped to precipitate the decline in trade. The international chain of production also played a role here. In the modern age, when goods start to gather on store shelves, production and trade in both final and intermediate goods halts almost immediately. The problems springing from the financial sector also had a dampening effect on international trade.

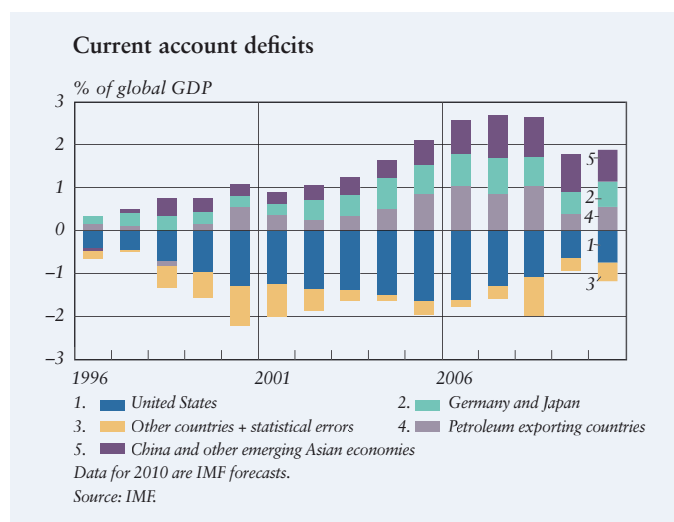
On the other hand, the recovery in trade proceeded faster than expected once the most acute phase of the financial crisis was over and the restocking of inventories to prior levels had begun. International organisations estimate that world trade will grow by more than 10% this year and will reach the pre-crisis level fairly soon.

The recovery in world trade has meant the pre-crisis current account imbalances are growing again (Chart 7). These imbalances arose towards the end of the 1990s and grew rapidly in the latter half of the following

decade. In the initial stage, the protracted nature of the US current account deficit was the focal point, but the imbalances expanded because of surpluses in the oil producing countries as well as in Germany, Japan, and several of the emerging Asian economies, including the largest one, China. Investment flows to the countries running a current account deficit pushed down the level of interest rates and thus contributed to increases in consumption and in the propensity to borrow. The financial crisis and resulting swift collapse of trade, along with the decline in raw material prices, temporarily reduced the surpluses and deficits. But the recovery in raw material and energy prices and trade volumes led to renewed expansion of the current account imbalances.

Structural reductions in the imbalances via a permanent shifting

Chart 7.



<sup>1</sup> See eg Amiti and Weinstein (2009), Exports and Financial Shocks, NBER Working Paper 15556; Bricongne, Fontagné, Gaulier, Taglioni and Vicard (2010), Firms and the global crisis: French exports in the turmoil, ECB Working Paper 1245; and IMF (Oct 2010) WEO Chapter 4, Do Financial Crises Have Lasting Effects on Trade?

of focus in countries with large current account surpluses towards domestic consumption and in deficit countries towards export-oriented production will take a considerable amount of time. For this reason, the growth in the imbalances has induced discussions about exchange-rate adjustments that could fairly quickly reduce the imbalances.

The discussions have focused on attempts by several countries, especially China, to actively influence the external values of their currencies so as to preserve their competitiveness. Besides affecting trade flows and hence output structure, exchange rate linkages also place constraints on a country's monetary policy. If the country is unable to effectively control capital flows, it will be forced to adhere to the monetary policies of the country against whose currency it wants to maintain a fixed exchange rate. For example, raising local interest rates above the level in the anchor country could cause an abrupt capital inflow that is large relative to the size of the domestic economy, which could bring an increase in inflationary pressures. Thus the cross-country differences in speed of recovery from the financial crisis have underlined the problems connected with currency linkages: the monetary accommodation practiced in the advanced economies is out of sync with the more quickly rebounding emerging economies.

The situation in the emerging economies is made more difficult by

the exceptionally low level of interest rates in the United States, Europe and Japan, which has enlarged the capital flows into the emerging economies. The exceptionally large inflows have increased the pressure for a swift appreciation of the domestic currency, credit growth, higher asset prices and, finally, higher inflation. The countries on the receiving end of the capital flows have taken a variety of actions to alleviate the situation. Several countries, eg Brazil and Thailand, have tried to create space for domestic monetary policy by placing administrative controls on capital movements.

Unlike many other emerging economies, China tightly controls the flow of capital across its borders. Although it is well known that there are occasional leakages in the system, especially when upward pressure on the renminbi is strong, short-term investment flows into China are still not excessive, given the size of the economy. For this reason, China is able to pursue its own monetary policy and keep its interest rates high relative to US rates, even while the renminbi continues to closely track the US dollar. In its conduct of monetary policy, China also relies heavily on direct orders and guidelines on the growth of money and credit. The use of these policy tools is helped by the state's extensive ownership of banks. The losers in the monetary regime are Chinese commercial banks, which are obliged to hold a large share of their assets in very-low yielding certificates

*The different rates of recovery in different economies has underlined the problems of exchange-rate linkages.*



of deposit issued by the central bank. Another side effect of China's exchange rate policy is that its huge stock of international reserves is not only currently earning extremely low yields but will inevitably fall in value in terms of the renminbi once the currency finally does appreciate.

### Increased divergence among European countries

The euro area has been slower than other economic regions to embark on recovery from recession. Brisk growth performance was not achieved until spring 2010. And preliminary data indicate a renewed slowing of growth already in the third quarter of the year, when GDP was only 0.4% higher than in the previous quarter.

Developments have diverged across the euro area, and growth has depended largely on the strong performance of the German economy. Germany has benefited from its strong competitiveness and has managed to increase its exports to emerging economies such as China. Domestic demand in Germany – both household consumption and commercial investment – has also begun to recover. On the other hand, in those euro area countries where house prices have dropped drastically, as in Spain and Ireland, economic growth has not yet commenced in earnest. In many countries, consumption growth is hindered by high levels of unemployment, despite the beneficial effects of Germany's employment

performance for the euro area as a whole (Chart 3). On the other hand, the slowing of global economic growth is already reflected in the easing of growth in industrial production, and, with capacity utilisation mired at a low level, investment is lacklustre.

Overall, the euro area is still marked by a high degree of vulnerability. Of particular concern is the weak state of government finances in many countries. The stimulus packages that decreased the adverse effects from the recession and the decline in tax revenues due to poor economic performance are causing exceptionally large government deficits. The point has been reached where the large government deficits and growing debts sharply curtail the scope for economic policy, but reducing them now and over the coming years is made difficult by the economic weakness of the countries concerned.

Greece, confronting the worst situation last spring, concluded an agreement in May with the IMF and EU whereby it has access to EUR 110 billion of financing and other support. The package provides financing for at least up to the end of 2011. When this turned out to be insufficient to calm the financial markets, the EU decided on a broader package of measures in order to stabilise the markets.<sup>2</sup>

During the autumn, there was increased concern regarding

*In the euro area, a particular concern has been the serious problems with the public finances in many countries.*

<sup>2</sup> The package is discussed in more detail in Bank of Finland Bulletin 1/2010.

particularly Ireland's ability to attract finance (Chart 8). Ireland estimated in early autumn that the one-off cost of saving its banking system would enlarge its public sector deficit to more than 32% of GDP in the current year. Even without the support package, the deficit was set to reach 12.9% of GDP due to the weak performance of the economy. At the end of November, Ireland reached agreement with the EU and the IMF on a four-year financial support package worth EUR 85 billion. Ireland's own contribution to the package is EUR 17.5 billion, with the IMF providing EUR 22.5 billion. The stabilisation mechanism agreed by the EU and the euro area countries in May is to provide around EUR 40 billion, with the United Kingdom, Sweden and Denmark providing a combined total of just under EUR 5 billion via bilateral credit agreements with Ireland. In line with the closely related reform

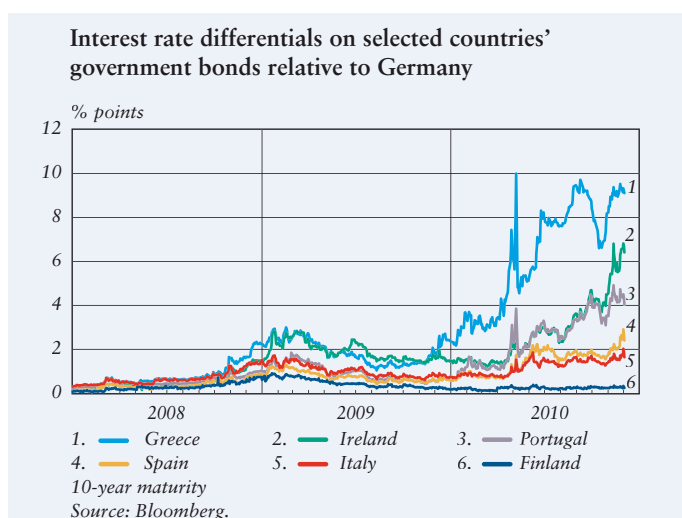
package, the financial package will be broken down into several distinct areas: capitalisation and reform of the banking sector, restoring the health of general government finances and measures to boost economic competitiveness and employment.

At the same time, the euro area countries decided to change the stabilisation mechanisms agreed in May into a single, permanent crisis management mechanism. As part of this reform, it was also decided that, as of June 2013, government bonds issued in the euro area will have collective action clauses attached to them that will permit any debts to be rescheduled by agreement between a majority of the creditors rather than requiring unanimity.

The measures taken at the end of November have not so far succeeded in calming the financial markets. Several euro area countries are burdened with sizeable current account deficits (see Box chart), reflecting not only their weak competitiveness but also their dependence on external finance. One encouraging sign is that some of these countries have managed to reduce their deficits in the midst of a financial crisis and the resulting recession.

Despite some easing, growth in the United Kingdom continued at a relatively fast pace in the third quarter of this year. Preliminary data indicate that GDP in July–September was 0.8% higher than in the previous quarter. Both the construction and

Chart 8.



financial sectors have shown signs of a pick-up. The new government has announced large budget cuts for the coming years in an effort to revive the public finances.

The Swedish economy continued to post strong growth throughout the early part of the year. In July–September, output was up 2.1% on the previous quarter and has already returned to the pre-recession level. Growth was bolstered by a jump in exports, domestic consumption and investment, and also by extensive restocking of inventories early in the year. During the autumn, however, growth in exports slowed as a consequence of a substantial appreciation in the krona, which is now also reflected in flatter growth in industrial output.

### Inflation remains subdued

The restrained economic recovery has kept inflation in check across much of the global economy (Chart 9). In Japan, rising food prices resulted in October in a positive change in the annual rate of consumer prices for the first time in almost two years. US consumer inflation has slowed in the course of the year to just over 1% per annum. Core inflation (price rises excluding energy and food prices) has been even more subdued. In the euro area countries, preliminary data indicate that annual HICP inflation was around 1.9% in November, and it is expected to slow during the course of 2011. Core inflation (HICP

excl. energy and fresh food prices) has stayed in the region of 1%, as in the United States.

In several emerging economies, robust economic growth, large capital flows and, most importantly, the rapid rise in food and raw material prices on the world market have notably boosted inflation. For instance, China's annual inflation rate rose to 4.4% in October (Chart 9).

Chart 9.

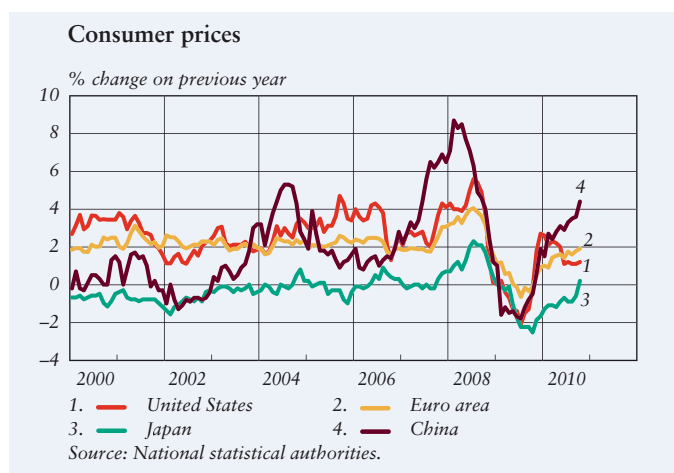
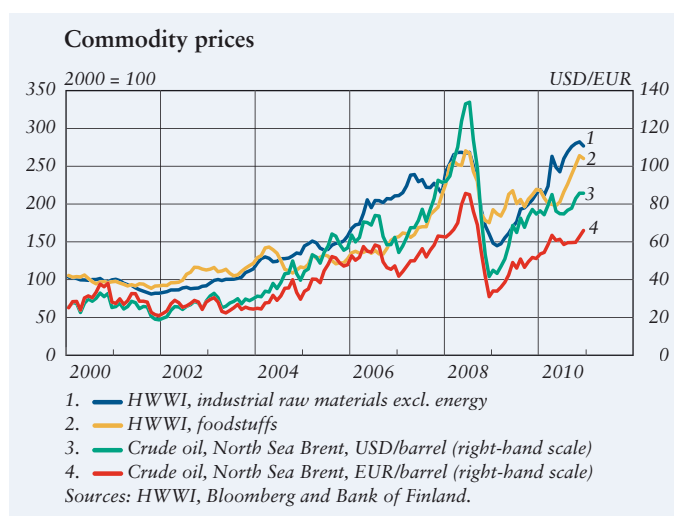


Chart 10.

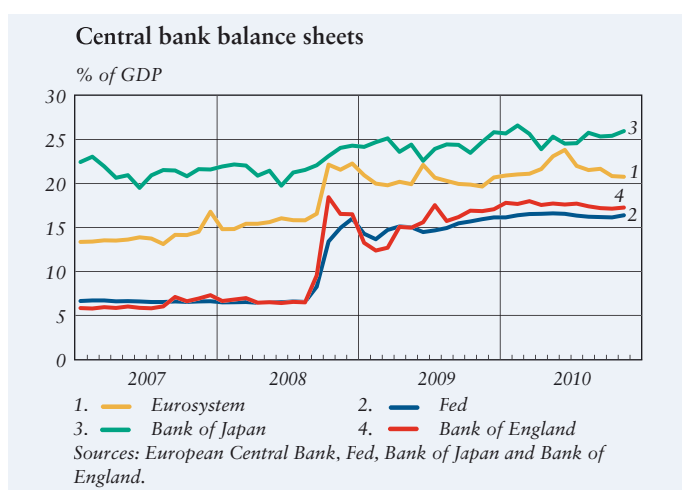


This rise is, however, due almost solely to food prices, whereas the positive trend in productivity has constrained the pass-through of wage increases into prices of final goods.

In contrast to the emerging economies, raw material and food prices have only moderate effects on the CPI in the advanced economies. Oil prices, on the other hand, weigh heavily in both country groupings. In recent months the barrel price of oil has risen from just over USD 70 to nearly USD 90. At the same time, the euro price has risen close to EUR 70 (Chart 10).

In a number of advanced economies, including the euro area, inflation continues to be subdued by the low levels of capacity utilisation. In the euro area, unit labour costs have also begun to decline in the current year. The rise in aggregate wages is in turn being restrained by the persistent high level of unemployment.

Chart 11.



## Wide differences in monetary policies

In those countries that have recovered rapidly from the recession, monetary policy has gradually become less accommodative. Among the advanced economies, interest rates have risen in eg Australia, Canada, Norway, Sweden and New Zealand. In the emerging economies, monetary tightening is already a commonplace. China began to tighten almost a year ago via more demanding credit conditions in the real estate sector. In recent months, China has also raised banks' reserve requirements as well as the reference interest rates for loans and credit. Inflation has nonetheless kept real rates low; for deposits they are clearly in negative territory. Also among the large emerging economies, India and Brazil have switched to monetary tightening.

