Danmarks Nationalbank

Monetary Review 2nd Quarter Part 1

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DANMARKS NATIONAL BANK 2013

MONETARY REVIEW 2nd QUARTER 2013

The small picture on the front cover shows the "Banker's" clock, which was designed by Arne Jacobsen for the Danmarks Nationalbank building.

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SUMMARY

The international economy is generally showing signs of recovery, although economic activity in the euro area remains weak. The recovery in the USA is driven by the private sector, which has reduced its debt, supported by accommodative monetary and fiscal policies. In the euro area, the private-sector deleveraging process is still ongoing, primarily in the GIIPS member states, i.e. Greece, Ireland, Italy, Portugal and Spain, which – in conjunction with the necessary fiscal tightening – is dampening domestic demand. Despite the positive developments in the financial markets, there are indications of financial fragmentation in the euro area. This is reflected in e.g. higher lending rates and tighter credit conditions in the GIIPS member states than in the northern euro area member states. Combined with weak demand, these factors contribute to negative credit growth in the euro area overall.

Growth in the global economy is expected to accelerate during 2013 and 2014. The euro area economy is expected to start growing in the 2nd half of 2013 and to pick up further in 2014. US growth is expected to be somewhat higher than that of the euro area in both 2013 and 2014.

In Denmark, the gross domestic product, GDP, grew by 0.2 per cent in the 1st quarter. This means that economic activity remains below its potential, while the economy is adjusting in the wake of the overheating and the financial crisis. Current-account surpluses are robust and the underlying position of public finances will be almost balanced this year. The forecast operates with a gradual upswing, with broad-based growth in demand. The output and unemployment gaps are not wide and are expected to narrow in the coming years. GDP growth is estimated at 0.5 per cent this year. For 2014 and 2015, annual growth is expected to be 1.7 per cent.

Considering that financial conditions are strongly expansionary, the economic situation does not warrant easing of fiscal policy, even though the normalisation of private-sector demand has been protracted. Up to and including 2015, the government budget balance is estimated to be close to the Stability and Growth Pact's 3-per-cent limit, adjusted for the expected temporary income in 2013 and 2014 from early tax payments on capital pensions. So there is neither a need for nor scope for fiscal easing. Focus should be on increasing private- and public-sector productivity.

Given the large social costs of financial crises, the regulatory requirements for banks and mortgage banks to increase their equity capital are well-founded. This will not entail any substantial costs for the financial institutions or for output and employment in society.

THE INTERNATIONAL ECONOMY AND THE FINANCIAL MARKETS

Economic developments

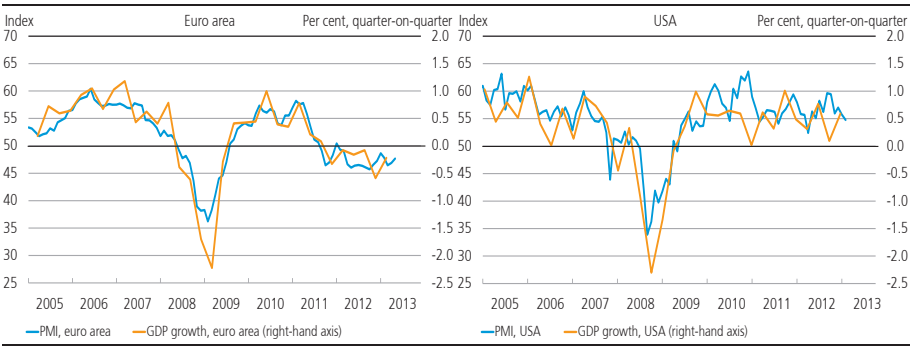
The international economy is generally showing signs of recovery, except for the euro area, where activity is weak.

Euro area GDP shrank by 0.2 per cent in the 1st quarter of 2013 and thus continued its downward trend, cf. Chart 1. Especially the southern European economies contracted, but member states such as the Netherlands and Finland also saw negative growth. Only a few member states, including Germany, had slightly positive growth. The composite PMI index, which is an indicator of economic activity, points to negative growth in the euro area also in the 2nd quarter of 2013.

In the USA, the upturn seems to be well underway. GDP rose by 0.6 per cent in the 1st quarter, driven by a strong private sector. But several indicators point to temporary moderation of activity in the 2nd quarter, reflecting e.g. a lagged effect of tax increases at the beginning of the year.

The Japanese economy is picking up. GDP rose by 0.9 per cent in the 1st quarter, following weak activity throughout most of 2012. The recovery is mainly attributable to accommodative monetary and fiscal policies aimed at boosting growth and ensuring rising instead of falling prices. As a result of the accommodative policies, domestic demand has increased and the yen has depreciated against other major currencies, including the euro and the dollar, which has supported exports.

PMI AND GDP GROWTH IN THE EURO AREA AND THE USA — Chart 1



Note: The indices are the Purchasing Managers' Index, PMI, for manufacturing and services (composite output).
Source: Markit and Reuters EcoWin.

In the emerging markets and developing countries, growth is generally accelerating, but China's economic growth is slower than before the international financial crisis. Annual GDP growth is now in the range of 8 per cent, down from more than 10 per cent.

Growth in the US economy has helped to reduce unemployment to 7.6 per cent in May. However, the employment rate has been nearly flat for the last 3-4 years. Conversely, euro area unemployment is rising and stood at 12.2 per cent in April, and the employment rate is still falling.

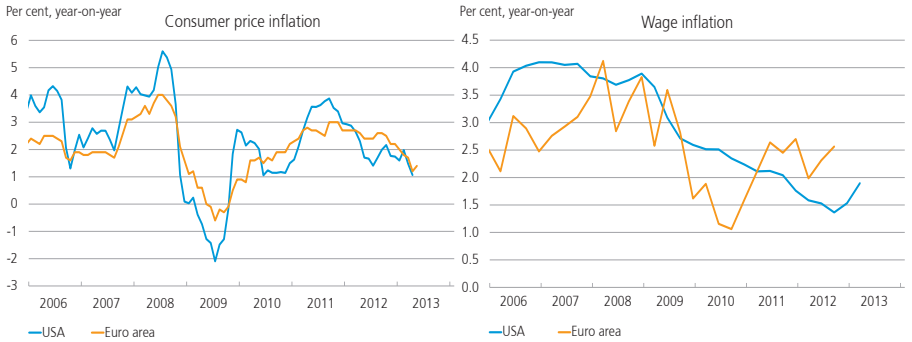
Against the backdrop of the weak economy and high unemployment, inflationary pressures are subdued in the euro area and the USA. Annual consumer price inflation in the euro area has shown a downward trend since late 2011, partly because energy prices have risen at a much slower pace. The inflation curve did, however, steepen slightly in May, to 1.4 per cent, cf. Chart 2 (left). In the USA, factors such as falling energy prices have reduced inflation to 1.1 per cent in April.

The moderate strengthening of the US labour market is also reflected in wages. Wage inflation in the USA remains dampened, but has increased in the last two quarters, cf. Chart 2 (right).

For some years, economic growth has been higher in the USA than in the euro area. This reflects stronger growth in the US population. The development in GDP per capita was close to that of the euro area until mid-2011, cf. Chart 3. But after that the USA has moved ahead of the euro area as the US recovery gained momentum, while the euro area has been in a recession.

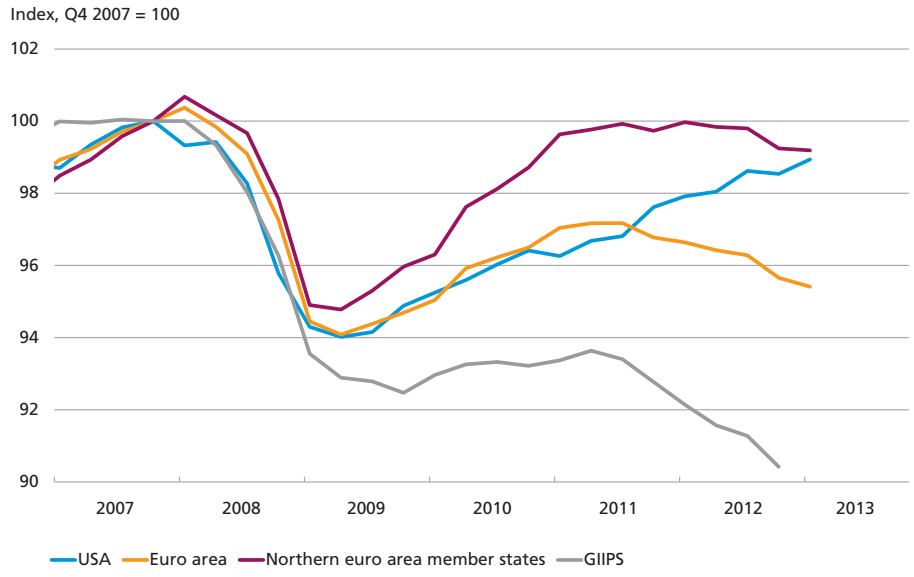
Economic developments within the euro area have varied considerably, both before and after the economic and financial crisis. Recent years' weak development in the euro area overall should be seen in the light of a severe downturn in the GIIPS member states, while the northern euro area member states have performed better. Activity in the GIIPS

CONSUMER PRICE INFLATION AND WAGE INFLATION IN INDUSTRY Chart 2



Source: Reuters EcoWin and OECD.