Meanwhile, in the euro area, United States and Japan, modest inflationary pressures have enabled a continuation of accommodative monetary policies. Besides low policy rates, central banks continue to employ non-standard measures to ensure an abundance of liquidity for the financial system (Chart 11). Although a revival of interbank markets and a return to economic growth enabled some initial winding down of non-standard measures already from around the end of 2009, the government debt crises in the euro area and the growth slowdowns in the United States and Japan have

forced the central banks to resort again to non-standard measures.

The Eurosystem has held its policy rate at 1% since May 2009. Banks' excess liquidity diminished during the spring and autumn, and as a result short-term market rates have risen from below the policy rate to the same level and sometimes even higher. Since the middle of October, the 3-month Euribor has exceeded 1% and the 12-month Euribor has exceeded 1.5%. The reduction of excess liquidity is related to banks' reduced demand for liquidity in connection with the expiration of crisis-related longer-term refinancing operations. The Eurosystem has not actively sought to restrict bank's access to liquidity; instead, it has continued to employ fixed rate tender procedures with full allotment so that banking systems' liquidity demand is fully met. On 2 December, the Eurosystem announced it would continue this practice through the early months of 2011 and would also offer banks funding through 3-month operations with full allotment at interest fixed at the average rate of the MROs over the life of the respective LTRO.

In May, the Governing Council of the ECB decided to take action to combat the market disturbances stemming from the problems of Greece and to ensure the operability of the transmission channels of monetary policy. In the context of the securities markets programme (SMP), the Eurosystem can purchase government

or private debt instruments on the secondary markets. The increase in liquidity caused by these operations is neutralised by one-week liquidity-absorbing operations. By 26 November, deposits collected under the SMP amounted to EUR 67 billion.

The slowing of economic growth has made it difficult for the US Federal Reserve to achieve its objectives – price stability and full employment<sup>3</sup> – and so the Fed has resorted increasingly to non-standard measures in its conduct of monetary policy. As decided in August, resources released from agency debt and agency-guaranteed mortgage-backed securities – totalling about USD 100 billion by the end of November – have been reinvested in government securities. Moreover, the Fed decided in early November to increase the monetary stimulus by purchasing USD 75 billion of US government securities every month on average until June of 2011. This would expand the Fed's balance sheet by about another USD 600 billion (ca. 4% of GDP), but the precise amounts are to be determined in light of ongoing economic developments.

Lacklustre growth prospects also forced Japan's central bank to re-employ non-standard monetary measures. The central bank will

*The ECB, the Fed and the Bank of Japan continue to apply non-standard monetary policy measures.*

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<sup>3</sup> One can generally glean the FOMC's indicative targets for unemployment and inflation from its long-run forecasts. From the June forecast, the targets for the unemployment and inflation rates would appear to be 5.0–6.3% and 1.5–2.0% respectively.

purchase domestic government and private debt instruments totalling JPY 5 000 billion (ca. 1% of GDP) and use refinancing operations to add to market liquidity. Policy rates in both the United States and Japan remain close to zero.

Earlier in the autumn, Japan already acted to restrain appreciation

of the yen (Chart 12). Immediately after the intervention, market expectations of further expansive measures by the Fed weakened the dollar. As a result, the intervention-related yen depreciation against the dollar was rapidly nullified. Overall, the yen has appreciated in the course of the current year, largely because the euro has been burdened by the sovereign debt crisis. Although in summer and early autumn China allowed the renminbi to strengthen gradually against the dollar, the trade-weighted exchange rate of the Chinese currency has appreciated only slightly from a year earlier.

### Finnish economy

The Finnish economy began to recover from recession in the latter part of the spring. In April–June, GDP was 1.9% up on the previous quarter. Preliminary data from Statistics Finland indicate that strong growth continued in July–September, albeit not on a par with the previous quarter. Growth has been driven by a pick-up in exports in the spring and higher levels of domestic consumption and housing construction.

Exports have been led by the traditional industrial sectors: the forest industries, chemicals and manufacture of basic metals. Robust growth in demand, especially in the emerging economies, has driven the increase in Finnish exports. During the recession, the Asian emerging economies have become more

Chart 12.

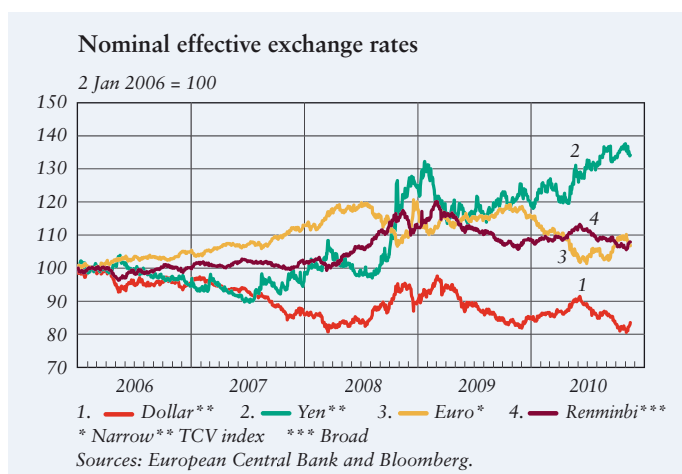
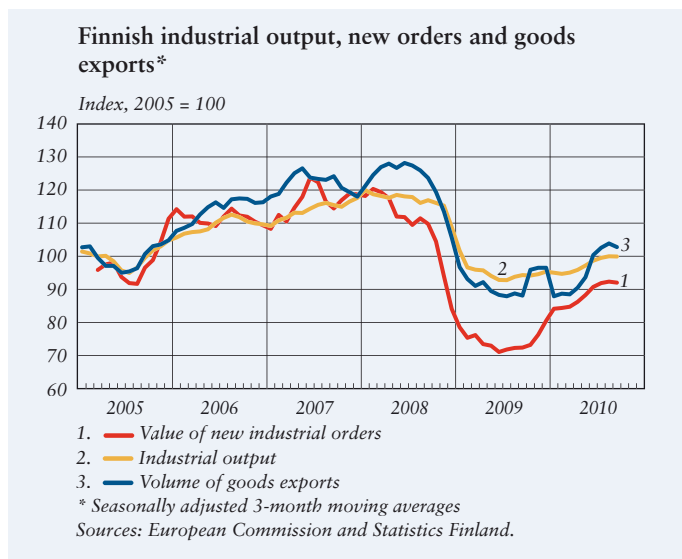


Chart 13.



important for Finnish exporters. Exports have also increased rapidly to the neighbouring countries of Sweden and Russia, both of which recovered rapidly from the recession. In the latter part of the summer, however, the growth in goods exports lost some momentum.

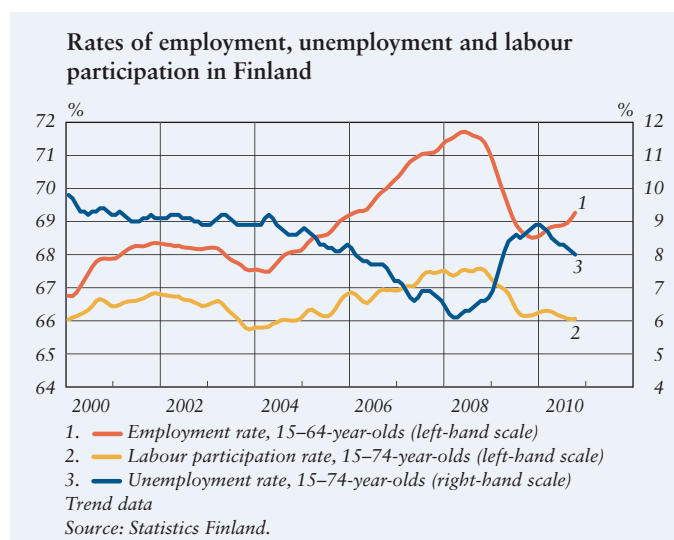
The recovery of exports is also reflected in the growth in industrial output since the spring. But in latter part of the summer, output growth was restrained by slower growth in export demand. The increase in new industrial orders also waned in early autumn. In particular, the rapid recovery in the paper industry seems to be losing steam. Rapid growth has continued during the autumn months in the metal industry, apart from electrical engineering and electronics, where output has remained low since the sharp decline in 2009. The rate of industrial capacity utilisation increased sharply in the early part of the year, but towards the end of the summer it settled in the region of 75%. This means that an abundance of capacity remains unused, both in Finland and around the world, which has a constraining effect on investment in the machinery and equipment sector, and hence on Finland's exports of capital goods.

This year's swift recovery in housing construction notably boosted investment in the sector in the second quarter. Housing construction seems to have increased rapidly in the autumn, too, but a halt in the growth

of housing starts is signalling a slowdown around the end of the year. Increased supply in the housing market is becoming apparent, as the rise in house prices has eased since the late summer.

Private consumption, strong since the spring, is expected to continue to grow in the latter part of the year. The growth prospects for private consumption are strengthened by the improved employment situation, which has boosted households' disposable income and raised consumers' confidence in the economy. In particular, sales of durable goods such as cars increased rapidly in the spring and summer months. The growth in private consumption and exports has also affected goods imports, the value of which rose 15% in January–September compared with a year earlier. With imports growing faster

Chart 14.



than exports, the balance-of-trade surplus has contracted.

The improvement in labour market conditions occurred around the start of the year, and since then the unemployment rate has declined steadily, to 8.0% (seasonally adjusted) in October. Both employment and job vacancies increased in January–October, but the number of persons employed in industry is still falling. Total employment has not increased as rapidly as the decline in the unemployment rate would give cause to expect. The exit from the labour market of baby-boomers is gradually becoming apparent in a shrinking labour supply. The decline in the labour participation rate that began during the recession has indeed continued in the early part of the current year.

The average HICP inflation rate for January–September was 1.4% per annum. In October, consumer prices were a full 2.3% higher than a year earlier. The pick-up was partly the result of a reduction in VAT on food in October 2009, the effect of which disappeared from the inflation statistics in October of this year. Inflation has been boosted this year mainly by higher electricity and fuel prices and housing costs. Moreover, the general rise in VAT in July is reflected in consumer prices. On the other hand, the decline in interest rates from a year ago and the pass-through to restaurant service

prices of the reduction in VAT on restaurant food have had a restraining influence on overall inflation.

Finland's public finances have consolidated during the past half year as tax revenues and pension funds' earnings have begun to increase. Revenue from indirect taxes has already reached last year's level. Besides revenues, public expenditure has also continued to rise. The general government deficit has not been significantly reduced so far this year. The central government deficit increased in the early part of the year to 6.5% of GDP. Although the deficit began to slowly contract in the summer, it is not expected to disappear as a result of economic growth alone. Achieving sustainability in central government finances, and indeed in general government finances as a whole, will require a broad re-evaluation of revenues and expenditures.

*Keywords: inflation, monetary policy, economic conditions*



Box.

### More effective coordination of economic policy

The present crisis has demonstrated that stability in the public finances requires macroeconomic stability. For this reason, negotiations are ongoing in the EU as to how to enhance coordination of economic policy and thereby create a firm basis for the public finances. The European Commission made its proposal first, followed a little later by the working group led by Herman van Rompuy, the President of the European Council. There are small – but significant – differences between the two proposals. It is anticipated that the latter will form the basis for further work.

Mr Van Rompuy's working group proposed changes in five areas: 1) strengthening of the Stability and Growth Pact, 2) monitoring of macroeconomic imbalances, 3) more extensive budget coordination via the European semester,<sup>1</sup> 4) creation of a long-term framework for credible crisis management and 5) creation of stronger institutions for general government finances. This box

deals with the first two proposed changes.

#### *Strengthening the Stability and Growth Pact*

The Stability and Growth Pact, an agreement between EU countries, entered into effect in 1997. Its purpose is to ensure that Member States maintain their public finances on a firm foundation. The Pact makes it possible to invoke sanctions on EMU members that do not take the necessary steps to eliminate an excessive deficit (Excessive Deficit Procedure). This means a country's general government deficit (EMU deficit) cannot exceed 3% of GDP. The presently valid revised Pact of 2003 entails so much leeway and discretion that it is considered too weak, slow and subject to political discretion.

According to the new recommendations, a country's public debt should be subject to the same kinds of limits as the deficit: when the general government debt exceeds 60% of GDP (EMU debt) the Member State is obliged to take steps to reduce the debt. Also to be taken into use is the principle of prudent fiscal policy-making, according to which growth in a country's public expenditures

relative to GDP is restricted if that country has not achieved the prescribed medium-term target. The objective of the principle is to channel all windfall revenues into debt reduction instead of consumption.

The focus of interest in the proposals has been on enhancing the enforcement mechanism and reducing the amount of discretion regarding consequences. According to the new recommendations, the excessive deficit procedure (EDP) would be more rule-based and the process, especially the end of it, would be more automatic.

If Mr van Rompuy's working group proposals are adopted, the Stability and Growth Pact will become more automatic in operation but would entail more political discretion than if the Commission's proposals were adopted. Thus the Pact would continue to depend on Member States' ability to make politically difficult decisions. In this respect, a new scoreboard would not completely purge the Stability and Growth Pact of its present deficiencies.

<sup>1</sup> This has already been decided; the semester will commence in January 2011.

### Management of macroeconomic imbalances

Mr van Rompuy's working group proposes enhancement of the monitoring and evaluation of macroeconomic imbalances and associated risks in the euro area. For monitoring purposes, it is intended to decide later on what indicators to use and how widely they can deviate from target values; the indicators together will constitute a 'scoreboard'. Possible indicators include large current account deficits (Chart), excessive indebtedness and competitiveness indicators. Other possible indicators for macroeconomic imbalances are

rapid rises in house prices and serious disturbances in labour markets.

Coordination of macroeconomic conditions presents a formidable challenge. Even if adequate indicators are found, it will be difficult to objectively evaluate how large or long-lasting a deviation should be before it poses a threat to the economy. An example is the question of whether a current account deficit is excessive or merely reflects a healthy reallocation of capital to more productive uses (Chart). Setting and interpreting threshold values is not easy. Identification of imbalances is

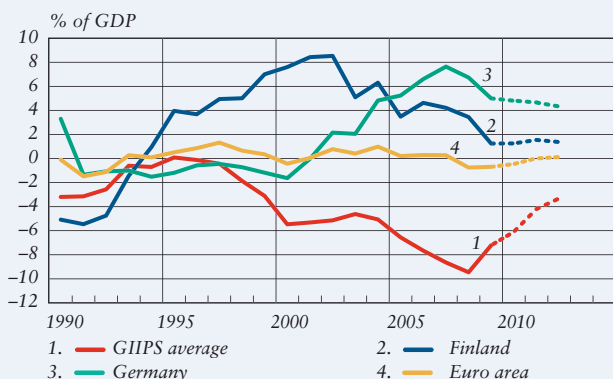
easy, but only by hindsight after the bubble has burst. On the other hand, the risk of faulty estimation beforehand is substantial.

If an analysis of the scoreboard indicates imbalance problems, the next stage is similar to that in the case of an excessive deficit. The Commission first conducts a thorough analysis. If this raises concerns, the Commission can propose that the Council recommend corrective measures to the Member State or – if the situation is acute and threatening to euro area as a whole – it can recommend that the Council initiate an excessive imbalances procedure (EIP). Ultimately, the country can be fined 0.1% of its annual GDP.

Policy recommendations can deal with fiscal policy measures, wage developments, structural changes or matters of financial stability. But deciding on the best policies is not always easy. We do not have direct policy tools for correcting every kind of imbalance, and indirect methods can take a long time to work. For example, there are no simple policy measures for improving a country's competitiveness. For some euro area countries, wage

#### Chart.

#### Current account balances



reductions, relative to other countries, might be an appropriate way to raise productivity. Governments do not, however, have straightforward means of influencing wage formation in the private sector. Raising the economy's level of productivity is an omnipresent challenge, for which a solution is hard to find.

It would be very good if more effort were put into evaluating the overall economic performances of euro area countries. At this stage, there remain many questions

regarding coordination in connection with macroeconomic performance. The task will not be easy, and the means will become clear only as we gain more experience. Ultimately, the effectiveness of macroeconomic coordination will depend on the level of Member States' commitment to cooperation.

# Financial markets have a major influence on business cycle fluctuations in the real economy

14 October 2010



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**Financial factors have a considerable impact on business cycle fluctuations in Finland's real economy. The financial markets affect the real economy particularly via investments, as the cost and availability of finance significantly influence the level of investment. This article presents the results of a study conducted at the Bank of Finland that indicates the operation in the Finnish economy of a financial accelerator mechanism, under which the cost of external finance required for investment depends on the strength of the borrower's balance sheet. The study also shows that unexpected changes in borrowers' financing costs (ie financial market shocks) explain a large proportion of the fluctuations in investment and hence in total output in Finland over the years 1995–2008.<sup>1</sup>**

## **Investment, finance and business cycle fluctuations**

Investment fluctuations in accordance with the business cycle are typically stronger than eg cyclical fluctuations in consumption (Chart 1). During an upswing, private investment exceeds its trend much more than private consumption does, while during a downswing investment contracts below its trend more strongly than does consumption. Private investment typically varies a good 5% either

side of trend, while the cyclical variation in private consumption is just a few percent either side of trend. The overheating in the Finnish economy at the end of the 1980s was seen particularly clearly in the acceleration in the pace of private investment by more than 20% above trend. Correspondingly, during the recession of the early 1990s investment collapsed to almost 20% below trend. Such large fluctuations in investment were related to the overheating of the economy and the subsequent economic crisis that hit Finland in the early 1990s. In 2009, there was once more an exceptionally strong decline in investment as a result of the global financial crisis.

Although private investment only accounts for less than a fifth of GDP, the scale of the cyclical fluctuation in private investment explains much of the cyclical fluctuation in GDP. Studying the causes of cyclical fluctuations in investment can, therefore, take us closer to an understanding of cyclical fluctuations in output. Due to the importance to Finland of foreign trade, analyses of business cycle fluctuations in the Finnish economy often concentrate on the impacts of foreign factors. However, investment also plays a key role.

Investment often requires external finance. Businesses and households borrow in order to finance productive or housing investments. The cost and availability

<sup>1</sup> This article is based on research conducted at the Bank of Finland by the author and published in Freystätter (2010) Financial market disturbances as sources of business cycle fluctuations in Finland. Bank of Finland Discussion Papers 5/2010.

of external finance can restrict investment, which means the economy is facing a financing constraint. The financial markets affect the real economy particularly via investment, as the cost and availability of finance affect the level of investment.<sup>2</sup>

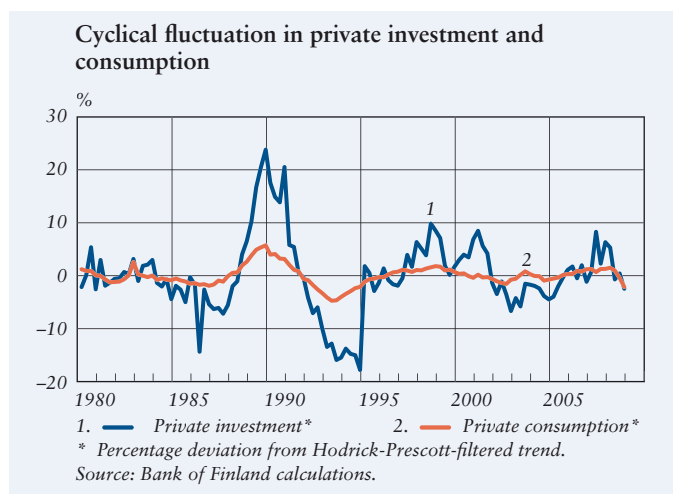
The global financial crisis has shown how large an impact a financial market shock can have on the real economy as well as on the financial sector. Recent studies have demonstrated that financial market activities and developments in the real economy are strongly interlinked, even when the focus is on the normal business cycle rather than times of crisis.<sup>3</sup> Moreover, financial factors can amplify fluctuations, even if the initial shock comes from outside the financial markets.

Financial market activities and financial disturbances have a major impact on business cycle fluctuations in the Finnish economy, as in other economies. The study referred to here shows that much of the cyclical fluctuation in investment, and hence in output, in Finland is due to financial market shocks. Meanwhile, the amplitude of cyclical fluctuations is affected by the financial accelerator

<sup>2</sup> This article examines only investment. Financial factors may also restrict private consumption or the activities of exporters.

<sup>3</sup> For example, Gilchrist, S – Ortiz, A – Zakrajsek, E (2009) Credit risk and the macroeconomy: Evidence from an estimated DSGE model. Mimeo prepared for the FRB/JMBCB conference ‘Financial markets and monetary policy’ 4–5 June 2009. Federal Reserve Board, Washington DC.

Chart 1.



mechanism,<sup>4</sup> which the study referred to here also shows to operate in the Finnish economy.

The financial accelerator and financial market shocks are explored in more detail in the next section. The research results presented here are based on developments in the Finnish economy as a whole, and particularly investment trends, over the years 1995–2008. This was a fairly normal period with regard to the amplitude of cyclical fluctuations. For most of this period Finland was part of the euro area. As a participant in Economic and Monetary Union, Finland has been unable to deploy the methods of an independent monetary policy in order to moderate the impact of shocks that cause cyclical

<sup>4</sup> Bernanke, B – Gertler, M – Gilchrist, S (1999) The financial accelerator in a quantitative business cycle framework. Handbook of Macroeconomics. Ed. Taylor, J B – Woodford, M. North-Holland. Amsterdam.

fluctuations; the economy has had to adjust to shocks in other ways.

The research results are based on a modern macroeconomic model in which there is a linkage between the financial markets and the real economy. In this model, borrowers have to pay risk premia on their loans. The model incorporates the theory of the financial accelerator (developed by Bernanke et al, see footnote 4): ie the size of the risk premium depends on the borrower's balance sheet. An additional feature of the model is that the economy can experience shocks stemming from the financial markets.

### **The financial accelerator and financial market shocks**

The economic impact of the financial accelerator is seen in that during an economic upswing risk premia decline and financial conditions become more relaxed, while during a downswing risk premia increase and finance becomes tighter. In this way the financial accelerator reinforces the cycle. For example, during a downswing, corporate and household balance sheets become weaker, meaning both businesses and households have to pay higher risk premia on their loans. The risk premia grow because lenders want to be compensated for borrowers' weakened ability to pay back their loans and the consequent heightened risk of default. During an upswing, in contrast, balance sheets strengthen and risk premia decline, because the

ability of borrowers to pay back their loans has improved.

A financial market shock is at issue when the risk premia on corporate and household loans rise (decline) unexpectedly and much more (less) than would be expected under the prevailing cyclical conditions. Other loan terms and conditions could also become tighter (more relaxed) and some businesses or households in need of finance remain entirely without a loan (growth in the stock of borrowers). Thus, growth in risk premia due to a financial market shock differs from growth in risk premia due to the financial accelerator, which is a consequence of weakening balance sheets caused by a downturn in the business cycle.

A negative financial market shock will thus be reflected in an unexpected increase in risk premia, but the causes of such a shock can be many and varied. Some financial market shocks relate to problems with financial intermediation. For example, a decline in interbank confidence can push up banks' own funding costs. This is then reflected in higher costs for borrowers or a tightening in loan conditions, even if the borrower's own balance sheet is unchanged.<sup>5</sup> Financial market shocks

<sup>5</sup> Economic outlook (2/2010), a special issue of the Bank of Finland Bulletin, presents model calculations of the impacts on Finland of financial market shocks affecting the price of finance. In the calculations, the cause of the shock is an unexpected decline in market confidence in the management of Finland's public finances, leading to higher funding costs for the banks and higher risk premia for borrowers.

are also at issue in the case of unexpected movements in asset prices. Such changes could be triggered by eg the receding of unrealistically positive expectations on the stock or housing markets. A decline in asset prices due to a financial market shock or a downturn in the business cycle depresses net corporate and household wealth (assets minus debts), which in turn leads to a rise in risk premia. The risk premia will remain high and hamper the economy's recovery from the downturn until borrowers' net wealth grows, or, in other words, until the level of indebtedness declines.

Developments in the real economy are strongly linked to financial conditions. A rise in the cost of finance will lead to weaker aggregate demand and slower growth. Growth in risk premia has a particularly constricting effect on investment, as investment projects typically require external finance. Consumption demand could also be subdued if access to finance constrains household demand. In addition, the cost and availability of finance has implications for exporters. Declining demand leads to a drop in asset prices, which erodes corporate and household balance sheets and further pushes up the cost of finance. The spiral of a contracting economy and tightening financial conditions can lead to a severe decline in the pace of an economy. During an upswing, the same

mechanisms operate in the opposite direction, fuelling growth.

As debt contracts generally state the nominal value of a loan, changes in inflation will affect the real value of the loan. As a result, the financial accelerator's impact on cyclical fluctuations is not automatically procyclical. The effect on the economy of some shocks is to move output and inflation in opposite directions. If output rises but inflation simultaneously slows – as, for example, when there is a sudden, unexpected improvement in productivity – the deceleration in inflation will increase the real value of loans. This is called the Fisher effect. With this type of shock, the rise in asset prices related to improved output causes growth in borrowers' net wealth, while the increased real value of nominal loan agreements operates in the opposite direction, reducing net wealth. The impacts thus cancel each other out, at least in part, whereupon the economy can behave in the event of a shock of this sort almost as if there were no financial accelerator.

### **The financial accelerator operates in the Finnish economy**

Our research results demonstrate that the financial accelerator has operated in the Finnish economy over the years 1995–2008. The magnitude of the financial accelerator mechanism is on a similar scale to those observed in other similar studies, primarily

*Developments in the real economy are strongly linked to the cost and availability of finance.*

*The financial accelerator reinforces many of the shocks that hit the Finnish economy.*

relating to the United States: a weakening in borrowers' aggregate balance sheets leads in Finland to a relatively similarly sized growth in risk premia in the economy as a whole as in eg the United States.<sup>6</sup>

Precise measurement of the risk premium is, however, subject to a great deal of uncertainty. When forming a comprehensive estimate of how much financial conditions have tightened, we need to take into account not only the increase in financing costs, but also the tightening of other terms and conditions of finance and the decline in the number of borrowers. One simple way to measure the risk premium is to subtract the 3-month Euribor rate from the interest charged

on new corporate loans (Chart 2).<sup>7</sup> When the risk premium calculated in this way is compared with cyclical fluctuations in GDP, we see an inverse relation between GDP and the risk premium. The risk premium behaves countercyclically: as output contracts, the risk premium grows, and vice versa. In other words, on the basis of this chart, too, risk premium behaviour in Finland is in line with the financial accelerator theory.

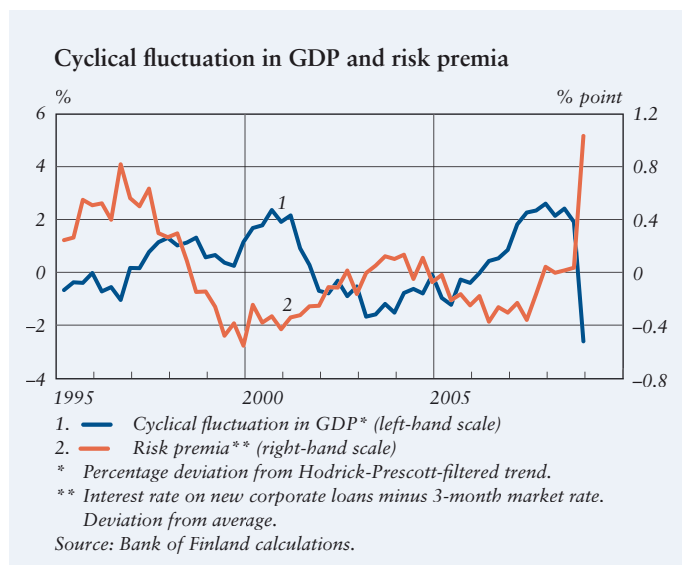
The existence of the financial accelerator shapes our picture of how the Finnish economy operates and what the effects of economic policy are. The financial accelerator reinforces many of the shocks affecting the Finnish economy. It renders the economy vulnerable to changes in borrowers' net wealth. If this net wealth of borrowers declines due to a financial market (or other) shock, this will have an immediate negative impact, via the cost of finance, on both investment and GDP.

Central bank policy rates or market rates alone do not give a full picture of financial conditions, as the overall costs of investment projects also depend on the strength of borrowers' balance sheets. At a time of generally low interest rates, weak balance sheets and heavy indebtedness can push up the costs of finance, thereby restricting investment.

<sup>6</sup> Eg Christensen, I – Dib, A (2008) The financial accelerator in an estimated New Keynesian model. Review of Economic Dynamics. No. 11, p. 155–178.

<sup>7</sup> For the period prior to 1999, the 3-month Helibor rate is subtracted, and during the period 2007/III–2008/IV, the Eurorepo rate, due to the problems on the interbank loan market during the financial crisis.

Chart 2.





Because of the financial accelerator, changes in asset prices have a direct impact on GDP. For example, movements in share prices and housing prices affect borrowers' balance sheets by raising or lowering the value of their assets. Changes in the value of net wealth are followed by changes in risk premia. Thus, via their effect on borrowers' balance sheets, asset price changes influence cyclical fluctuations in Finland's real economy.

Major fluctuations in output also amplify the fluctuations in asset prices. The greater the movement in asset prices is, the greater the movement in borrowers' net wealth. Because of the financial accelerator, this further reinforces the business cycle. Economic policy measures that foster stable development of asset prices also support stable economic development. Naturally, the weaker cyclical fluctuations in output are in general, the smaller role the financial accelerator will play in the economy.

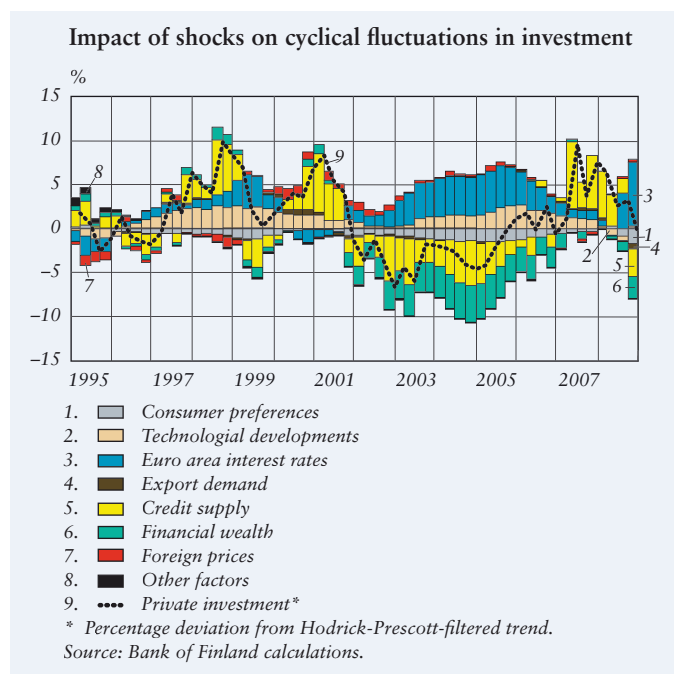
### Financial market shocks as a source of business cycle fluctuations in Finland's real economy

The causes of business cycle fluctuations can be studied using a macroeconomic model. The study published in the Bank of Finland Discussion Paper (5/2010) referred to here seeks in particular an answer to the question of whether cyclical fluctuations in investments in Finland are due to financial market shocks or

to some other shocks that cause cyclical fluctuations.