GDP PER CAPITA Chart 3



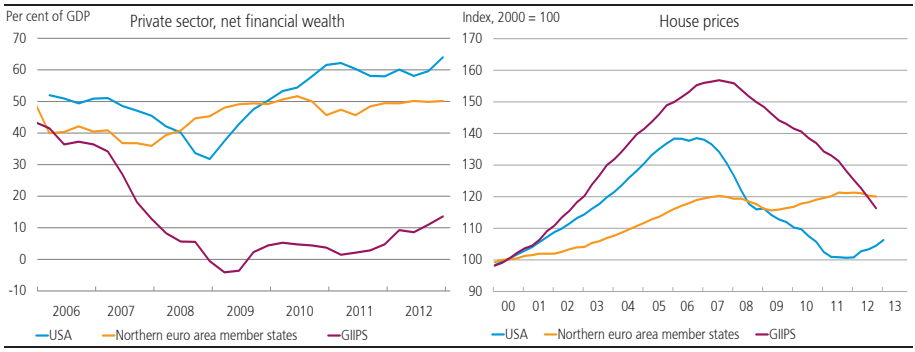
Note: Based on real GDP. Northern euro area member states include Germany, France, Belgium, the Netherlands, Finland and Austria. The GIIPS member states are exclusive of Greece, for which seasonally adjusted GDP data is not available.
Source: Reuters EcoWin, Eurostat, European Commission and own calculations.

member states is dampened because the private sector is slowly building up financial wealth again following a steep dive in the pre-crisis period, cf. Chart 4 (left), as a result of unsustainably high growth in domestic demand. One of the ways to build up financial wealth is to reduce debt. This deleveraging process has not been completed and is challenged by a high level of interest rates and fiscal tightening aimed at bringing public finances back on a sustainable path. At the same time, the value of these member states' non-financial assets is decreasing, e.g. due to falling house prices, cf. Chart 4 (right).

Developments in the northern euro area member states have been more stable, as both private-sector financial wealth and house prices have shown a virtually flat trend during the crisis. Consequently, these member states have not had any need to adjust their balances correspondingly. In this part of the euro area, the economy began to grow again already in 2009, and until mid-2011 it outpaced the US economy, cf. Chart 3. Underlying reasons include easing of fiscal policy and falling interest rates. But since the autumn of 2011 growth has been weak in the northern euro area member states.

In the USA, the private sector has to a considerable extent reduced its debt. Financial wealth grew substantially during 2009 and 2010, which more than offset the fall seen in 2007 and 2008, cf. Chart 4 (left). This is

THE PRIVATE SECTOR'S NET FINANCIAL WEALTH AND HOUSE PRICES Chart 4



Note: In this context, the private sector comprises households and non-financial corporations. Financial corporations are not included. For the USA, the private sector's net financial wealth has been calculated as the total net foreign assets less net public wealth and the financial sector's net wealth. Northern euro area member states include Austria, Belgium, Finland, France and Germany. The right-hand chart also includes the Netherlands. The GIIPS member states are Greece, Italy, Portugal and Spain. The right-hand chart also includes Ireland. The house price indices have been weighted according to each member state's GDP as a ratio of the group's total GDP.

Source: Reuters EcoWin, OECD, ECB, Bureau of Economic Analysis and own calculations.

mainly due to a large increase in private-sector savings, but could also be attributed to default on and cancellation of e.g. household mortgage debt. Deleveraging has been supported by very low interest rates and easing of monetary and fiscal policies. The fall in interest rates has reduced private-sector interest payments substantially. Moreover, there are positive signs in the housing market in the form of rising house prices, cf. Chart 4 (right). This all supports the outlook for domestic demand.

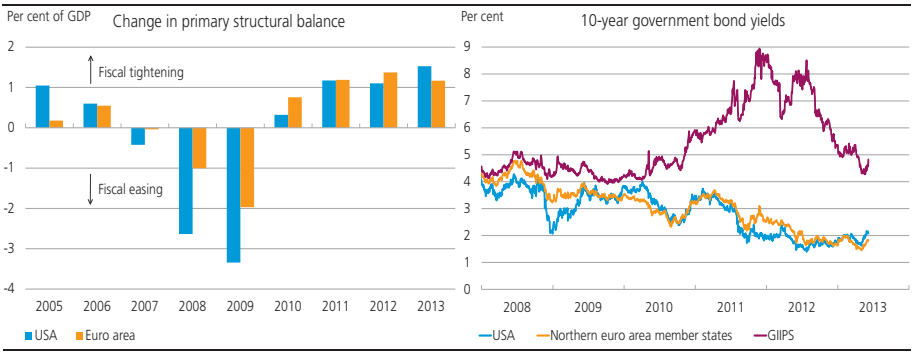
The USA eased its fiscal policy when the crisis erupted, and considerably more so than the euro area did, cf. Chart 5. Although this had a severe negative impact on US public finances, it did not lead to rising government bond yields – unlike in the GIIPS member states. Combined with easing of fiscal and monetary policies, very low and falling government bond yields contributed to restoring domestic private-sector demand, which is a major reason why the US private sector has recovered faster than that of the euro area and is now fuelling the emerging upturn.

Financial conditions

Tensions in the financial markets have eased, which is reflected in narrowing of the government bond yield spreads between the GIIPS member states and Germany. The yield spreads widened temporarily around the time of the Italian election in late February and to a lesser extent in connection with the turmoil surrounding the adoption of the financial assistance programme for Cyprus in March, but the fluctuations were smaller than those seen in connection with similar events in the last couple of years.

FISCAL TIGHTENING AND EASING AND 10-YEAR GOVERNMENT BOND YIELDS

Chart 5



Note: Government bond yields have been weighted according to each member state's GDP as a ratio of the group's total GDP.
Source: OECD, Reuters EcoWin and own calculations.

The positive trend in the stock markets has also continued, despite the subdued growth expectations. There is undoubtedly a connection between the accommodative monetary policies in the largest economies and the rising stock indices.

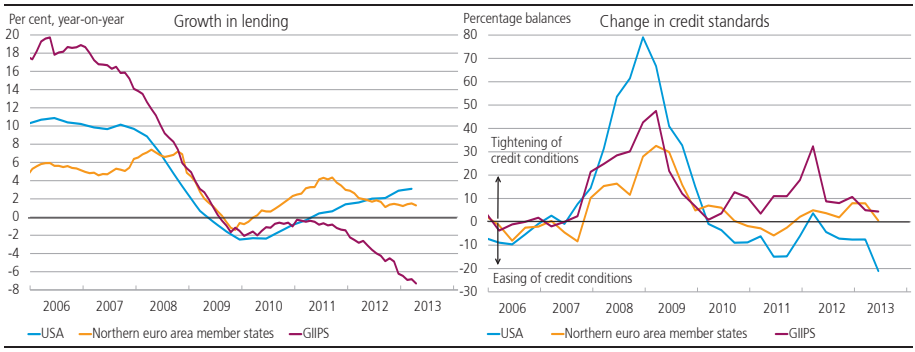
For the euro area overall, growth in lending to households and firms has been negative over the last year. The lending survey performed by the European Central Bank, ECB, also shows that credit conditions are still being tightened in the euro area as a whole. The main underlying factors are the banks' negative expectations of the economy in general and hence of their customers' creditworthiness. Bank capitalisation also plays a role. On the other hand, the banks' liquidity and access to market funding are now so good that, viewed in isolation, these two factors foster easing of credit conditions.

The reason for the negative credit growth in the euro area overall is a strong fall in outstanding credits in GIIPS member states. In contrast, credit growth has been positive in the northern euro area member states in recent years, cf. Chart 6 (left).

In the GIIPS member states, negative credit growth reflects weak demand for loans as a result of the worsened economic situation and debt reduction among households and firms. At the same time, lending is impeded on the supply side. Bank lending rates are somewhat higher in the GIIPS member states than in the rest of the euro area, and the ECB's lending survey shows that credit conditions have been tightened in the GIIPS member states, especially since mid-2010, while they have remained more or less unchanged in the northern euro area member states, cf. Chart 6 (right). Credit conditions in the GIIPS have been tightened although the capital flows to the GIIPS member states reversed in

LENDING TO HOUSEHOLDS AND NON-FINANCIAL CORPORATIONS AND CHANGES IN CREDIT CONDITIONS

Chart 6



Note: Northern euro area member states include Austria, Belgium, Finland, France, Germany and the Netherlands. The GIIPS member states are Greece, Ireland, Italy, Portugal and Spain. However, Finland, Belgium, France and Greece are not included in the right-hand chart. The series for lending in Italy, Greece and the Netherland have been adjusted for a data break in June 2010. Values for credit standards indicate the share of banks stating tighter credit conditions less the share stating easier credit conditions. The credit standards for the individual member states have been weighted according to each member state's GDP as a ratio of the group's total GDP.

Source: Reuters EcoWin, ECB and own calculations.

the autumn of 2012 so that private-sector capital is returning, following the strong outflows until the late summer of 2012.

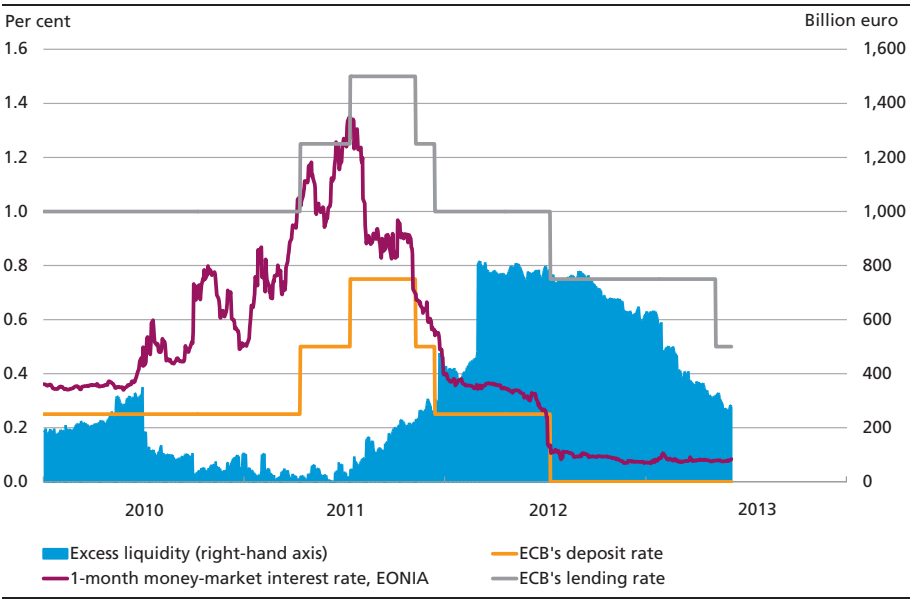
In the USA, credit growth has been positive since early 2011 and is now also higher than in the northern euro area member states. Likewise, credit standards have been eased in the USA since the beginning of 2010, cf. Chart 6. Credit conditions have improved more rapidly in the USA than in the euro area, reflecting the faster recovery of the US banking sector after the financial crisis.