The role of financial market shocks in cyclical fluctuations in investment in 1995–2008 can be examined by breaking this fluctuation down according to the external factors (ie shocks) included in the model. This allows us to assess the impact of each discrete shock. In the breakdown (Chart 3), the sum of the various segments of the columns produces a black dotted line that depicts cyclical fluctuation in overall private investment (as a percentage deviation from its Hodrick-Prescott-filtered trend). In addition to two financial market shocks, the model also contains shocks stemming from the international economy (export

Chart 3.



demand, foreign prices and euro area interest rates) and conventional domestic economy shocks, such as those stemming from technological development and consumer preferences.

The key finding of the study is that a large proportion of cyclical fluctuation in private investment in Finland is a consequence of financial market shocks (columns 5 and 6 in Chart 3), ie unexpected changes in borrowers' costs for external finance. However, other domestic and international shocks also contribute to fluctuations in investment.

The effect of credit supply and financial wealth shocks has been procyclical. Favourable financial market shocks (ie serving to ease financing conditions) are the main cause of investments developing more strongly than trend, while unfavourable shocks (ie serving to tighten financing conditions) correspondingly lead to weaker-than-trend developments (Chart 3).

Favourable shocks to the cost of external finance explain most of the acceleration in investment prior to the bursting of the stock market bubble caused by ICT sector shares in mid-2000 and also the stronger-than-trend development of investment immediately after the bubble burst. In similar fashion, favourable financial market shocks that eased financing conditions drove the pace of investment well above trend prior to the eruption of the global financial

market crisis at the end of 2008. During both periods, the pace of investment was boosted particularly by a positive credit supply shock: businesses and other borrowers paid a risk premium on their credit that was smaller than the strength of their balance sheets would have given cause to expect.

Unfavourable shocks to the cost of external finance depressed investment for several years in a row following the bursting of the ICT stock market bubble in the early years of the new millennium. Financing conditions were particularly tightened by a negative financial wealth shock. The bursting of the stock market bubble wiped out a proportion of the corporate sector's net wealth, and the weakened perceptions this generated tightened financing conditions by pushing up risk premia.

With the onset of the global financial crisis in mid-2008, the impact of financial market shocks changed from favourable to unfavourable. The rising trend in investment was cut by the international financial market crisis, and this was reflected in Finland as unfavourable shocks to corporate financial wealth and corporate sector risk premia. Financing conditions tightened more than the scale of the downturn would have given cause to expect.

During the economic downturn just after the turn of the millennium a

*In 2008, the upward trend in investment in Finland was cut by the financial market crisis.*

favourable shock to euro area interest rates helped sustain the pace of investment at the same time as unfavourable financial market shocks of domestic origin were operating in the opposite direction. The same scenario is visible following the onset of the financial crisis at the end of 2008, when a favourable shock to euro area interest rates supported investment. As part of the euro area, Finland's interest rates are determined by the average trend in the euro area as a whole, not solely on the basis of conditions in the Finnish economy.

In the light of this study, cyclical fluctuations in investment, and hence also in output, derive largely from financial market shocks that lead to unexpected changes in borrowers' financing costs. Other shocks are relatively insignificant as a source of investment fluctuations. For instance, foreign shocks are insignificant relative to the key importance of financial market shocks. The only exception would appear to be euro area interest rate shocks. Their impact would, however, appear to be opposite to that of financial market shocks, as they are countercyclical.

The picture of cyclical fluctuations in investment in the years 1995–2008 that emerges based on financial market shocks corresponds well with the general conception of the factors that affected the economy at that time. Based on our results we can say that assessments of the causes of business cycle fluctuations in

Finland that do not take into account the role of financial factors could lead to their significance being underestimated and other factors' significance being overestimated. It would appear that favourable and unfavourable shocks in technological development are typically attributed a key role in explaining cyclical fluctuations if financial market factors are omitted entirely from the analysis. Including the financial markets in the analysis also makes it easier to explain certain phenomena: for example, it is more credible to explain the fading of investment following the onset of the global financial market crisis at the end of 2008 by reference to financial market shocks than by appeal to an unexpected disruption in technological development leading to weakened productivity.

The results of the research presented here do not, however, affect the basic idea that faster-than-trend or slower-than-trend inflation, for example, is primarily a consequence of unexpected changes in technology or foreign shocks. Financial market shocks are fairly insignificant with regard to cyclical fluctuations in inflation.

### **An indebted economy is vulnerable**

The economy is continually exposed to both favourable and unfavourable shocks, leading to business cycle fluctuations. The financial accelerator mechanism typically both reinforces

*The causes of business cycle fluctuations in the Finnish economy should not be assessed without taking financial factors into account.*

the effects of shocks in the economy and slows recovery from them. Recovery is slowed because the impact of a shock remains visible on borrowers' balance sheets for a prolonged period. An unfavourable shock leads to a higher level of indebtedness, as the value of capital on balance sheets declines. It takes time to reduce this debt, and risk premia remain high, which puts a brake on investment and economic recovery until the level of debt has been returned to the pre-shock level.

The strength of a cyclical fluctuation caused by a shock also depends partly on how indebted the economy or sector affected by the shock was when the shock hit. If an economy is heavily indebted, an unfavourable shock will significantly tighten financing conditions, whereupon the downturn will be both deep and prolonged.

The opposite to an indebted economy is a situation in which economic agents' own funds are sufficient to finance investment projects. In such a situation, economic agents' actions are not restricted by financial constraints. An unfavourable shock that impacts negatively on output, depresses asset prices and weakens balance sheets does not in such circumstances reinforce the downturn. Financing conditions do not become tighter, as economic agents' own funds are sufficient to cover the costs of investment projects, and balance

sheets are therefore irrelevant to developments in the real economy.

If external funding is nevertheless required, borrowers' balance sheets will restrict their access to finance due to the financial accelerator mechanism. For those with balance sheet restrictions, a decline in net wealth pushes up the cost of external finance and reduces economic activity. The more indebted a sector is, the more it will have to restrict expenditure by investing less. For an indebted economy, the downturn will be prolonged, as it will take time to unravel the debt. Without the restrictions imposed by debt, investment can recover more quickly.

*Keywords: business cycle fluctuations, financial accelerator, financial market shocks, indebtedness*

# Climate change and monetary policy

13 October 2010

Although the issue of climate change is shrouded in a great deal of uncertainty, there is broad agreement over certain key questions: the global climate is heating up and something has to be done to moderate this trend. This article considers what effects climate change and climate policy could have on monetary policy. The focus is on two possible channels of influence. In the first place, macroeconomic developments as a whole could become unstable and monetary policymaking could as a result become more challenging. Secondly, if we are going to be able to moderate climate warming, the relative prices of commodities will have to change: greenhouse gas emissions, fossil fuels and energy will have to become more expensive relative to other commodities and production inputs. From a central bank perspective, the key issue is how this change in relative prices can occur without an increase in the general level of prices, ie higher inflation.

## Climate change, monetary policy and stability in the real economy

According to most climate models, the likelihood of extreme climate phenomena – such as hurricanes, floods and droughts – will increase as the climate warms. If so, macroeconomic developments could also become less stable and economic growth fluctuate considerably from one year to the next. A topical

example of the links between climate and the economy is the long heat wave of summer 2010 in northern and eastern Europe. The forest fires in Russia are estimated to have put a dent of several billion euro in the country's GDP.

Environment policy, too, can contribute to increased instability in economic developments. In order to moderate climate warming, it will be essential to considerably reduce the carbon intensity of production from present levels. In other words, for each euro or dollar entered in the National Accounts there should be less greenhouse gas emissions than at present. In order to achieve this, there will need to be considerable changes in energy generation, with fossil fuels giving way to renewable sources of energy. There will also need to be changes in the industrial structure of production. The GDP share of energy-intensive heavy industry should be reduced and the share of services increased.

When the structure of output changes – old production disappears and is replaced by new – this is often accompanied by macroeconomic instability. One example of this is the radical change in the structure of the Finnish economy in the 1990s. At that time, there was a dramatic change in the sectoral breakdown of the Finnish economy, and in terms of macroeconomics there was a transition from the deep recession of early in the decade to the years of



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rapid growth towards the end. Another example, and one that is perhaps more relevant to climate policy, occurred in the 1970s. When energy prices shot up due to the oil crises, the advanced economies managed to improve the energy efficiency of output and consumption. Throughout the decade, however, macroeconomic developments were very unstable.

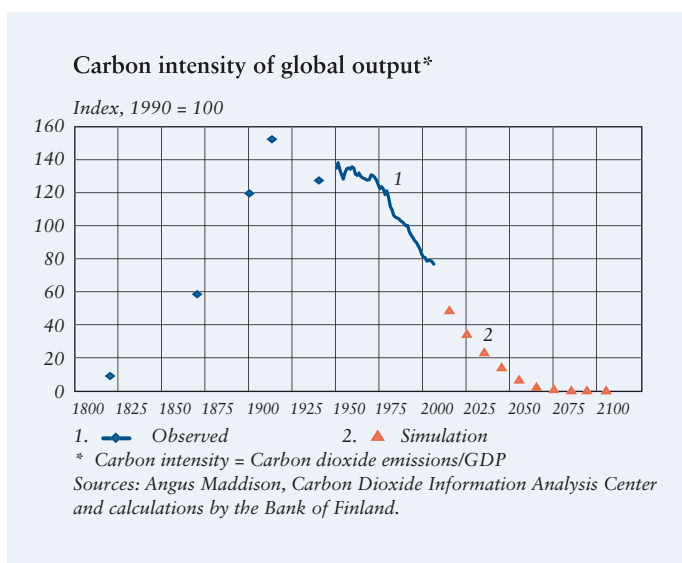
In fact, the carbon intensity of output across the entire global economy already began to decline around the middle of the 1900s (Chart 1). However, if climate warming is to be checked, carbon intensity will have to be reduced much further still in the future. According to many climate researchers, we will probably avoid the worst effects of climate warming if the average global temperature rises

by a maximum of 2 degrees Celsius above that of the pre-industrial era. Chart 1 presents one estimate of how the carbon intensity of output would need to develop globally in order for climate warming to remain within these limits.

The estimate is based on calculations using the RICE<sup>1</sup> model developed by William Nordhaus. RICE is a dynamic macroeconomic model that facilitates analysis of the links between climate change, climate policy and economic development both globally and for different economic regions. According to the RICE model, greenhouse gas emissions should be reduced particularly in energy-intensive economies such as the United States and China, but there will also need to be considerable changes in European Union Member States as well. The carbon-intensity of their output should be halved by 2020, by which time the EU average should be the same as the present level in France, which generates most of its electricity from nuclear power. By 2040, greenhouse gas emissions per euro of output should be reduced to just a quarter of the present level. At present such figures are recorded only in a few countries in sub-Saharan Africa.

It has been argued above that, as a result of climate change and climate policy, macroeconomic developments

Chart 1.



<sup>1</sup> The acronym RICE comes from Regional Integrated model of Climate and the Economy. Information on the RICE model and related documentation is available at <http://nordhaus.econ.yale.edu/RICEmodels.htm>.

could become less stable and economic growth fluctuate considerably from year to year. In such an event, monetary policymaking and implementation will become more challenging.

If economic growth in a given year is less than normal, this could, broadly speaking, be due to one of two factors. In the first place, aggregate demand could be inadequate. For example, confidence regarding the future economic prospects of households and businesses could have weakened for some reason, whereupon investments and purchases of consumer durables will be postponed to the future. In this event, some of the economy's output capacity will be underutilised, and the central bank should respond to the situation primarily with an expansionary monetary policy, ie by lowering its policy rates. On the other hand, slower-than-normal growth could be due to factors relating to aggregate supply: for example, output conditions in the economy could have changed, making it impossible to reach the previous growth figures. In such a situation, an expansionary monetary policy will not help, and lowering interest rates could cause higher inflation.

The basic principles presented above would appear to provide a fairly clear guide to the appropriate line of action for a central bank to keep the economy on the right course. In practice, however, the situation is

often much more complex, and it is hard to precisely assess to what extent fluctuations in the trajectory of the economy are due to demand factors or supply factors. Such an assessment is particularly difficult because the central bank will often have to decide on the basis of insufficient information: the picture only becomes filled out in retrospect, when we can see which direction the economy actually took.

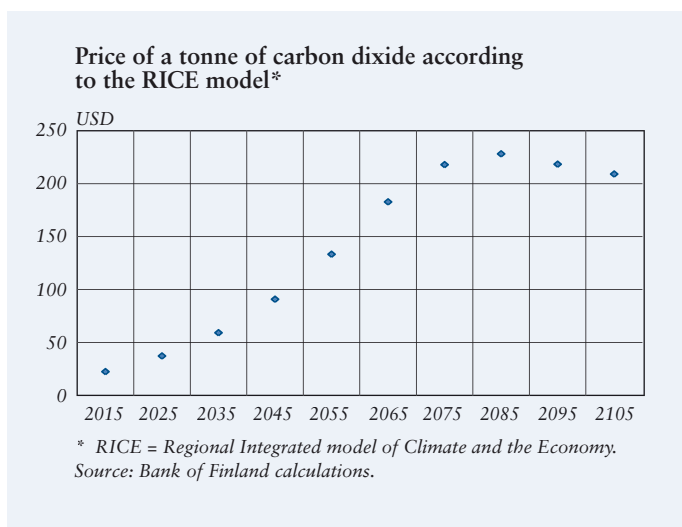
A good example of the difficulties of conducting monetary policy is provided by the events of the 1970s. When the world market price of oil rose, this led to slower economic growth in the advanced economies. Although the impact of the oil shocks on potential output and the prevailing situation was understood, many contemporary assessments thought it possible that the sluggish performance of the economy was also due in part to demand factors. There was thus seen to be room for expansionary policy. Based on experience and on data that became available later, these contemporary assessments were wrong. The result was stagflation, a situation in which economic growth was sluggish and the unemployment rate high at the same time as inflation gathered pace.

### **Climate policy, monetary policy and inflation**

In order to reduce greenhouse gas emissions and achieve a less carbon-

*It is challenging for central banks to adopt an appropriate monetary policy stance without precise knowledge of how supply and demand factors impact on the economy.*

Chart 2.



intensive output structure, the relative prices of commodities will have to change. The cost of greenhouse gas emissions will have to rise, as will the price of fossil fuels and energy relative to other commodities and production inputs. Chart 2 shows how the real price of greenhouse gas emissions should develop, according to the RICE model, if the average global temperature is not to rise more than 2 degrees Celsius above that of the pre-industrial era. The price of a ton of carbon dioxide should rise (at current values) to USD 40 in the 2020s, to around USD 100 in the 2040s and to over USD 200 during the second half of this century. At present, a ton of carbon dioxide costs EUR 15 (around USD 20) on the European Union's emission permit market. Thus the real price of carbon emissions should rise tenfold over coming decades. The key issue for central banks is how such a large

change in relative prices can occur without pushing up the pace of rise in the general level of prices, ie causing higher inflation.

Broadly speaking, climate policy can have two sorts of effects on prices. The first group of effects are what can generally be classified as direct effects. The introduction of stricter climate policy pushes up the price of fuels and energy. At the same time, the price of both passenger and freight transport services also rises and energy-intensive industrial goods become more expensive. Monetary policy should not respond to these direct effects, as a prerequisite of a successful climate policy is just such a rise in the relative prices of carbon-intensive products and production inputs.

In addition, climate can also have indirect effects on the general level of prices. Rising energy and fuel prices erode consumers' purchasing power. If people attempt to restore the purchasing power of their income to the level it was prior to the rise in energy and fuel prices, wages and prices could also rise in those parts of the economy in which the higher energy and fossil fuel prices would not of themselves increase costs. This could then lead to a self-sustaining rising spiral of costs and prices. These indirect effects are something a central bank should be able to prevent.

The question posed above regarding the links between climate



policy, monetary policy and inflation can now be formulated in a slightly different way. What is required of monetary policy in order for the direct effects of climate policy to pass through into prices while being able to avoid the indirect effects?

We can get a partial answer to these questions by reviewing developments in recent decades. During this period, the price of fossil fuels and energy has at times fluctuated dramatically. In the two oil crises of the 1970s, the world market price of crude oil climbed steeply, and at the same time inflation also took off in Finland, as in many other advanced economies (Charts 3 and 4). On the other hand, at the turn of the millennium the price of crude oil rose in percentage terms almost as much as in the late-1970s, but the impact on inflation was fairly marginal.

Inflation reacts less nowadays to crude oil and fossil fuel prices, which is presumably due to the change in the structure of the economy since the 1970s. The weight of fossil fuels and energy in general in the production process and household consumption baskets has declined, while the labour market has also become more flexible.

Moreover, economists are generally agreed that monetary policy institutions have a considerable effect on inflation dynamics. In contrast to during the oil crises, by the turn of the millennium the central banks of

Chart 3.

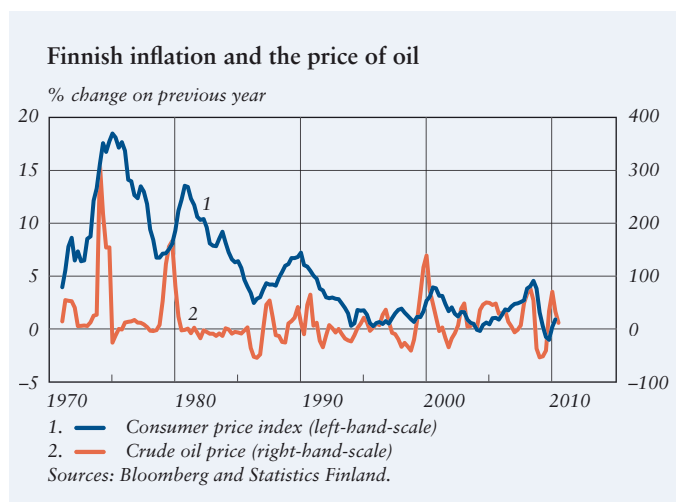
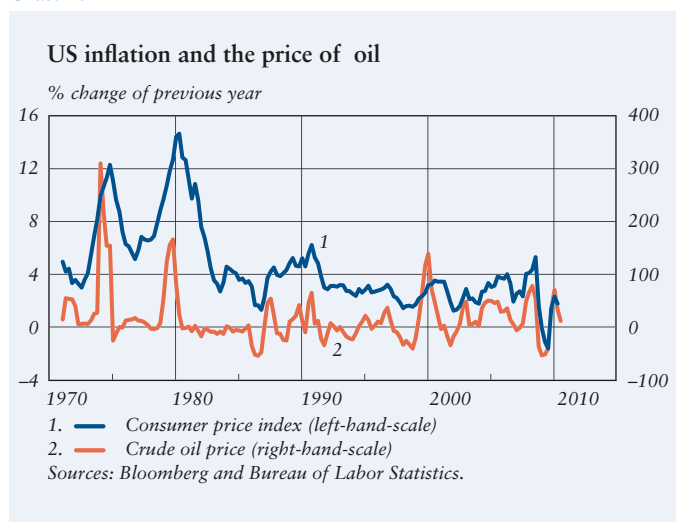


Chart 4.



many countries were relatively independent operators and had a clearly defined inflation target that was understood by both businesses and households. For example, the central banks of the euro area have succeeded in anchoring economic agents' inflation expectations. Although the pace of increase in the general level of prices may accelerate

*Within the EU there are two distinct types of climate policy steering mechanisms currently in use: environmentally based excise duties and emission permit trading.*

briefly, the public have confidence that, before long, inflation will return close to the 2% target set by the European System of Central Banks. When inflation expectations are moderate and stable, employees and trade unions do not make inflated pay demands and businesses are under no pressure to dramatically increase their prices. A rising spiral of costs and prices is therefore not triggered, and a credible inflation target becomes a self-fulfilling prophecy.

In light of the experience of recent decades, it would thus seem that central bank independence and a clear inflation target could provide a good basis for the reconciliation of climate policy and monetary policy. Despite this, central banks could find themselves facing difficult choices. What should they do if the prices of carbon dioxide emissions, energy and fuels all rise dramatically? Should they raise their policy rates? The consideration presented above provides grounds to answer in the negative, that monetary policy should not be tightened in such a situation, as this could prevent achievement of the goals of climate policy, namely relatively higher prices for carbon-intensive products and production inputs.

Moreover, the prices of energy and fuels can fluctuate a great deal over time. There is a time lag before monetary policy measures affect the economy, and by the time a change in

monetary policy begins to be really felt, the economic situation can be entirely different from when the decision was taken.

Weighing on the scales on the other side, however, is concern over central bank credibility. If actual inflation departs from the official target, businesses and households will no longer have confidence that the central bank is genuinely committed to the target it has set. If this were to occur, the preservation of price stability would become much harder than it is at present.

From the perspective of the central banks, it would of course be good if they were confronted with this sort of choice as seldom as possible. If the prices of carbon emissions, fossil fuels and energy have to rise, this should happen as smoothly and gradually as possible. In the average Finnish consumer's shopping basket, the weight of energy and fuels is at present approximately 7%. If carbon emissions, energy and fuel prices rise annually by a few percentage points, this will not have a very large impact on the general level of prices, and it is highly likely that consumer price inflation will remain close to the central bank target. The situation would be entirely different if the prices of carbon-intensive products were to, for example, double one year and the following year return close to their starting point. Changes of this scale would certainly impact on the general level of prices.

If the credibility of the inflation target were then to suffer, the central bank would perhaps be compelled to react to the fluctuation in prices.

The question of how easy or difficult it will be to reconcile climate policy and monetary policy could depend partly on the institutions and steering mechanisms of climate policy itself. Within the European Union there are, broadly speaking, two distinct types of climate policy steering mechanisms currently in use. In the first place, Member States collect a variety of environmentally based excise duties – on energy, fuel, carbon, fertilisers etc. On the other hand, since 2005 there has been a system of emission permit trading in force within the EU that today covers most of energy production and manufacturing industry.

These steering mechanisms differ from each other with regard to price stability. There has been considerable fluctuation in the price of greenhouse gas emissions on the European Union's emission permit market. At the beginning of the first period of emissions trading (2005–2007) the price of a tonne of carbon dioxide doubled from EUR 15 to EUR 30, whereafter it remained mainly between EUR 20 and EUR 30 until spring 2006 (Chart 5). In later spring 2006, however, the price of emission permits collapsed, and by the beginning of 2007 they were in practice free of charge. The price collapsed because, during the course

Chart 5.

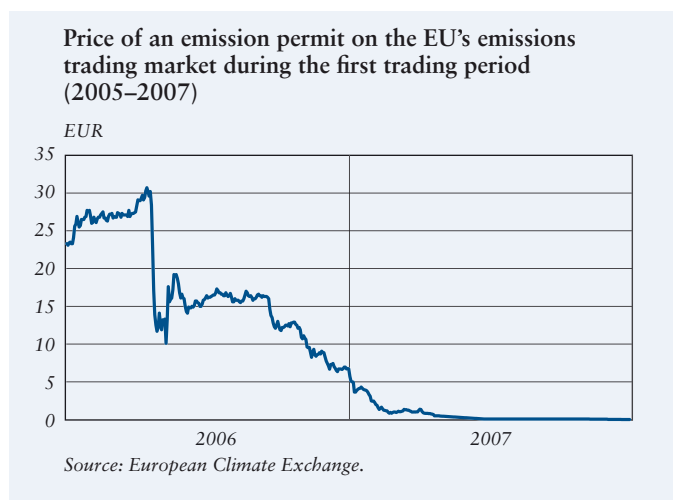
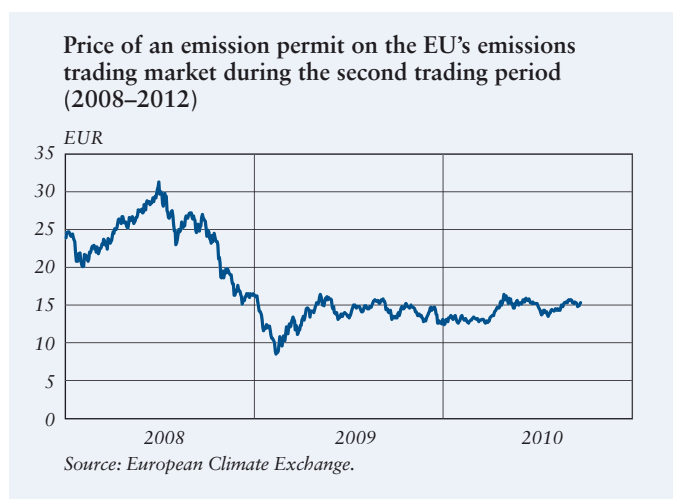


Chart 6.



of 2006, new data became available on actual emissions and market participants realised that the number of permits issued in fact exceeded the needs of European manufacturing industry and energy production plants.

During the second period of emissions trading (2008–2012) the price of permits has also fluctuated considerably (Chart 6). The price paid

for a tonne of carbon dioxide has been at its lowest at around EUR 8, and at its highest in the region of EUR 30. The deepening of the international financial crisis in autumn 2008 was clearly reflected: when the volume of industrial output dropped, the price of emission permits also fell substantially (Chart 6). It is also worth paying attention to the point

of transition between the two trading periods. In 2007, greenhouse gas emissions were in practice free of charge; in early 2008, the price payable for a tonne of carbon dioxide was around EUR 20–30.

The dramatic fluctuation of prices on the emission permit market also helps to generate tremors in consumer prices of energy and manufactured goods. In contrast, energy and fuel taxes could have the opposite effect. Tax rates often remain unchanged for a relatively long time, and taxation then acts as a moderating influence on consumer price fluctuations. One example of this is Finland's fuel taxation. Excise duties on petrol and diesel oil are typically increased only every few years (Chart 7). In Finland, consumer fuel prices have fluctuated much less than the world market price of crude oil (Chart 8).

It would appear that environmental taxes would be a better alternative from the perspective of price stability than tradable emission permits. It would, however, be possible to amend the emissions trading institutions, and thought has in fact been given within European Union circles as to how the rules should be improved.

In the first place, the emission permit market could be made more stable if the issued permits were to be valid for a longer period and unused permits could be saved for later use. The collapse in prices during the first

Chart 7.

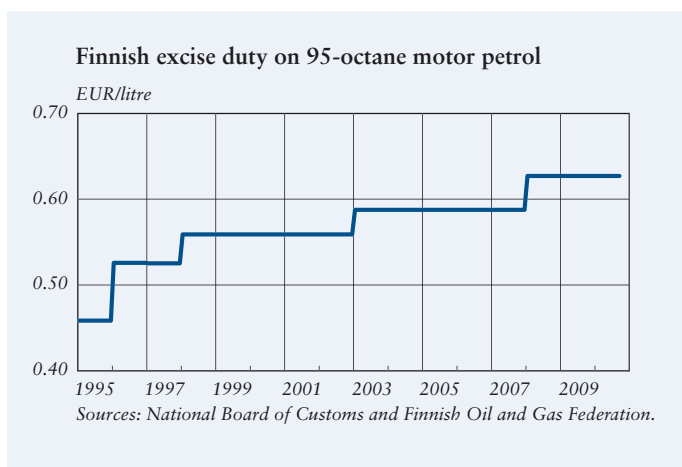
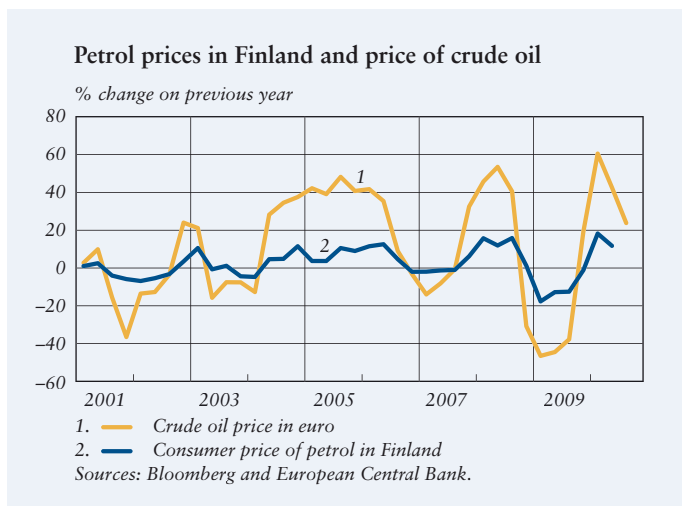


Chart 8.



period of trading on the EU emission permit market was largely because there was no further use for the permits once the trading period had come to an end. If the permits issued during the first trading period (2005–2007) could have been saved for use in the second period (2008–2012), they would not have become valueless.

The current rules governing the European emissions trading market could also lead to a situation in which the price of permits would rise strongly towards the end of a trading period. This could happen if, for example, the end of a period (when there would presumably be only a small proportion of issued permits still unused) were to coincide with an exceptionally cold winter, or if there were exceptionally low rainfall and therefore a shortage of hydroelectricity on the market. In this event, there would be higher-than-anticipated demand for energy produced from fossil fuels. This is what happened just after the turn of the millennium on the Californian sulphur and nitrogen emission markets. During the energy crisis that hit California in 2000–2001 the price of nitric oxide emissions rose at its height to 30 times the level of 1999.

The possibility to save emission permits could, thus, improve the efficiency of permit markets. In similar fashion, the opportunity to borrow – in other words to use in advance emission permits scheduled

for issue during the next trading period – could stabilise prices.

A solution to the problems relating to the point of transition between trading periods could also be sought by extending the duration of the trading periods themselves. This would reduce the number of transitions.

It would appear that the rules governing emission trading in the European Union are being developed in the direction outlined above. The third trading period currently being planned is intended to cover the years 2013–2020. This would make the third period equal in length to the first two periods added together. It is also intended to allow unused permits from the second period to be saved for use in the third period.

We have concentrated above primarily on the transition points between trading periods. There are, however, other possible ways to influence activity on the emission permit markets. The markets could be stabilised by setting upper and lower price limits on trading. The public authorities would commit to purchasing emission permits at a certain price, and the market price would thereby be prevented from falling below this level. At the other end of the scale, the authorities would commit to selling excess permits to market participants at some – possibly very high – price. The market price would then not rise above this upper limit.

If we hope to moderate climate warming, the prices of carbon emissions, fossil fuels and energy will have to rise. How well the change in the relative prices of various commodities required by climate policy and the price stability objective of monetary policy can be reconciled depends partly on the institutional framework of monetary policy: central bank independence and the credibility of the price stability objective are principles worth retaining. At the same time, the institutional framework of climate policy is also important. It would be helpful if the perspective of price stability were borne in mind when planning climate policy.

*Keywords: climate policy, change in relative prices, price stability*

# From regulated financial markets to Economic and Monetary Union<sup>1</sup>

15 November 2010

The Bank of Finland's monetary policy operating environment changed fundamentally in the final decades of the 20th century. In the post-war period, many areas of the economy were strongly regulated, both in Finland and across Europe in general. Control was particularly tight in the financial and exchange markets.

In some countries, however, market liberalisation had already made considerable progress by the 1970s. The liberalisation of western European markets was completed in the 1980s. Both the rationale and the ability to regulate nationally were slowly crumbling. Confidence in the ability to regulate and in the benefits of regulation was fading, and, at the same time, doubts over the stability of free markets were receding. This change was due particularly to the globalisation of the economy and

preparations for European Economic and Monetary Union (EMU).

In the final decade of the 20th century, the political economy of Europe underwent deep changes. In the early 1990s, the state-run economies of Eastern Europe collapsed and the communist countries moved to a market economy, partly through a transition bordering on chaos. Meanwhile Western Europe was becoming integrated, and in 1999 eleven countries established EMU.

These changes had a particularly strong impact on the Finnish economy and financial markets. The early 1990s were characterised by an unexpected and exceptionally deep recession by European standards. This was, however, followed by a fairly strong recovery towards the end of the decade, and Finland could prepare for EMU membership in an environment of economic stability.