The US banking sector experienced considerable problems during the crisis, and several financial institutions became distressed. The authorities launched a massive response. The Federal Reserve stepped in with liquidity support for the banks in the form of new lending facilities and expansion of existing facilities. At the same time, the US Treasury made direct capital injections into the banks, e.g. via the Troubled Asset Relief Program, TARP, and several distressed financial institutions were bailed out. The US deposit guarantee fund was also strengthened. Under the TARP, a total of 419 billion dollars was paid out, of which 95 per cent has been repaid according to the Treasury. It has also benefitted the recovery in the US banking sector that US firms to a lesser extent than their European counterparts base their funding on bank loans. Consequently, US banks have been less exposed than European banks to losses on lending to non-financial corporations. Instead, owners of corporate bonds and other debt securities have suffered losses.

Since the beginning of 2013, euro area banks have had the option to redeem loans under the ECB's 3-year longer-term refinancing operation,

EXCESS LIQUIDITY AND MONETARY-POLICY INTEREST RATES AND 1-MONTH MONEY-MARKET INTEREST RATE (EONIA) IN THE EURO AREA

Chart 7



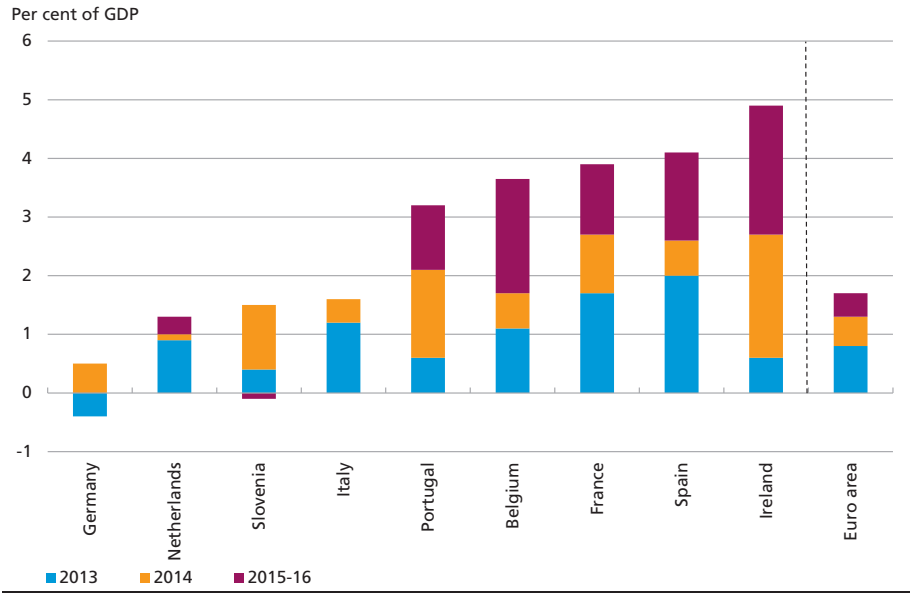
Note: Excess liquidity calculated as outstanding open market operations less required reserves and autonomous factors.
Source: Reuters EcoWin.

LTRO, prematurely. By early June, the banks had paid back a total of 296 billion euro, corresponding to 29 per cent of the total original loan volume of 1,019 billion euro. This shows that money-market conditions have gradually improved. Although the redemptions have reduced excess liquidity in the euro area, there is still ample liquidity and short-term money-market interest rates are close to the ECB's deposit rate, cf. Chart 7.

Economic policy

In the USA, fiscal policy is expected to be tightened by approximately 2 per cent of GDP in 2013, primarily due to expiry of tax cuts at the beginning of the year and the automatic savings mechanism that took effect on 1 March. Nevertheless, GDP growth is expected to be around 2 per cent, driven by sound growth in the private sector. In its forecast from May, the OECD expects the government deficit to be reduced from 8.7 per cent of GDP in 2012 to 5.4 per cent of GDP in 2013. Although the government budget deficit is expected to be reduced in the coming years, the USA still lacks a credible medium-term fiscal strategy. Fiscal policy negotiations will take place over the summer, during which an increase of the debt ceiling will also be on the agenda. It is uncertain whether an agreement can be reached that provides the necessary medium-term consolidation.

PLANNED FISCAL TIGHTENING Chart 8



Note: Expected fiscal consolidation in the individual years is stated as the member states' own expectations of changes in the structural balance relative to the preceding year as stated in their 2013 stability programmes.
Source: European Commission and stability programmes 2013.

In the euro area, the pace of fiscal consolidation is expected to decline from 1.5 per cent of GDP in 2012 to 0.75 per cent of GDP in 2013, measured by the change in the structural balance. One of the reasons is that the government deficit of the euro area overall has been reduced substantially in recent years. The deficit is expected to fall to 2.9 per cent of GDP in 2013 from a peak of 6.4 per cent of GDP in 2009. All the same, a number of euro area member states are planning to consolidate their public finances considerably in the coming years, cf. Chart 8. This should primarily be viewed against their challenges in relation to restoring sustainable public finances. Furthermore, the Fiscal Compact came into force on 1 January this year, meaning that euro area member states must ensure rapid convergence towards a structural deficit of 0.5 per cent of GDP or less as a main rule.[1]

A number of EU member states have already achieved their medium-term objectives, MTOs, for the structural balance or are planning to do so within the next three years. But France, the Netherlands, Ireland, Malta, Slovakia, Slovenia, Spain and the Czech Republic do not expect to meet their MTOs by 2016, either because the need for adjustment is considerable or because the planned annual adjustment does not com-

[1] The Fiscal Compact applies to all EU member states except the Czech Republic and the UK.

ply with the basic provision of the Stability and Growth Pact to improve the structural balance by 0.5 per cent of GDP annually if the MTO has not yet been met.

A number of EU member states have received recommendations under the Stability and Growth Pact to bring their government deficits below 3 per cent of GDP by a given deadline. However, several of them have had difficulty in meeting these deadlines, one reason being that economic developments have fallen short of the assumptions at the time when the recommendations were adopted. Consequently, the European Commission has proposed that the deadline be postponed for several member states. A one-year extension is proposed for the Netherlands and Portugal. But although the main rule is a one-year extension, the Commission has proposed two years for France, Spain, Slovenia and Poland. Moreover, the Commission has proposed that, as the next step in the excessive deficit procedure, a notice, i.e. a more severe recommendation, should be given to Belgium. In relation to Malta, the Commission has proposed a recommendation to correct the excessive deficit by 2014 at the latest.

In addition, the Commission has proposed abrogating the excessive deficit procedure for Italy, Latvia, Lithuania, Romania and Hungary, as these member states are assessed to have reduced their government deficits to below 3 per cent of GDP in a credible and sustainable manner. Abrogation of the excessive deficit procedure is necessary if Latvia is to obtain a positive convergence assessment with a view to joining the euro area from 1 January 2014.

All proposals in relation to the excessive deficit procedure will be considered by the Ecofin Council on 21 June.

On 2 May, the ECB decided to reduce its lending rate from 0.75 to 0.5 per cent, citing falling inflation and low underlying inflationary pressure. At the same time, the ECB pointed out that loan dynamics remain subdued and that weak economic sentiment has extended into the spring. So, according to the ECB, the cut in interest rates should contribute to support prospects for a recovery later in the year. The reduction will mainly benefit the banks using the ECB as a funding source, i.e. primarily banks in the GIIPS member states.

At the beginning of the year, the Japanese parliament adopted extraordinary fiscal easing measures to the tune of 2.2 per cent of GDP; at the same time, the normal budget was increased by 0.5 per cent of GDP compared with last year. This was done despite the fact that Japan already had a government budget deficit in the range of 10 per cent of GDP in 2012 and that its gross government debt amounts to around 240 per cent of GDP. The extraordinary easing is distributed on reconstruction after the earthquake and prevention of disasters (0.8 per cent of GDP),

measures to promote growth in the form of e.g. private-sector investment incentives, support for small and medium-sized enterprises and training and employment initiatives (0.7 per cent of GDP) and improvement of the healthcare system, police and armed forces (0.7 per cent of GDP).

At the same time, the Bank of Japan decided to introduce a monetary-policy target of lifting inflation to 2 per cent as fast as possible. In April, the Bank of Japan followed up this target and announced a new asset purchase programme, stipulating that the target of raising inflation to 2 per cent must be met within two years, cf. Box 1. The primary objective of the programme is to boost inflation expectations. Implied expectations in relation to Japanese inflation up to end-2017 – stated as the

JAPAN'S MONETARY POLICY Box 1

On 4 April, the Bank of Japan, BoJ, announced a new asset purchase programme. This is a follow-up to the objective of lifting inflation to 2 per cent as soon as possible, which was agreed with the Japanese government in January. A target of two years has now been specified for meeting this objective.

The asset purchase programme is part of a new strategy under which the BoJ will change its operational target from a rate of interest to managing the monetary base. The BoJ will almost double the money base, from 138,000 billion yen at end-2012 to 270,000 billion yen at end-2014, i.e. from approximately 30 to approximately 55 per cent of GDP. By comparison, the US and euro area money bases equal less than 20 per cent of GDP. The increase will primarily be effected by more than doubling the BoJ's portfolio of Japanese government bonds, to 190,000 billion yen, or approximately 40 per cent of GDP. Gross monthly purchases will amount to 7,500 billion yen. In addition, corporate bonds and mortgage bonds etc. will be purchased until end-2014 with a view to reducing risk premia. That will add another 1,200 billion yen a month, so that the total programme will involve gross purchases for 8,700 billion yen, or approximately 87 billion dollars, per month. At 85 billion dollars per month, the Federal Reserve's current purchase programme for the USA, which has an economy about three times the size of Japan's, is at roughly the same level. The BoJ has announced that the purchases will continue as long as it is necessary for maintaining the inflation target.