## Monetary and foreign exchange controls in the 1970s

The Finnish economy was still relatively nationally based in the 1970s. Companies were Finnish-owned and operated almost entirely from plants in Finland. Foreign trade was, however, extensive and largely unregulated, making Finland an open economy. Exports were quite heavily

focused on a single industry, the forest industry, which caused instability. The economy grew rapidly in the early and late 1970s, but entered a deep recession after the mid-1970s. The oil crisis that began in 1973 pushed Finnish inflation to nearly 20%, and the decade was characterised by rapid inflation of 10% on average.

In terms of finance, the Finnish economy was closed to the international markets. Capital inflows and outflows were regulated by the Bank of Finland. Individual financial



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<sup>1</sup> This article is based on forthcoming publications by the author in the Bank of Finland's 'Expository studies' series (in Finnish only): *Säännöstelystä markkinoille* [From control to deregulation of markets] and *Talouskriisistä rahaliittoon* [From economic crisis to monetary union].

transactions with a maturity of over 12 months required approval by the central bank. Short-term trade financing was allowed, based on general permission, usually for a period of 3 to 6 months and in accordance with standard financing practices. Foreign financial transactions other than trade financing, eg deposits and other investments, were almost totally prohibited.

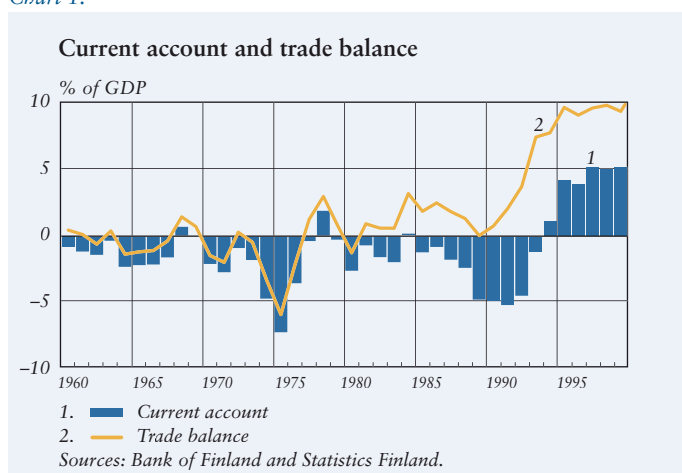
Companies' foreign investments were minor during the period of exchange control. Due to excess demand for financing, the exchange controls mainly affected capital inflows. Companies applying for permission could typically finance a fixed part of their investments with foreign credit. During the period of tight exchange controls in the late 1970s, a 'financing budget' was applied. Under this arrangement, a quota was imposed on net capital inflows and the Bank of Finland's domestic and international net

investment position to limit the current account deficit. Cutting the excessive deficit (7% of GDP) deepened the recession but also cut the growth in foreign debt (Chart 1). Finland's foreign debt was stabilised for a decade, at 15% to 20% of GDP.

The exchange rate of the Finnish markka was politically controlled; in principle it was a fixed rate. The international Bretton Woods system linked to the dollar collapsed in 1971, and Finland quickly introduced a floating exchange rate regime for the markka. In practice, the currency was quite tightly fixed to the trade-weighted exchange rate index. The index and its fluctuation band were established by law in 1977. The fluctuation band varied between 4.5% and 6%. The inflation that followed the oil crisis eroded Finland's price competitiveness and, as a result, the markka was devalued by nearly 20% in the late 1970s; at the turn of the decade, however, it was revalued to some extent. In the post-war period, the markka was devalued approximately every ten years, due to the rapid rise in costs. Devaluation was re-introduced in 1982.

In the 1970s, foreign exchange controls could still secure the development of a separate domestic financial market and an independent monetary policy. The Finnish financial market was small and banking-oriented. Admittedly, it was not a fully functioning market, as the primary purpose of the interest rate was not to steer financing. The system

Chart 1.



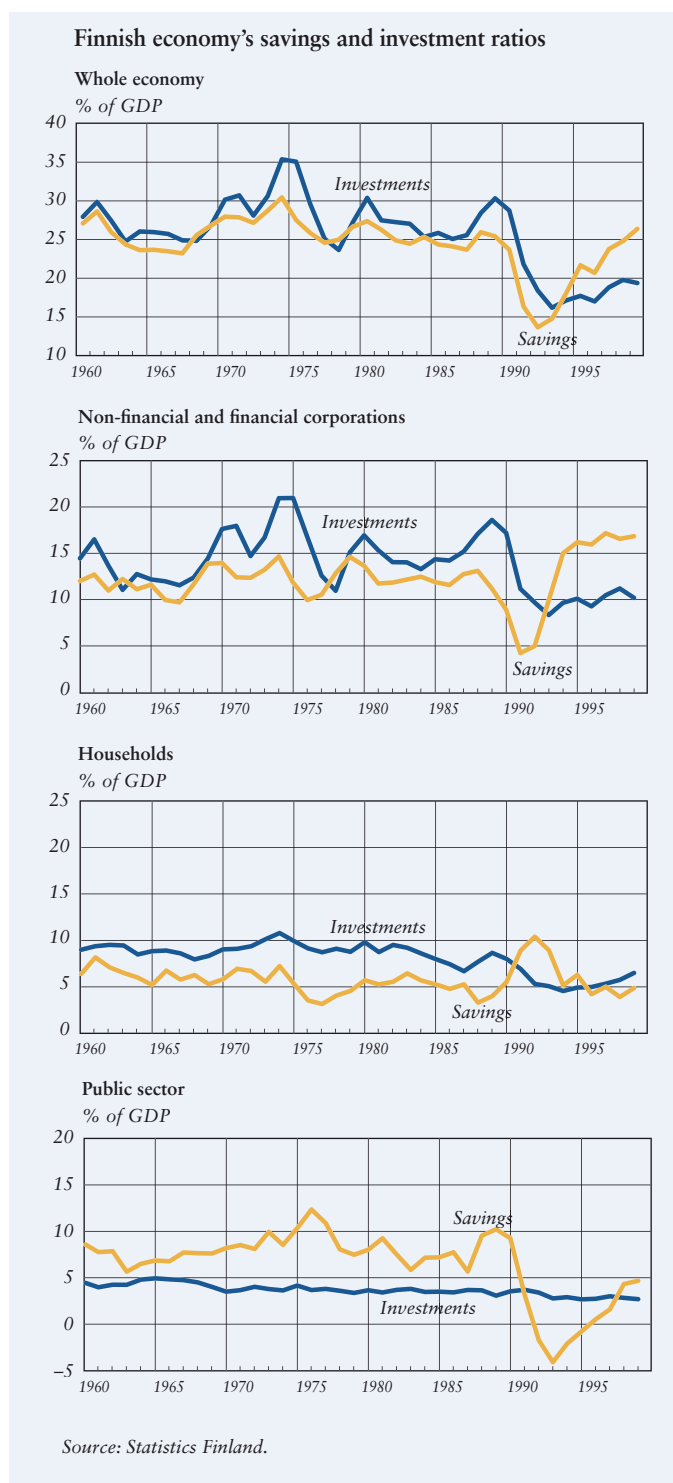


was based on a politically determined base rate to which deposit and lending rates were tied. The system was thus based on a variable interest rate, but only partially, as the base rate was kept low. The base rate reacted slowly to inflation, and real interest rates were generally substantially negative throughout the decade.

In the market, customer loyalty was important, and, as a result, a form of financial barter developed. Generally, the precondition for a loan was advance savings – a fact often emphasised by the Bank of Finland in its credit policy guidelines – and the saver, suffering from inflation, required that, in exchange, he be granted a loan. Companies demanded credit in exchange for using banking services and taking out insurance policies.

This type of financial system emerged as a result of exchange controls, low interest rates, inflation and taxation. From an international perspective, the Finnish financial structures had a special characteristic: the corporate sector had a large deficit whereas general government finances were in surplus (Chart 2). Gross central government debt remained low, at only 5% to 10% of GDP. The surplus was invested in state-owned companies and housing construction. Due to inflation, corporate debt also remained at a reasonable level. Finland's investment ratio was high by international standards, at a quarter or even a third of GDP.

Chart 2.



There was also a high level of savings in the various sectors of the economy, but not high enough to finance investment. Despite its inefficiency, however, the regulated financial system supported Finland's fairly rapid economic growth.

In the period of exchange controls, the Bank of Finland did not have a consistent monetary policy strategy. The fixed exchange rate in practice restricted the conduct of monetary policy, but because the exchange rate did not remain fixed, the target of monetary policy varied. The emphasis varied between growth, the balance of payments, the country's liquidity position and other variables. Price stability was not particularly emphasised. Inflation was seen as dependent on incomes policy. Extensive general incomes policy settlements were agreed, sometimes also including commitments on interest rates.

In monetary policy, the intermediate target was to restrict the amount of financing without setting a limit on credit growth in percentage terms. The Bank of Finland controlled the amount of credit granted through a 'penalty system' applied to the banks. Under this, deposit rates were tied to the base rate and the average interest rate on bank credit was set by the central bank. As this set a limit on banks' interest rate margins, the Bank of Finland could, by adjusting the price of central bank debt, cut the profits of banks that were growing too rapidly. This was done by setting a gradually

rising marginal interest rate, a 'penalty interest charge' on additional central bank finance. In an environment of tight monetary policy, the penalty interest was usually 20–25%.

In this system, the central bank's balance sheet was of key importance, because the amount of banks' central bank debt was defined in the balance sheet. The position of the banks was affected most by developments in foreign reserves. Various deposits by non-MFIs and central government, occasionally frozen at the central bank, and the Bank of Finland's special credit arrangements also had some monetary policy implications. Banknotes in circulation and the central bank's capital accounts grew at a steady pace and did not affect the conduct of monetary policy.

The regulated financial system had serious shortcomings. Financing was not generally allocated to the most efficient recipients. The above-mentioned exchange between banks and their customers hampered the development of a wholesale financial market. One unhealthy feature was the opportunity for banks to avoid credit losses by taking advantage of the zero-interest regime for problem debts. As a result of the controls on the average interest rate, a bank could set a zero rate on problem debts and charge the original interest rate from other debtors. Hence, in an economy suffering from high inflation, debtors could quickly pay off their problem debts.

*In the regulated financial system, financing was not allocated to the most efficient recipients.*

From the banks' perspective, the system of monetary and foreign exchange controls was safe. Banks' branch networks and staff numbers became disproportionate, despite the small market and the Bank of Finland's attempts to restrict their expansion.

A special characteristic of the period of exchange controls was the clearing system applied in trade between Finland and the Soviet Union until the early 1990s. Under this system, foreign trade payments were settled via the Bank of Finland. As payments did not remain close to the required balance, particularly at times of rising oil prices, the development of the clearing account affected banks' liquidity position. Instability increased as the Soviet Union began to make advance payments via the clearing account. In fact, the Bank of Finland forwarded these advance payments (which were mainly on ship trades) to the recipient companies in markkaa. Temporary investment of the resulted loose finance contributed to the creation of a money market in Finland.

### **Liberalisation of the foreign exchange and financial markets**

In the liberalisation of European financial markets, a significant step was taken in 1979 when the UK foreign exchange market was liberalised 'overnight'. The normal course, however, was for countries to liberalise their markets gradually, following the example of others. The

Finnish market was still fully regulated at the beginning of the 1980s. Finland was slower to liberalise than European countries on average, lagging slightly behind the other Nordic countries but making faster progress than countries in southern Europe.

In Finland, the first step was the liberalisation in spring 1980 of the pricing of forward exchange contracts and the funds covering them. In a forward transaction, a currency is purchased or sold at an exchange rate agreed at the time of the contract, but the currencies are usually exchanged in future (usually after several months). In this decision, the emphasis was on currency risk protection and the development of markets, rather than the liberalisation of capital flows. The protection of only approved currency transactions was liberalised. Banks and companies could freely price the forward exchange contracts; at the same time, banks were granted the right (and obligation) to cover the exchange rate risk with foreign finance. The decision was considered to be of minor importance in terms of monetary policy, which in the first few years turned out to be true. However, as the markets developed, the liquidity impact of forward exchange contracts and the funds used to cover them rapidly took on increased importance.

The pricing of forward exchange contracts was problematic, because Finland did not have a functioning

*The foreign exchange and financial markets in Finland were gradually liberalised during the 1980s.*

money market with a range of interest rates of different durations. The difference between a forward rate and a spot rate is based on the interest rate differential. Pricing requires the creation of market interest rates. The increasing popularity of forward exchange contracts contributed not only to capital flows but also to development of the system of interest rates.

Already in 1975 the Bank of Finland had opened a call money market for central bank financing. The call money rate was the overnight rate, and it was not fully passed on to market rates. The call money market was nevertheless a significant step, in principle, in the development of the money market.

Internationalisation, institutional change and technological advances, among other factors, speeded up the development of the money market in the early 1980s. A complex dual

interest rate system was created in Finland. Market interest rates exceeded the level of regulated interest rates. The interest rate differential reached its peak in the period of robust economic growth in the early 1980s. The Bank of Finland pushed Finnish inflation towards the slowing rate of global inflation. As the money market rate rose above 15%, the unknown Finnish markka suddenly became an investment vehicle even for foreign investors.

The high money market rate caused large capital inflows – primarily to cover forward exchange contracts – which, in 1984, broke the Finnish exchange control system. The Bank of Finland’s foreign exchange reserves and forward exchange position increased manyfold (Chart 3). Even though other significant measures to liberalise capital flows had not yet been taken, the regulations gave the increasingly international companies so much space to manoeuvre that the country’s liquidity position could no longer be safeguarded by exchange controls. Moreover, controlling banks’ lending activity with the traditional penalty system became problematic.

Liberalisation of interest rates was begun in 1983 by loosening the system of unregulated and regulated interest rates. Market interest rates were allowed to gradually pass on to regulated credit rates. On the other hand, to maintain the effectiveness of monetary policy, progress was slightly

Chart 3.



reversed in capital flows: in 1985, the sale of ordinary markka bonds to non-residents was suspended and the terms and conditions of forward exchange contracts were tightened. The appropriate method of liberalisation was examined. It was still believed that the most sensitive items would remain regulated.

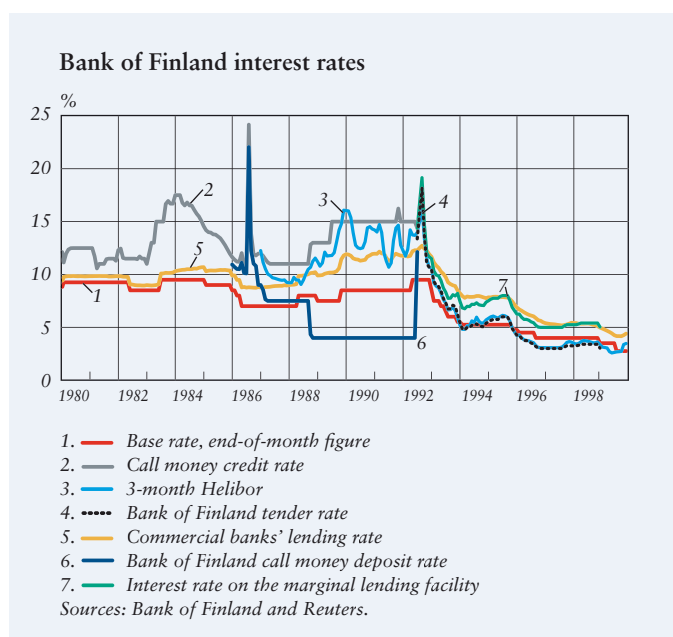
Despite primarily steady economic growth in the 1980s, market liberalisation took place in a turbulent financial climate. The vast capital inflows of 1984 soon turned into an outflow. The situation on the foreign exchange markets raised concerns again in summer 1986. The Bank of Finland raised the call money rate temporarily to as high as 40% (Chart 4). This did not, however, calm the situation. Forced devaluation was imminent, but in early 1987 there was an upturn in the economy, accompanied by a reversal in the direction of capital flows.

In this situation, the operational framework for monetary policy applied in the period of exchange controls was found to have shortcomings. One key problem was that the central bank set the interest rate and, in practice, the exchange rate, too, on a daily basis. The Bank of Finland quickly initiated a reform of the system to make it more market driven. The aim was to free up the formation of the daily interest rate, in particular.

In late 1986, the Bank of Finland began gradually introducing open

market operations. The interest rates on call money credits and call money deposits were clearly differentiated to promote the development of the interbank money market. Banks' liquidity was steered with the cash reserve requirement (introduced in 1979). On the other hand, the Bank of Finland began to conduct – in the early years almost daily – open market operations mainly with a maturity of one month on certificates of deposits issued by banks or the central bank itself. In addition, banks were allowed to make call money deposits with the Bank of Finland or take call money credit (since 1992: the marginal lending facility with a maturity of one week) at an unfavourable interest rate. The key instrument on the money market was

Chart 4.



*The liberalisation of foreign borrowing by domestic companies in autumn 1987 was an important decision.*

the certificate of deposit issued by banks. The problem was the related banking risk.

In 1986, two significant liberalisation measures were introduced. Regulation of average lending rates, a key factor in regulation, was terminated. Henceforth, interest rates on lending could be determined freely. It was politically impossible to deregulate deposit rates. Therefore, in order to promote banking competition, industrial companies (primarily) were allowed to freely use long-term foreign credit. The main reason behind this decision was, however, the general liberalisation process in other countries. The net impact on capital inflows to industry was negligible.

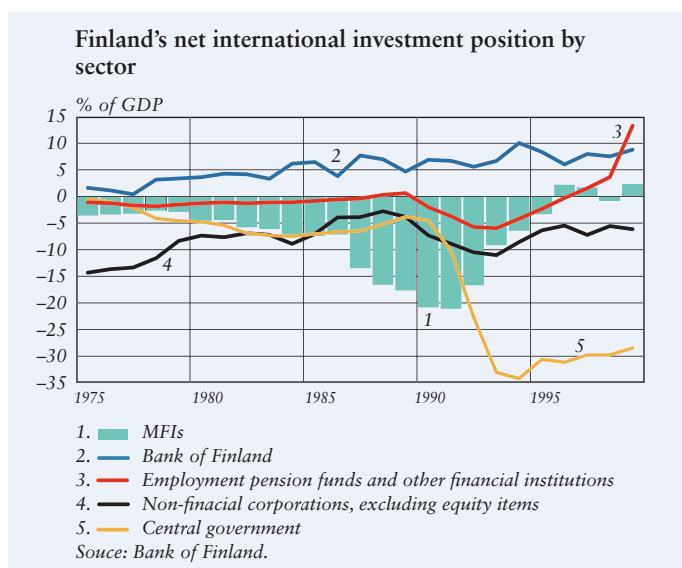
The most significant and fateful decision in the liberalisation process turned out to be the liberalisation of

long-term foreign borrowing by domestic market companies in autumn 1987. This resulted in an unexpectedly strong inflow of capital to the property and service sectors, via the banks. The savings bank group, with a market share of approximately 25%, was the engine for the intermediation of foreign currency loans. In the following years, the amount of intermediated foreign currency loans corresponded to nearly 20% of GDP (Chart 5).

The global economy experienced a moderate upturn in the late 1980s. Finland's economic growth accelerated, but it was not exceptionally robust. Growth focused on housing and other real estate investments. At the same time, asset prices inflated rapidly as a result of the growth in foreign currency credit and markka-denominated credit. Finland's current account deteriorated, but relatively little considering the strength of investment activity. The goods account remained virtually in balance.

After the liberalisation of the markets, the Bank of Finland found itself facing a difficult conundrum. It had moved from a quantitative monetary policy to one based on interest rates, but, under a fixed exchange rate regime, the impact of a rise in interest rates remained weak, as it only boosted the use of foreign currency credit. The rate of growth of bank lending accelerated – boosted by certain tax changes – to nearly

Chart 5.



30% in 1988, which caused a rapid rise in the debt ratio (Chart 6). In addition to the interest rate policy, the Bank of Finland resorted to measures used in the period of controls by collecting large cyclical reserves from the private and public sectors. In 1989, a limit was set on the growth of bank lending, subject to a sanction.

In March 1989, the markka was revalued slightly, by 4%. As the exchange rate was strengthened in a situation in which Finland's foreign price competitiveness had already weakened, the revaluation turned a capital inflow into an outflow. The financial markets tightened, and asset prices began to decline.

Around the same time, European integration deepened. The monetary policy of the European Community, in practice the policy of the Bundesbank, became the inevitable guiding principle for non-EC countries as well. In the Nordic countries, this resulted in a change of exchange rate linkage, from the trade basket to an ECU basket of EC currencies. The markka was pegged to the ECU in summer 1991, after Norway and Sweden. The change of currency basket did not have a significant impact on competitiveness (Chart 7). More importantly, linking the markka to the ECU underlined Finland's shift towards a European monetary policy. In 1991, the remaining restrictions on foreign capital flows were abolished.

Chart 6.

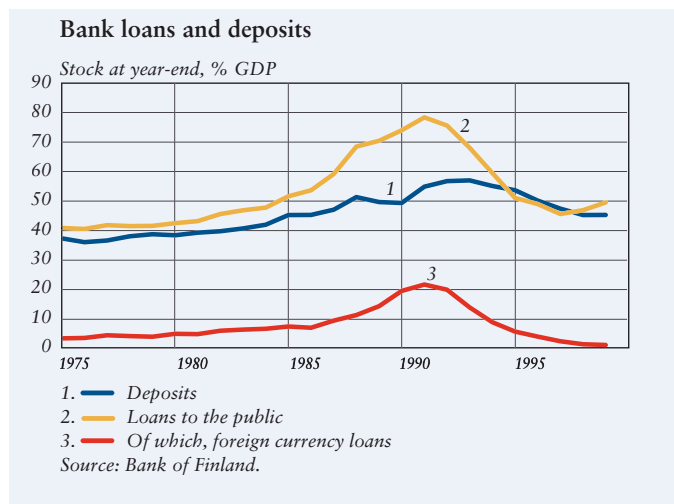
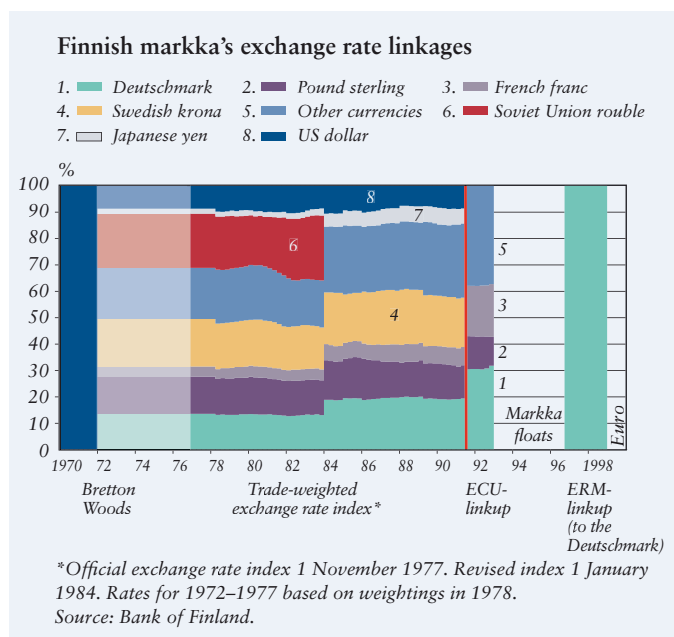


Chart 7.



### The economic and banking crisis of the early 1990s

Following the period of overheating, a marked downturn in the Finnish economy was to be anticipated.

Forecasts hovered around zero growth. The deepening of the recession was, however, surprisingly dramatic, particularly in 1991 (Chart 8). By 1993, GDP had declined in Finland by nearly 15% and domestic demand, mainly investment, by much more still.

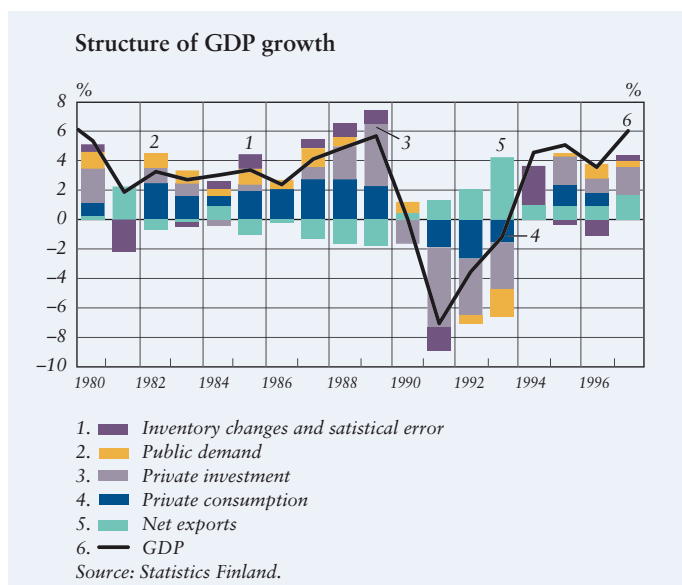
The general view in Finland is that the recession was due to liberalisation and the overvaluation of the exchange rate, but these factors alone do not come near to explaining a recession as deep as that. Liberalisation of the Finnish market did not crucially differ from liberalisation measures in other countries, and the external value of the Finnish markka was not exceptionally strong. The currencies of Sweden, Italy and Spain were also nearly 10% to 20% overvalued. However, these countries did not experience an economic collapse like Finland, even though

they struggled with their exchange rates for a longer time. Sweden did, however, experience a banking crisis. The high level of European interest rates that exacerbated the Finnish recession also burdened other countries with a weak currency.

An important special factor that hit the Finnish economy was the disintegration of the Soviet Union and the collapse of its economy, resulting in a dramatic decline in Finnish exports. This was estimated to have slowed GDP growth by 2% to 3%, and, despite the fact that there may have been many other, indirect effects, the collapse of exports to Soviet Union explains only part of the plunge in the Finnish economy.

Following the period of exchange controls and inflation, the Finnish economy was affected by a large number of special economic, institutional and attitudinal factors that led to a structural transformation. The developments were mainly due to the financial position of companies that had been weakened by exchange controls and inflation. Some of these companies were highly indebted, their equity capital was low and domestic market companies were threatened by large exchange rate exposures. Economic agents' liquidity was weak overall. As in the period of exchange controls, banks did not make loan loss provisions. Inflation was still expected to solve debt problems, and taxation made taking on debt attractive. On the other hand, the corporate and

Chart 8.





(particularly) the household sector's debt-to-GDP ratio was not high by international standards. In that respect, the depth of the crisis was surprising. The banking crisis was in part the result of deficiencies in the operational framework for monetary policy, eg weaknesses in the collateral management system and the underestimation of risks concerning banks' securities.

In autumn 1990, there began to be calls to devalue the markka. The authorities rejected these demands for a number of reasons. The markka was overvalued, but not exceptionally so, since an overvaluation of 10% to 20% was common, both in Finland and internationally. Costs had again risen sharply in the late 1980s and the markka had been strengthened, but the fluctuation range had a 4% to 5% margin for devaluation (Chart 9). Western European countries maintained a fixed exchange rate regime and the markka was not supposed to destabilise exchange rates. At that time, it was already impossible to control discretionary exchange rate changes. Foreign currency debt was disproportionately high. The goods account was in balance and the current account was approaching balance as investments fell. Inflation would become worse and the devaluation cycles would continue.

When the plunge in the economy became evident, exchange rate speculation heated up when the markka was linked to the ECU in

June 1991. The exchange rate was, however, not changed, although the possibility of adjusting it within its fluctuation band was discussed. However, the exchange rate was only gradually eased over the course of the summer to the lower range of the fluctuation band, with interest rates temporarily declining close to 10% (Chart 10). In autumn 1991, the aim

Chart 9.

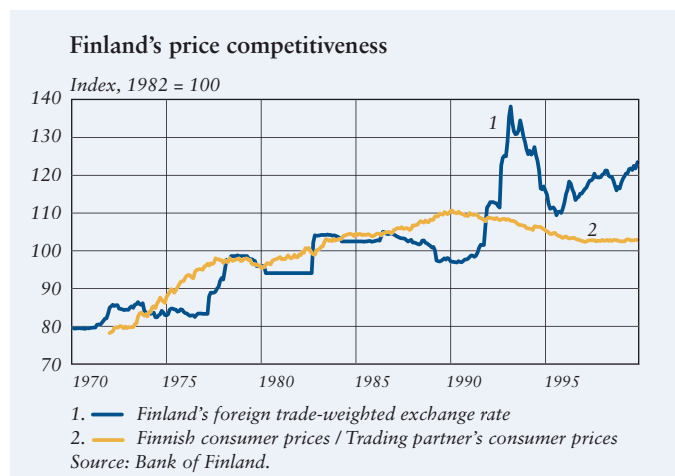
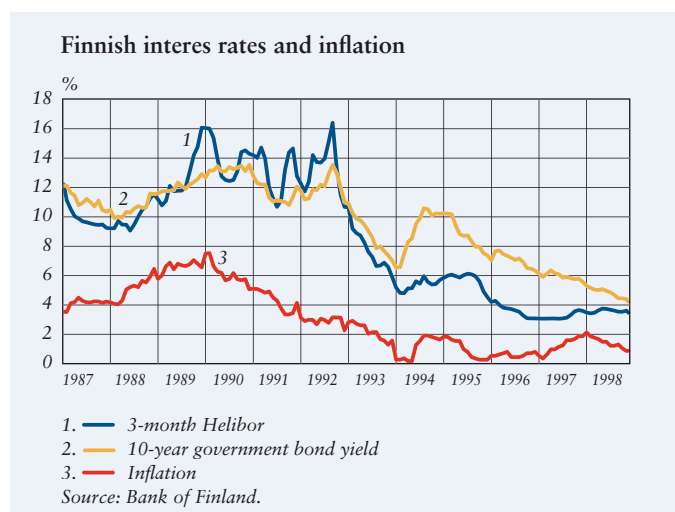


Chart 10.



was to reach an incomes policy settlement (the ‘Sorsa agreement’) that would lower wage costs by 7%.

However, pressure on the exchange rate eventually became overwhelming because of speculation by domestic companies (Chart 11). In 1991, these companies changed their forward exchange positions against the markka in the amount of nearly FIM 40 billion, equal to two months of imports and exports in value terms, ie approximately the amount of the Bank of Finland’s foreign exchange reserves. Foreign investors kept their faith in the exchange rate of the markka almost until the end.

In November 1991, the markka was devalued by 12%. Speculation continued, however, and the markka had to be floated in September 1992 (Chart 12). The currency depreciated

Chart 11.