In connection with the launch of the new purchase programme, the existing programme, which primarily comprised purchases of securities with shorter maturities, was discontinued. Moreover, restrictions on maturities and the volume of bonds that the BoJ may hold were lifted. The BoJ will now extend the average maturity of the bonds it purchases from 3 to 7 years.

In fiscal year 2013, the Japanese Ministry of Finance plans to issue government bonds for 170,500 billion yen. On an annualised basis, the BoJ's monthly gross purchases of government bonds for 7,500 billion yen correspond to 53 per cent of the issuance volume.

Until now domestic investors (households and firms) have funded most of the government's deficit and debt by purchasing government bonds. In September 2012, foreign investors held only 9 per cent of Japanese government bonds, while the Bank of Japan held around 11 per cent.

difference between the yields on ordinary and inflation-linked government bonds – have risen from around 0.75 per cent at the turn of the year to almost 2 per cent now. The easing of fiscal and monetary policies is expected to be followed by structural reforms of especially the labour and product markets after the election to the upper chamber of the Japanese parliament in July.

In March, the British government revised the remit for the Bank of England's Monetary Policy Committee. Price stability remains the main objective, but in future it will be possible temporarily to let inflation depart from the target of 2 per cent in order to avoid causing undesirable volatility in output. Moreover, in August the Bank of England is to provide an assessment of the merits of deploying explicit forward guidance, i.e. indications of how the Bank plans to adjust monetary policy in accordance with future economic developments with a view to influencing expectations.

In early April, Cyprus concluded an agreement with the Commission, the ECB and the International Monetary Fund, IMF, on a financial assistance programme for 2013-16. The agreement entails financial support of up to 10 billion euro, including 1 billion euro from the IMF, cf. Box 2.

Growth outlook

Growth in the global economy is expected to accelerate during 2013 and 2014. The euro area economy is expected to start growing in the 2nd half of 2013, after having contracted since the end of 2011. But due to

INTERNATIONAL ORGANISATIONS' GROWTH ESTIMATES FOR SELECTED COUNTRIES

Table 1

		2013			2014		
Per cent	2012	OECD	EU	IMF	OECD	EU	IMF
USA	2.2	1.9	1.9	1.9	2.8	2.6	3.0
Euro area	-0.5	-0.6	-0.4	-0.3	1.1	1.2	1.1
Germany	0.9	0.4	0.4	0.6	1.9	1.8	1.5
France	0.0	-0.3	-0.1	-0.1	0.8	1.1	0.9
Spain	-1.4	-1.7	-1.5	-1.6	0.4	0.9	0.7
Italy	-2.4	-1.8	-1.3	-1.5	0.4	0.7	0.5
Greece	-6.4	-4.8	-4.2	-4.2	-1.2	0.6	0.6
Ireland	0.9	1.0	1.1	1.1	1.9	2.2	2.2
Portugal	-3.2	-2.7	-2.3	-2.3	0.2	0.6	0.6
UK	0.3	0.8	0.6	0.7	1.5	1.7	1.5
Sweden	1.2	1.3	1.5	1.0	2.5	2.5	2.2
Japan	2.0	1.6	1.4	1.6	1.4	1.6	1.4
China	7.8	7.8	8.0	8.0	8.4	8.1	8.2

Source: European Commission, *spring forecast*, May 2013, OECD, *Economic Outlook*, May 2013, IMF, *World Economic Outlook,* April 2013.

the weak 4th quarter of 2012, overall growth will be negative in 2013, cf. Table 1. Exports will drive the gradual recovery, while domestic demand will be dampened by e.g. tight credit conditions and debt reduction in both the private and public sectors. For 2014, growth is expected to be moderate at 1.1 per cent, but with substantial divergence across euro area member states.

In the USA, economic activity is expected to rise from 1.9 per cent in 2013 to 2.8 per cent in 2014. The moderate growth in 2013 should be seen in the light of the fiscal tightening, which – viewed in isolation – dampens consumption. In 2014, the contribution from fiscal policy will be less negative.

THE FINANCIAL ASSISTANCE PROGRAMME FOR CYPRUS Box 2

On 25 June 2012, Cyprus asked the Commission, the ECB and the IMF for financial assistance. On 2 April 2013, agreement was reached on a financial assistance programme for 2013-16 with a view to bringing the Cypriot economy back on track. The agreement entails financial support of up to 10 billion euro, including 1 billion euro from the IMF. Under the programme, public finances must be consolidated, structural reforms must be introduced and the banking sector must be downscaled, including by reconstructing the two largest banks.

The economic challenges in Cyprus reflect, inter alia, a burst housing bubble and a large banking sector with a high exposure to Greece. Strong capital inflows from abroad meant that the Cypriot banking sector in 2011 reached a size corresponding to more than eight times GDP. At the same time, Cyprus had a government deficit of more than 5 per cent of GDP. Combined with uncertainty about the banking sector, this caused government bond yields to soar from the autumn of 2010.

With a view to consolidating public finances, measures to the tune of around 5 per cent of GDP in 2013-16 were adopted in December 2012. Until 2018, further measures in the amount of approximately 7 per cent of GDP must be adopted, of which 2.2 per cent are planned for 2013, primarily comprising tax increases so that e.g. corporate tax will be raised from 10 to 12.5 per cent.

In February, an independent consultant report found that the Cypriot banking sector needed capital injections totalling some 9 billion euro and that the country's two largest banks, Bank of Cyprus, BoC, and Cyprus Popular Bank, CPB, had serious solvency problems. Consequently, the two banks have been restructured, and the smaller one, CPB, has been split into a good and a bad part. The good part has been transferred to the BoC, while the bad part is being wound up. The two banks' Greek branches have been sold to the Greek bank Piraeus. The restructuring has involved considerable losses for the banks' investors and large-scale depositors. Deposits below 100,000 euro are comprised by the deposit guarantee scheme and have not been affected. The process of recapitalising and downscaling the banking sector will continue in the coming years, the aim being to reduce the sector's size to the EU average by end-2018.

In connection with the implementation of the agreement, a number of capital restrictions were introduced to prevent an outflow of capital. These restrictions still apply, but have been eased.

Although the international economy is showing signs of recovery, economic growth is subject to uncertainty. The risk that the euro area crisis flares up can be reduced by sticking to the reform agenda and implementing the planned fiscal adjustments, which will help to restore fiscal sustainability.

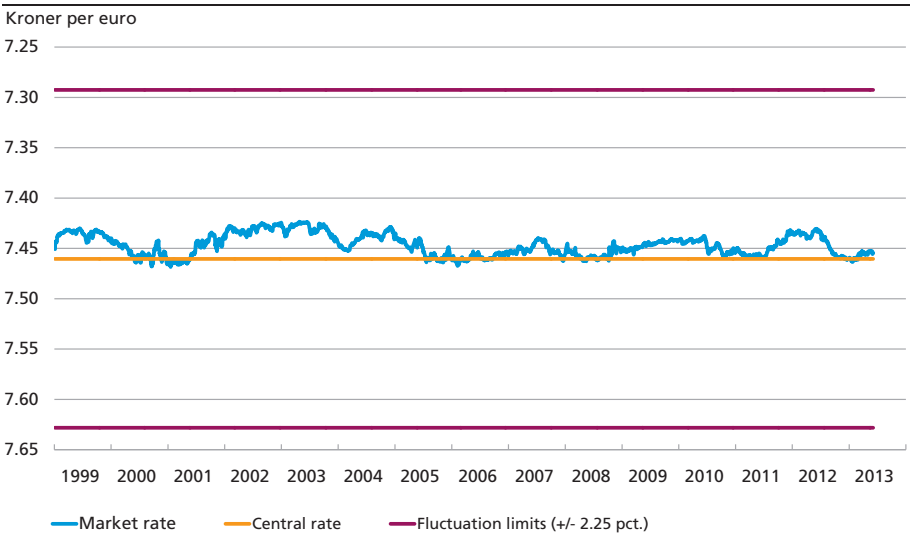
The USA and Japan are seriously challenged in relation to fiscal sustainability. Adoption of credible medium-term fiscal consolidation plans will contribute to fiscal sustainability and reduce the risk of sudden and sharp changes in market interest rates and exchange rates.

MONETARY AND EXCHANGE-RATE CONDITIONS

In recent months, the krone has been stable vis-à-vis the euro at a level close to its central rate in ERM 2, cf. Chart 9. The krone strengthened marginally in March, when the euro weakened in response to the heightened uncertainty about the European debt crisis, especially the handling of the debt programme for Cyprus and the uncertainty about the formation of an Italian government after the general election. The krone strengthened marginally after Danmarks Nationalbank's and the ECB's interest-rate cuts in early May; since then the exchange rate has been stable at around kr. 745.35 per 100 euro.