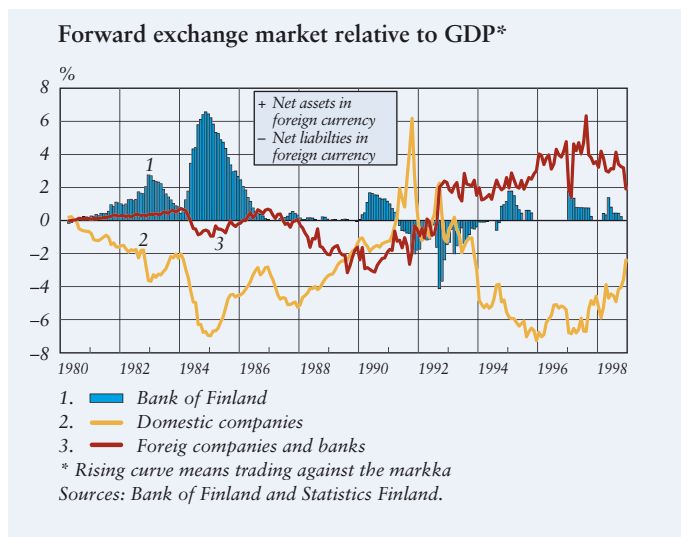
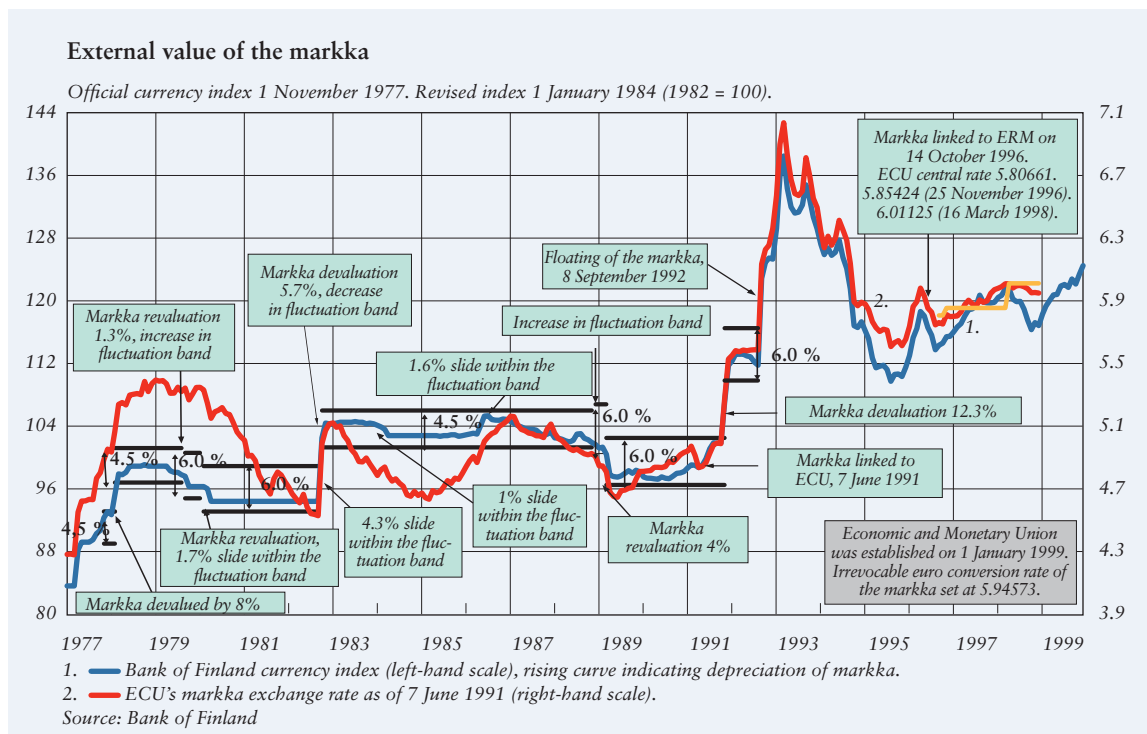


Chart 12.



immediately by approximately 15%. As a result of these decisions, the exchange rates of foreign currencies – and the value in markka of foreign currency debt – rose by as much as 40%, meaning the markka effectively depreciated by 30%. The fluctuation bands in the EC's exchange rate mechanism (ERM) had to be adjusted immediately when the markka was floated. In summer 1993, the width of ERM fluctuation bands had to be increased to  $\pm 15\%$ .

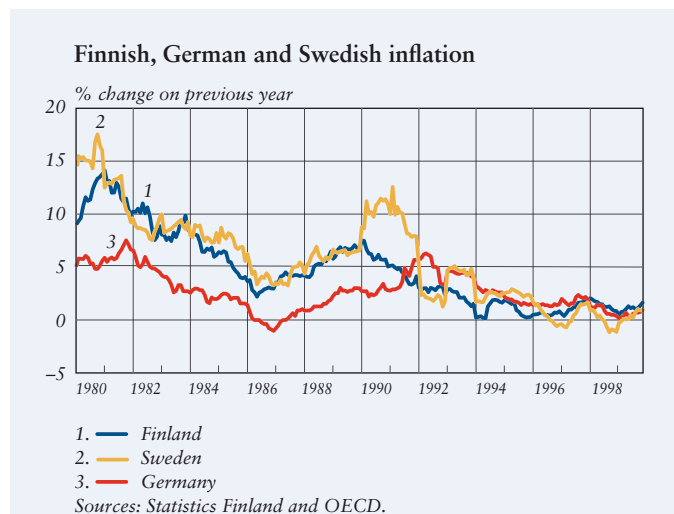
Finnish exports got a strong boost from the changes in exchange rates, but, on the other hand, the realisation of exchange rate risk and the high level of interest rates caused a deep recession in output for the domestic market. Foreign debt exceeded 50% of GDP. Unemployment increased to nearly 20%. Banks' loan losses increased to approximately 15% of GDP (for one year). The Savings Bank of Finland group nearly disappeared, and parts of it were sold to other banks. Over a third of bank employees lost their jobs. Roughly a quarter of the loan losses were covered by the savings banks' capital, another quarter by the shareholders of other banks, while nearly half had to be covered by taxpayers.

The Bank of Finland's ability to influence economic and financial market developments during the crisis was limited. Decisions concerning exchange rates were affected by external pressures; the central bank

did, however, seek to keep the depreciation of the markka to a minimum. The high level of interest rates was mainly based on the high German rates, added to by the risk premium for the Finnish economy and the impact of occasional speculation over devaluation. The floating of the markka was followed by confusion about foreign exchange policy, but it was soon decided to continue the floating for an undefined period. The monetary policy strategy was stabilised by announcing an inflation target in 1993. The aim was to stabilise underlying inflation at about 2% (Chart 13). As a result, Finland again began to closely follow German monetary policy.

There were widespread demands for the Bank of Finland to substantially lower its key interest rate. In the central bank's view, however, an internationally credible key interest rate

Chart 13.



would stabilise the economy more than uncertain experiments on interest rates. Fairly soon after the crisis, Finnish interest rates began to decline rapidly. Towards the end of the decade, Finland moved clearly from being one of the peripheral countries of Europe in terms of its interest rates to being one of the core group of countries. Inflation did not give way to deflation, despite the high level of interest rates.

During the crisis, the Bank of Finland could not even exert much influence over Finland's foreign liquidity position. As a result of the catastrophe concerning foreign currency loans, in particular, banks were forced to repay their foreign debt. It took Finland to the brink of an international liquidity crisis. Parliament had to pass a resolution guaranteeing the entire banking system. The only way out was heavy

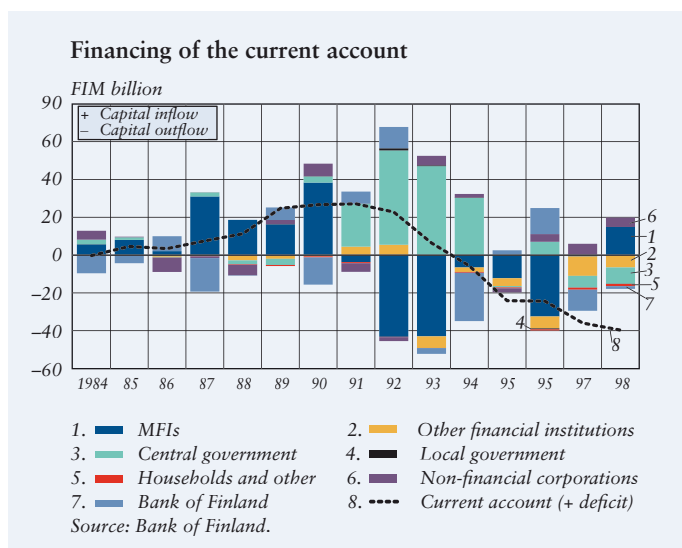
borrowing by the government.

Central government capital imports over three years amounted to over 20% of GDP (Chart 14). This was used to finance the large central government deficit and repayments on the foreign currency loans of the domestic market sector.

The recession continued until 1994. Developments were mixed for quite some time: exports increased, but the recovery in output for the domestic market was sluggish. Export growth was not due only to the exchange rate. Productivity improved rapidly and the recession in the domestic market freed resources for export activities. Exports were also boosted by the exceptional conquest of the world market by the technology company Nokia.

The economic crisis caused long-term mass unemployment and placed a heavy burden on many population groups, but the crisis also had a positive effect on the economy. The structures of the economy were reformed. Productivity improved significantly, particularly in the industrial sector, and corporate sector profitability reached record levels. This gradually pertained also to domestic market companies, and the sector shed its deficit and was able to start repaying its debts. The financial position of households deteriorated, however. Sectoral financial conditions returned to normal by international standard, with a surplus in the private sector and a deficit in the public

Chart 14.



sector. The public sector deficit peaked at over 10% of GDP (the borrowing requirement was even bigger). As a result of cost cutting and the recovery in the economy, the deficit began to shrink rapidly. The weakness of the markka, improvements in productivity and moderate incomes agreements boosted Finland's competitiveness to post-war record levels. The current account recorded a large surplus.

### **The road to Economic and Monetary Union**

The reform of the economy was crucial in helping Finland adjust to Economic and Monetary Union (EMU), both in the transitional period and as a member in the long term. However, during the economic crisis, EMU was still just a faint and distant objective. Finland applied for EC membership in the midst of the crisis in 1992 and joined the EU on 1 January 1995, the European Community having meanwhile become the European Union. In 1994, the European Monetary Institute (EMI) was established with the task of preparing for EMU. The Bank of Finland participated in the preparatory work, initially as an observer.

To prepare for entry into monetary union, monetary policy instruments and financial institutions had to be reformed. The monetary policy instruments were already market-based, and thus their

fundamentals were not changed in connection with the economic and banking crisis or in preparing for monetary union. Several adjustments were, however, made. In 1992, the Bank of Finland introduced a tender procedure in open market operations. In 1993, cash reserve deposits were replaced by a minimum reserve system. From 1995, the minimum reserve requirements were defined based on monthly averages instead of standard levels, which made the minimum reserve system part of banks' daily liquidity management. Well before the commencement of EMU, the systems were in line with the future systems of the European Central Bank.

Following developments in German interest rates, interest rates in Europe declined substantially in 1993, and Finnish rates approached the level of German rates. In spring 1994, however, interest rates began to rise sharply in the United States, which increased the differential between Finnish and German rates. The markka appreciated and banks' liquidity improved in 1994–1995. The Bank of Finland tied liquidity by issuing certificates of deposit. The central bank kept its policy rate fairly low, due to eg subdued inflationary pressures and uncertainty over economic growth.

The gentle floating of the markka was continued when Finland entered the EU on 1 January 1995. As the economy strengthened, the

*Finland's economic competitiveness was extremely good at the time of accession to EMU.*

external value of the markka appreciated in 1995 to pre-float levels, but began to depreciate thereafter. Entrance into the European Exchange Rate Mechanism (ERM) was delayed almost until the last minute. On the other hand, within the EU there were for a long time doubts about the markka's eligibility to join the ERM. The exchange rate of the markka was the only EMU criterion that was considered a problem for Finland. Consumer prices, public deficit and debt, and long-term interest rates fulfilled the criteria fairly easily.

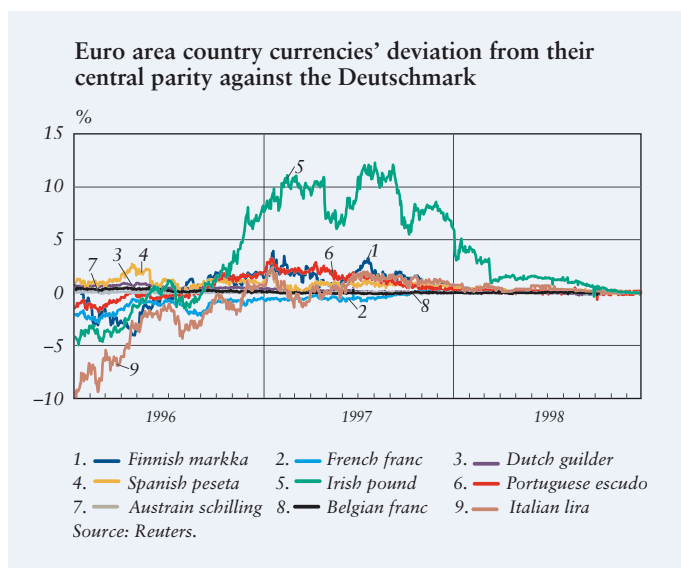
Only in October 1996 did the markka join the ERM. The nominal exchange rate corresponded to the level in previous years, but the real exchange rate was low. Finland's competitiveness was extremely good during the preparation for joining

EMU and immediately thereafter. This raised concerns about inflationary pressures. In the 1990s, the markka depreciated by approximately 20% in nominal terms. When the currency joined the ERM, the Bank of Finland announced that its monetary policy objective remained that of keeping the inflation rate at about 2%. This two-pronged strategy could easily have become problematic, but inflation was successfully contained and a serious conflict between the objectives did not arise.

However, in January 1997, the very low ECU rate of the markka resulted in extremely large purchases of markkaa by foreign investors. The Bank of Finland reacted with extremely large interventions that doubled its foreign reserves in a couple of weeks. When the commencement of Economic and Monetary Union was confirmed, the interest rates and exchange rates of the future euro area countries already more or less stabilised at a level close to each other in 1997 (Chart 15).

Legislation, eg the Act on the Bank of Finland, was revised to underline the central bank's political independence. The base rate had already lost its position in monetary policy, and because of EMU it was finally abandoned. The system of monetary controls had also included other reference rates set by the Bank of Finland. These rates were either abandoned or else the central bank

Chart 15.

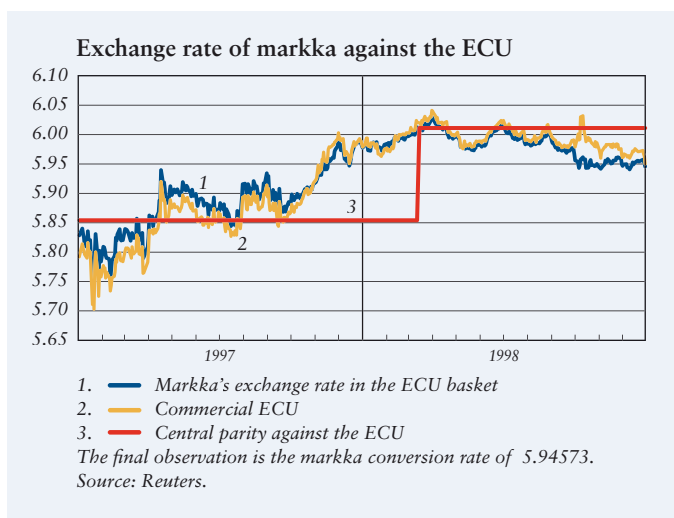


allowed market institutions to define and calculate them. Payment systems were revamped to achieve compliance with the Eurosystem.

In spring 1998, a decision was made on the countries that would enter Economic and Monetary Union on 1 January 1999, and the bilateral conversion rates were fixed. Some countries important to the Finnish economy, particularly Sweden, did not join EMU, which was a disappointment. ECU conversion rates could not yet be defined because the ECU basket included currencies that would not join EMU. The pound sterling, in particular, caused volatility in the ECU exchange rate (Chart 16).

1998 saw stable economic developments in the countries joining EMU, despite the Asian and Russian crises, among other things. On 31 December 1998 the central banks informed Brussels of the external value of their currency in US dollars, to six significant numbers, and the European Commission defined the

Chart 16.



conversion rates between the euro and the national currencies. The conversion rate of the Finnish markka was 5.94573.

*Keywords: monetary policy, Bank of Finland, regulation, liberalisation, economic crisis, banking crisis, Economic and Monetary Union*





# Organisation of the Bank of Finland

1 November 2010

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