With effect from 3 May, Danmarks Nationalbank reduced its lending rate by 0.10 percentage point to 0.20 per cent. The rate of interest on

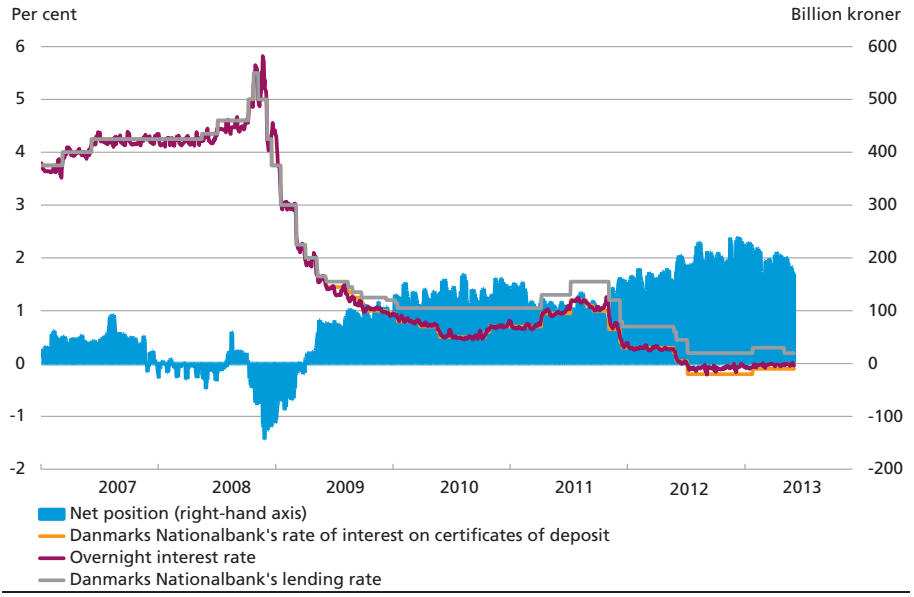
EXCHANGE RATE OF THE KRONE VIS-À-VIS THE EURO Chart 9



Note: Reverse scale. The most recent observation is from 4 June 2013.
Source: Danmarks Nationalbank.

THE BANKS' AND MORTGAGE BANKS' NET POSITION VIS-À-VIS DANMARKS NATIONALBANK, MONETARY-POLICY INTEREST RATES AND THE OVERNIGHT INTEREST RATE

Chart 10



Note: The overnight interest rate is a 5-day moving average of the turnover-weighted uncollateralised T/N rate. The most recent observations are from 3 June 2013.
Source: Reuters EcoWin and Danmarks Nationalbank.

certificates of deposit and the current-account and discount rate remained unchanged. The interest-rate reduction took place in connection with the ECB's announcement of a reduction of the interest rate on the main refinancing operations by 0.25 percentage point to 0.50 per cent and of the rate on the marginal lending facility by 0.50 percentage point to 1.00 per cent.

Both in Denmark and in the euro area, monetary-policy deposit rates remained unchanged. In the current situation, in which Danish monetary-policy counterparties have a substantial need to place liquidity, as reflected in a positive net position vis-à-vis Danmarks Nationalbank, the monetary-policy deposit rates are determinants of the money-market interest rates, cf. Chart 10. The same applies to the link between excess liquidity and money-market interest rates in the euro area, cf. the section on the international economy. This means that money-market interest rates were virtually unaffected by the reductions of lending rates in both Denmark and the euro area.

The low monetary-policy interest rates leave limited leeway for a reduction of Danmarks Nationalbank's lending rate. Against this background, the lending rate will remain positive. Experience with negative interest rates is described in Box 3.

NEGATIVE INTEREST RATES Box 3

In early July 2012, Danmarks Nationalbank reduced its monetary-policy interest rates and introduced a negative rate of interest on certificates of deposit on account of the fixed-exchange-rate policy. The negative rate of interest was to ensure the pass-through of the interest-rate cut to the money-market interest rates, which determine the exchange rate of the krone.

The krone rate and the money market

When the negative rate of interest on certificates of deposit was introduced, Danmarks Nationalbank also reduced the lending rate and the discount rate. This was done in response to the ECB's reduction of its monetary-policy interest rates. Prior to that, in the period from August 2011 up to and including June 2012, Danmarks Nationalbank had purchased foreign exchange in the market for kr. 91 billion and had repeatedly reduced its rates of interest unilaterally. In July 2012, the spreads between Danmarks Nationalbank's and the ECB's interest rates were kept unchanged. Immediately after the interest-rate cut the krone weakened against the euro, and during the autumn of 2012 it weakened further in the context of euro area developments, as confidence in the management of the sovereign debt crises in a number of European countries generally improved. In March 2013, the krone strengthened marginally and since then the exchange rate against the euro has been around 745.35.

When interest rates were cut in July 2012, money-market interest rates followed suit, and since then they have generally mirrored the rate of interest on certificates of deposit, which is the benchmark for money-market interest rates in the current situation with a large and positive net position. In January 2013, the 1-3-month CITA swap rates turned positive for the first time since mid-June 2012. This reflected market expectations that Danmarks Nationalbank would raise its rates of interest, which it did in late January 2013. The corresponding euro area interest rates also rose in January, but to a lesser extent, so that the collateralised money-market spread became less negative. The money-market spread between Denmark and the euro area was not affected by the ECB's and Danmarks Nationalbank's interest-rate reductions in early May 2013.

After the introduction of a negative rate of interest on certificates of deposit, turnover in the overnight money market decreased. The low level of turnover has continued into 2013, but money-market turnover is only slightly below previous levels. Money-market turnover in the euro area has also shown a downward trend.

Circulation of 500- and 1,000-krone banknotes, which are primarily used as a store of value, was unchanged after the introduction of the negative rate of interest on certificates of deposit. Circulation increased in December 2012 and March 2013, but this is a usual seasonal pattern. In many ways it is impractical and costly for both banks and citizens to hold cash and make cash transactions, which is why the circulation of banknotes was not affected. In addition, it has undoubtedly been important that the banks, for all practical purposes, did not introduce negative retail deposit rates. In a few cases, corporate deposit rates have been negative, but this has primarily been for special short-term deposits.

The capital market and retail interest rates

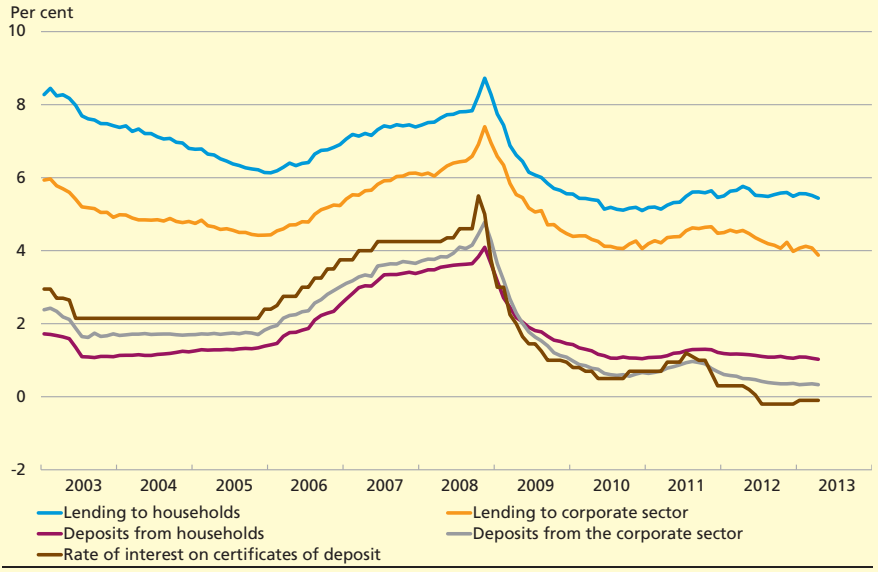
Yields on Danish government and mortgage bonds are historically low. This reflects the low money-market interest rates in the euro area and Denmark, as well as strong foreign

CONTINUED Box 3

demand for Danish bonds. Heightened uncertainty in relation to the European sovereign debt crisis made investors turn to Denmark in the autumn of 2011. For a more detailed description of Danish assets, capital flows and the krone rate during this period, see article "Was the Krone a Safe Haven during the Sovereign Debt Crisis?" in this Monetary Review.

The negative rate of interest on certificates of deposit entails that the monetary-policy counterparties have to pay to hold certificates of deposit. From the introduction of the negative rate of interest on certificates of deposit in July 2012 until end-April 2013, the banks' total direct expenses in this respect were just under kr. 230 million.[1] On 7 June 2013, the monetary-policy counterparties held certificates of deposit for some kr. 160 billion. If the holdings remain unchanged and the rate of interest is also kept unchanged, the annual expenses are approximately kr. 160 million, corresponding to 0.014 per cent of the banks' total lending to non-MFIs.

THE RATE OF INTEREST ON CERTIFICATES OF DEPOSIT AND THE BANKS' LENDING AND DEPOSIT RATES Chart 11



Note: Average rate of interest on outstanding deposits and lending. The most recent observations are from April 2013.
Source: Danmarks Nationalbank.

The unusually low level of interest rates has made it difficult for banks to reduce deposit rates further. For most ordinary overnight deposits, the rate of interest was already zero or close to zero before the negative rate of interest on certificates of deposit was introduced. Consequently, it was not possible for the banks fully to pass on the reduction of the monetary-policy interest rates to their depositors, and deposit rates have not fallen as much as the rate of interest on certificates of deposit since the series of interest-rate cuts began in the summer of 2011, cf. Chart 11. Since late July 2012, the corporate lending rate has fallen by 0.4 percentage point, to 3.9 per cent at

CONTINUED Box 3

end-April 2013. In the same period, the rate on lending to households has fallen by 0.1 percentage point, to 5.4 per cent. The rate of interest on a large share of the banks' lending to households against the home as collateral is contractually linked to the rate of interest on certificates of deposit. In connection with the introduction of a negative rate of interest on certificates of deposit, the pass-through from the interest-rate cut to the banks' retail interest rates was not substantially different than on other occasions when the rate of interest on certificates of deposit has also been low, albeit still positive. The purpose of introducing a negative rate of interest on certificates of deposit was not that it was to be transmitted to retail interest rates and the real economy, but to money-market interest rates and thus the exchange rate of the krone.

The bank's interest-rate margin – i.e. the spread between lending and deposit rates – increased from 2008 until the beginning of 2012. This is consistent with the deterioration of the economy, the reason being that in a recession the banks have increased credit risks on their lending and earnings fall. The interest-rate margin has been more or less unchanged since the introduction of a negative rate of interest on certificates of deposit.

[1] On average, the banks had placed kr. 164 billion in certificates of deposit at a negative rate of interest from 6 July 2012 until end-April 2013. The rate of interest has been -0.20 per cent and -0.10 per cent, respectively, during this period.

With effect from 7 June, Danmarks Nationalbank reduced the limit for the current-account deposits of the monetary-policy counterparties from kr. 101.1 billion to kr. 67.6 billion. This should be seen against the background of the monetary-policy counterparties' redemptions of 3-year loans totalling around kr. 35 billion in May.

Since the end of February, the foreign-exchange reserve has grown by kr. 9.1 billion, to kr. 492.3 billion at end-May. Danmarks Nationalbank has not intervened in the foreign-exchange market since January 2013. The increase in the reserve is mainly attributable to the government having, in net terms, raised foreign loans of kr. 8.8 billion in April. Unless Danmarks Nationalbank wishes to increase or reduce the foreign-exchange reserve, the central government, as a general rule, raises debt denominated in foreign currency equivalent to the redemptions on the foreign debt. In 2013, the central government's redemptions on long-term foreign debt correspond to 2.8 billion euro (approximately kr. 20.9 billion). The foreign-exchange reserve has increased considerably since 2008, and therefore it is expected that the government's contribution to the reserve can be reduced in 2013.

Developments in the money and capital markets

From March to May, Danish money-market interest rates were more or less unchanged. This applies to both collateralised and uncollateralised interest rates. A similar development was seen in the euro area.

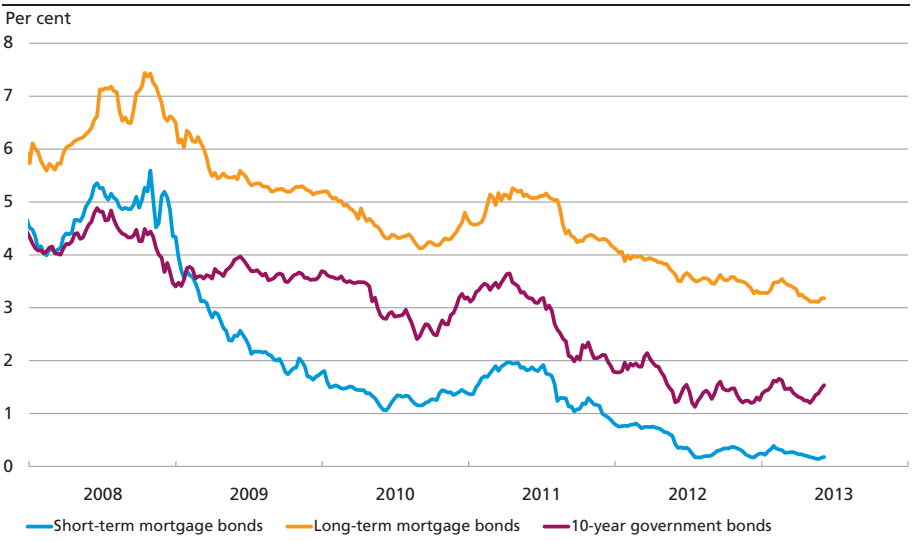
Government bond yields have declined in recent months. Sales in the T-bill auction on 30 May totalled kr. 9.28 billion. The marginal rate fell a little, so that 3-, 6- and 9-month T-bills sold at interest rates of -0.15, -0.12 and -0.10 per cent, respectively. The yields on long-term Danish government bonds fell from mid-February 2013 to early May, followed by a slight increase. At end-May, the 10-year government bond yield was 1.5 per cent, i.e. practically the same low level as in the autumn of 2012, cf. Chart 12. The 10-year bond yield has basically mirrored its German counterpart. The Danish-German yield spread was positive, but close to zero, in most of March and April, while it was marginally negative in the last part of May.

Implied market-based inflation expectations, which can be calculated on the basis of the spread between the yields to maturity of nominal and inflation-linked 10-year government bonds, have declined from almost 1.9 per cent in mid-March to just under 1.7 per cent at the end of May. Hence the implied market expectations are that inflation until 2023 will average around 1.7 per cent. This level more or less matches the equivalent German break-even inflation, which, however, fluctuated slightly more in April and May.

Short- and long-term mortgage yields have also been falling in recent months, from an already low level. The short-term yield more than halved from end-January to end-May, when it stood at 0.2 per cent. The long-term yield has fallen by 0.4 percentage point since mid-February, to just under 3.2 per cent at end-May, cf. Chart 12.

The mortgage banks held auctions for bonds underlying mortgages with interest-rate adjustment from late February to mid-March. The yield for a 1-year adjustable-rate loan landed at 0.5 per cent, 0.8 per cent for a 3-year loan and 1.3 per cent for a 5-year loan. Hence, yields in the auctions were a little lower than last year. Foreign demand was strong in the auctions. Adjustable-rate loans with deferred amortisation are still the most popular loan type for owner-occupied dwellings. At end-April 2013, these loans accounted for just over 45 per cent of total mortgage lending. Due to the low yield on mortgage bonds, some homeowners have remortgaged into loans with either lower interest rates or longer fixed-interest periods or they have switched from variable-rate to fixed-rate loans. In addition, changes in the mortgage banks' administration margins have made loans with deferred amortisation, short fixed-interest periods and high loan-to-value (LTV) ratios more expensive. The share of adjustable-rate loans with a fixed-interest period of up to 1 year has fallen from 53 per cent in April 2012 to 48 per cent in April this year. In this period, especially the share of adjustable-rate loans with longer fixed-interest periods than 1 year has risen, while

YIELDS ON DANISH GOVERNMENT AND MORTGAGE BONDS Chart 12



Note: Weekly data. The short-term yield is the 1-year yield based on fixed bullets. The long-term yield is an average yield to maturity for 30-year fixed-rate callable bonds. The 10-year government bond yield is a calculated par yield. The most recent observations are from calendar week 23.
Source: Nordea Analytics, Association of Danish Mortgage Banks and Danmarks Nationalbank.

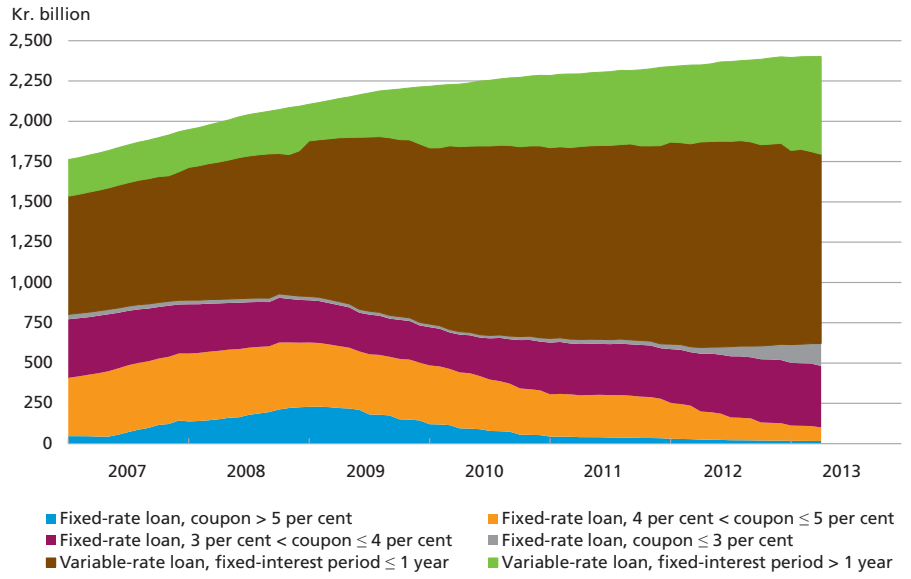
the share of fixed-rate loans has been virtually unchanged. Most of the fixed-rate mortgage loans still have a coupon rate of 3-4 per cent. The share of fixed-rate loans with a coupon rate of 3 per cent or less has increased since the summer of 2012, to 22 per cent at end-April 2013, cf. Chart 13.

The banks' lending and deposit rates for households and the corporate sector have been more or less unchanged over the last year, cf. Box 3. However, there has been a tendency for corporate interest rates to mirror Danmarks Nationalbank's interest-rate changes slightly more closely. From July 2012 to April 2013, the banks' interest-rate margin, measured as the spread between average lending and deposit rates, fell by 0.3 percentage point to 3.5 per cent for the corporate sector, while it was practically unchanged at 4.4 per cent for households.

Bank Rescue Package 2 gave banks and mortgage banks the option to issue senior debt with individual government guarantees and maturities of up to 3 years. In 2009-10, issues under this scheme totalled kr. 193.6 billion. By end-April 2013, kr. 32.3 billion of the original issuance was outstanding. Assuming normal run-off, only kr. 12 billion will still not be redeemed by the end of June 2013. The small and medium-sized banks used the government guarantee scheme to a great extent, and several of these banks have had to adjust their business models to leave the guarantee scheme again. This has to some extent been done by reducing

FIXED-RATE AND VARIABLE-RATE MORTGAGE LOANS BROKEN DOWN BY COUPON RATE AND FIXED-INTEREST PERIOD

Chart 13



Note: The coupon distribution has been calculated on the basis of the bonds' nominal value. The most recent observations are from April 2013.
Source: Danmarks Nationalbank.

customer funding gaps. Since the 3rd quarter of 2012, banks in the Danish Financial Supervisory Authority's groups 2 and 3 have had customer funding surpluses. Danmarks Nationalbank's liquidity measures in the form of 3-year loans and expansion of the collateral base supplement the banks' access to funding and ensure flexible adjustment to a situation without government guarantees.

In December 2012, the Folketing (Danish parliament) passed a bill to establish a Systemic Risk Council. The purpose of the Systemic Risk Council is to help prevent and reduce systemic risks in the financial system, thereby shielding the real economy and the financial system against future financial crises. The Council was set up at the beginning of the year and held its first meeting on 8 April. The Council will meet at least on a quarterly basis.

The Committee on Systemically Important Financial Institutions in Denmark presented its report in March 2013. The Committee recommends a system for identification and regulation of systemically important financial institutions, SIFIs. Today, the financial markets distinguish clearly between banks with different capitalisation. The return requirements are lower for both equity and debt for the more well-capitalised banks. International studies from e.g. the Basel Committee on Banking Super-

vision, BCBS, find that higher capital requirements will result in a limited increase in the banks' lending rates and a subdued negative effect on growth. The effect is more than offset by a lower risk of financial crises. Due to primarily implicit government guarantees, banks could, in theory, experience that their total funding costs rise if they hold more equity capital, cf. Danmarks Nationalbank, *Financial stability*, 2013. This rise is attributable to redistribution between the banks and the central government/deposit guarantee scheme, and it can be remedied – if politically desirable – via the taxation system and the contribution structure of the deposit guarantee scheme. Higher funding costs are thus not a good argument for the banks to refrain from holding more equity. On the contrary, high equity enables the banks to suffer substantial losses without becoming distressed. This reduces the risk of financial crises and their serious economic consequences.

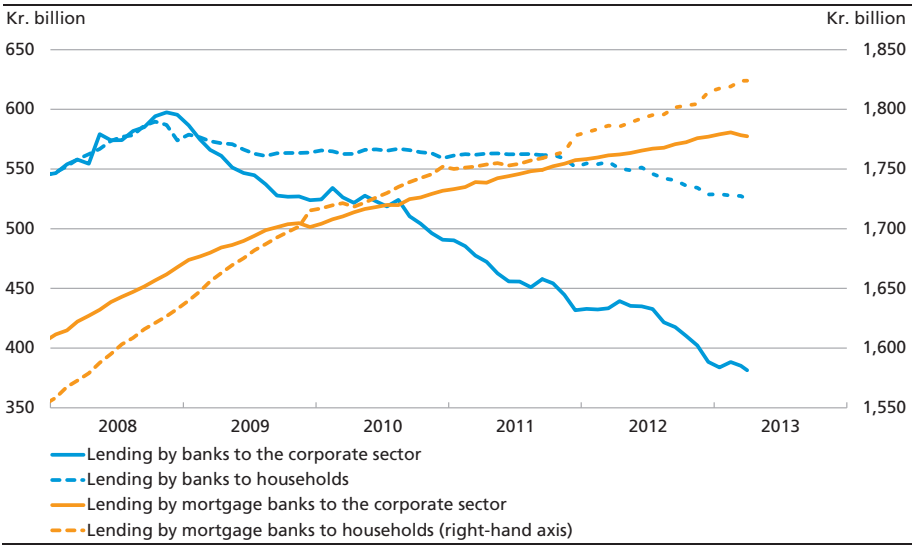
In Danmarks Nationalbank's assessment, the recommendations of the Committee should be implemented as soon as possible. It is important to ensure adequate defences around systemically important financial institutions so that they do not become distressed. This reduces the risk of financial crises that have serious economic consequences.

Lending by banks and mortgage banks

The banks' and mortgage banks' total seasonally adjusted lending to households and the corporate sector has shown a flat trend since the turn of the year. Lending to households rose by kr. 5.5 billion, corresponding to an increase of 0.2 per cent, while corporate lending fell by kr. 6.4 billion, corresponding to a reduction of 0.7 per cent, cf. Chart 14. However, it should be noted that the Financial Stability Company in March 2013 restructured Amagerbanken af 2011 and Fjordbank Mors af 2011 as subsidiaries without banking licences, so that their lending were excluded from the statistics. These two banks' corporate lending totalled around kr. 8.4 billion. Adjusted for this, the lending statistics show that the banks' and mortgage banks' corporate lending increased by approximately kr. 2 billion in the first four months of the year. Issuance of corporate bonds by Danish firms was virtually unchanged in the same period. At end-April, bond loans totalled kr. 177 billion.

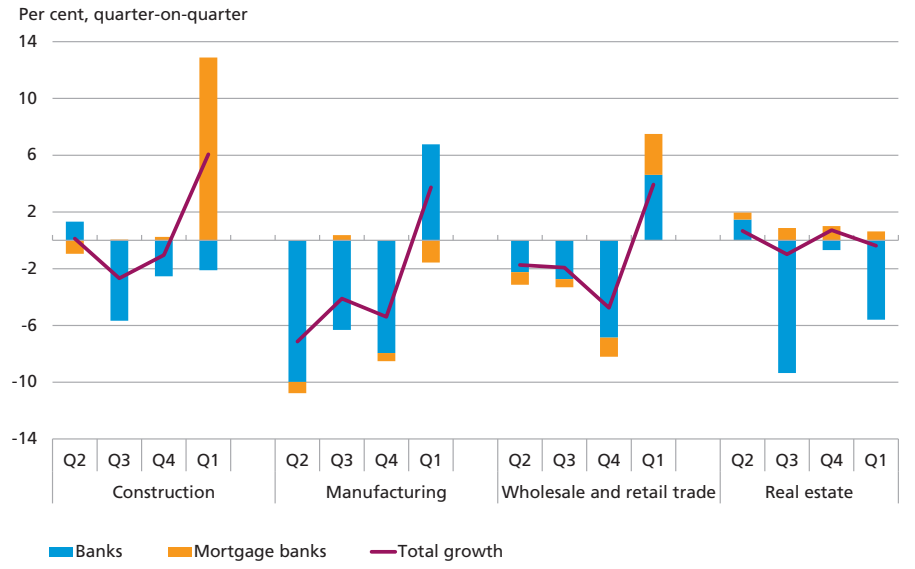
Lending by banks and mortgage banks to the manufacturing, construction and wholesale and retail trade industries increased from the 4th quarter of 2012 to the 1st quarter of 2013, cf. Chart 15. In the same period, lending to a number of smaller industries fell slightly. The above transfer of loans under the Financial Stability Company also meant that lending by banks to the real estate industry fell by almost 6 per cent.

LENDING BY BANKS AND MORTGAGE BANKS — Chart 14



Note: Seasonally adjusted lending. The most recent observations are from April 2013.
Source: Danmarks Nationalbank.

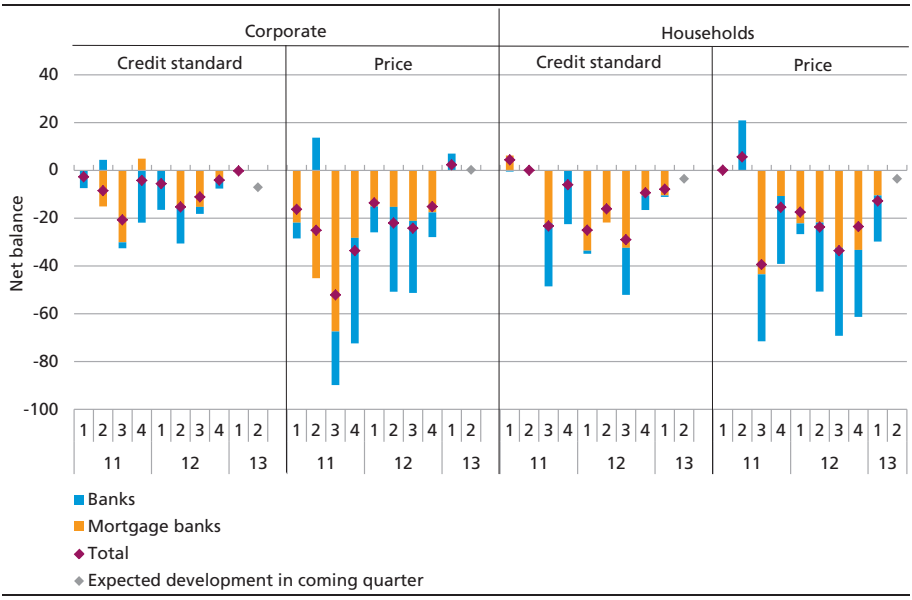
GROWTH IN LENDING BY BANKS AND MORTGAGE BANKS TO SELECTED INDUSTRIES — Chart 15



Note: Not seasonally adjusted. Real estate accounts for 51 per cent of the banks' and mortgage banks' total lending to non-financial corporations. The shares for wholesale and retail trade, manufacturing and construction are 9, 8 and 4 per cent, respectively. The most recent observations are from the 1st quarter of 2013.
Source: Danmarks Nationalbank.

CHANGES IN CREDIT POLICIES AND THE CONTRIBUTION OF PRICES TO CREDIT POLICIES

Chart 16



Note: A negative percentage balance indicates tightening, while a positive percentage balance indicates easing compared with the preceding quarter. In the lending survey, contributions to changes in credit policies are broken down by price, collateral requirements and other factors. The financial institutions do not have to weigh the factors, and consequently they do not add up to the change in credit policies.

Source: Danmarks Nationalbank.

According to Danmarks Nationalbank's lending survey, credit policies to the corporate sector were virtually unchanged from the 4th quarter of 2012 to the 1st quarter of 2013. However, a few banks have eased terms a little by reducing the price of loans to the corporate sector. In the same period, credit policies to households were tightened a little, also via prices, by both banks and mortgage banks, cf. Chart 16. During this period, the banks have not seen any substantial changes in demand for loans from the corporate sector, while demand from the households has fallen slightly. The mortgage banks have seen a small increase in demand for loans from both the corporate sector and households.

In November 2012, the Ministry of Business and Growth's committee on corporate bonds as sources of funding for small and medium-sized enterprises issued a number of recommendations aimed, inter alia, at removing legislative barriers to issuance of corporate bonds. The agreement – based on part two of the Danish government's growth plan, Vækstplan DK, which was concluded on 24 April 2013 – states that the market for issuance of corporate bonds in Denmark should be strengthened so as to promote a market-based alternative to bank funding. According to the agreement, this is to be achieved partly by enabling the use of a trustee, i.e. a link between the bond issuer and the investors, who

can represent the interests of investors vis-à-vis the issuer, and partly by allowing banks to issue bonds on the basis of a portfolio of business loans.

THE DANISH ECONOMY

GDP rose by 0.2 per cent in the 1st quarter of 2013, adjusted for price developments and seasonal fluctuations, cf. Table 2. Domestic demand rose by 0.6 per cent as a result of a large increase in inventories, a small increase in private consumption and a fall in fixed capital formation. Public consumption fell by 2.1 per cent. Total exports fell by 0.4 per cent in the 1st quarter, while imports rose by 1.6 per cent, so that net exports made a negative contribution to growth. Compared with the same quarter of 2012, GDP was 0.8 per cent lower.

Private consumption increased by 0.1 per cent in the 1st quarter of 2013. Despite still lower interest payments, household disposable income is growing only slightly and wealth is virtually unchanged; this explains the weak development. The low inflation helps to buoy up purchasing power.

KEY ECONOMIC VARIABLES — Table 2

Real growth on preceding period, per cent	2012	2013	2014	2015	2012/2013 Q3	Q4	Q1
GDP	-0.5	0.5	1.7	1.7	0.8	-0.9	0.2
Private consumption	0.6	0.5	1.7	1.8	0.0	-0.1	0.1
Public consumption	0.2	0.6	0.9	0.7	1.0	0.9	-2.1
Residential investment	-9.5	-0.4	4.3	2.6	-0.5	-0.6	-2.0
Public investment	7.4	-6.6	1.4	0.9	-1.8	0.7	-3.3
Business investment	2.7	5.1	4.8	4.2	0.0	4.1	0.5
Inventory investment[1]	-0.4	0.3	0.0	0.1	1.0	-0.7	1.9
Exports	0.9	0.2	4.2	3.2	-0.9	-2.1	-0.4
Industrial exports	2.3	1.1	5.5	4.9	1.3	-4.7	1.0
Imports	1.8	1.2	4.7	3.7	-0.4	-0.8	1.6
Employment, 1,000 persons	2,759	2,748	2,758	2,772	2,762	2,757	2,751
Gross unemployment, 1,000 persons	162	158	162	154	163	163	157
Net unemployment, 1,000 persons	118	122	128	122	123	123	120
Balance of payments, per cent of GDP	5.5	4.9	4.6	4.6	6.2	5.5	3.5
Government balance, per cent of GDP	-4.3	-1.5	-1.9	-2.8	-4.5	-3.2	-1.9
House prices, per cent year-on-year	-2.9	2.4	2.7	2.5	-2.1	0.9	1.1
Consumer prices, per cent year-on-year	2.4	0.8	1.9	1.8	2.4	2.1	0.9
Hourly wages, per cent year-on-year	1.8	1.8	2.3	2.7	1.6	1.7	1.6

[1] Contribution to GDP growth.
Note: Calculations based on statistical information up to and including 3 June 2013.

In 2012, the consumption ratio, measured as household consumption in relation to disposable income, was close to its average for the last 20 years, cf. the article "Consumption, Income and Wealth" in this Monetary Review. This is remarkable in view of the low level of interest rates. In the first year of the forecast, private consumption rises more or less in step with household disposable income, after which the consumption ratio increases a little.

Business investment grew by 0.5 per cent in the 1st quarter of 2013 and is expected to rise steadily throughout the year, investment in plant and equipment being boosted by a special investment window adopted as part of the tax reform in the summer of 2012, which will permit increased depreciation for tax purposes until the end of this year. After that, investment in plant and equipment is expected to grow in line with added value in the non-agricultural sector, so that the investment ratio for plant and equipment is almost flat in the forecast period at a level corresponding to the average since 1995. The fall in non-residential construction in 2012 and the first part of 2013 is expected to reverse in the 2nd half of the year. The need for new construction is dampened by the weak development in activity and by a considerable supply of vacant premises. In the coming years, some recovery is expected so that the investment ratio for building and construction is slowly redressed after the plunge in 2008-09. Residential investment is expected to show subdued growth in the projection period.

The private-sector savings surplus has been very high in the last three years, especially in financial and non-financial corporations. For the latter, this reflects a higher-than-normal profit ratio that is not matched by a correspondingly high investment ratio. Add to this a substantial return on foreign investments. Households have traditionally had a considerable savings deficit, but in recent years savings have been more or less in balance. For 2013-15 the private-sector savings surplus is expected to remain substantial.

The weak recovery in many of Denmark's largest export markets entails export growth well below average this year. In the projection, export markets are expected gradually to pick up from a weak level. In the next few quarters, industrial exports are expected to regain some of the market shares lost at the end of 2012. However, the forecast operates with decreasing market shares again in the last two years of the forecast period. Imports will also grow slowly this year as domestic demand will pick up only slightly.

Overall, activity in Denmark remains below its potential level, while the economy is adjusting in the wake of the overheating. Both corporate and household investment remains low despite the accommodative financial

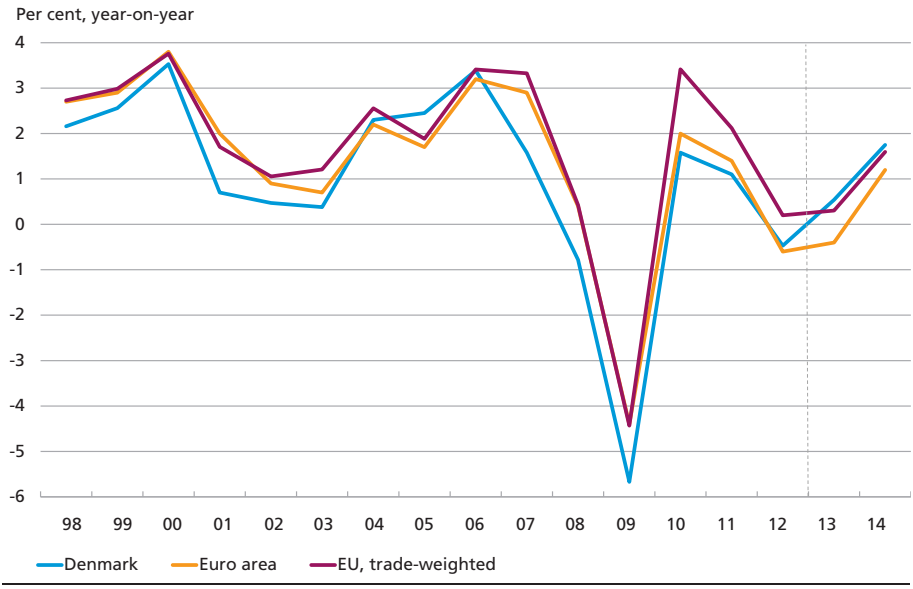
conditions. The consumption ratio is close to the average level, and companies still have large savings surpluses. Looking ahead, a gradual upswing is expected, with a steady increase in demand over the forecast period. This reflects broad-based growth in private consumption, residential construction and business investment. Rebuilding of inventories is also expected to make a small contribution to growth in the next couple of years. On the other hand, public demand will grow only moderately in 2013-15. As a result, GDP is estimated to grow by 0.5 per cent this year and 1.7 per cent in both 2014 and 2015.

Risks in the forecast are assessed to be balanced, albeit slightly more on the upside than in the March forecast. The housing market has shown positive signs over the last year. If turnover continues to rise, domestic private-sector demand may increase sooner than in the forecast scenario. Activity abroad, especially in the euro area, is important to the Danish economy, but subject to uncertainty, cf. Box 4, which illustrates the significance of alternative assumptions of export-market growth.

The Danish economy is strongly influenced by developments in neighbouring countries. Danish growth is more or less in line with that of the euro area, cf. Chart 17. However, the euro area is split, with relatively high growth in northern Europe, excluding the UK, until now, while southern Europe has been in a recession, cf. the section on the

GDP GROWTH IN DENMARK AND AMONG DENMARK'S CLOSEST TRADING PARTNERS

Chart 17



Source: OECD, Statistics Denmark and own calculations. European Commission's forecast for the euro area and selected EU member states. Danmarks Nationalbank's forecast for Denmark.

international economy. Denmark has had difficulty in keeping up with its two most important trading partners, Germany and Sweden, which did not experience the same overheating prior to the financial crisis.

ALTERNATIVE SCENARIOS FOR THE DANISH ECONOMY — Box 4

The pronounced lack of economic confidence among Danish households and firms in recent years should be viewed in the light of the repercussions of the financial crisis in Europe and the USA and the implications for Danish exporters. The risk scenario for the Danish economy is to a large extent linked to the continued challenges in the southern European economies. If doubts arise as to whether sufficient political action will be taken to address these challenges, this could reduce the sales potential further for Danish exporters. Moreover, it will further undermine confidence in the Danish economy, with a resultant negative impact on domestic private-sector demand. The consequences of such a scenario to the Danish economy are shown in Table 3. This could reduce growth in the economy substantially relative to the forecast.

BASELINE SCENARIO AND ALTERNATIVE SCENARIOS — Table 3

	Baseline scenario	Weaker growth	Faster upswing
2013			
GDP, per cent year-on-year	0.5	0.3	0.8
Net unemployment, 1,000 persons	122	123	120
Balance of payments, per cent of GDP	4.9	4.9	5.0
Government balance, per cent of GDP	-1.5	-1.5	-1.4
Inflation, HICP, per cent year-on-year	0.8	0.8	0.8
2014			
GDP, per cent year-on-year	1.7	0.7	2.4
Net unemployment, 1,000 persons	128	139	118
Balance of payments, per cent of GDP	4.6	4.4	4.7
Government balance, per cent of GDP	-1.9	-2.4	-1.5
Inflation, HICP, per cent year-on-year	1.9	1.8	1.9
2015			
GDP, per cent year-on-year	1.7	1.1	2.0
Net unemployment, 1,000 persons	122	148	103
Balance of payments, per cent of GDP	4.6	4.2	4.7
Government balance, per cent of GDP	-2.8	-3.7	-2.2
Inflation, HICP, per cent year-on-year	1.8	1.7	1.9

Whereas the risk of a more sluggish development in the international economy is primarily linked to developments in southern Europe, economic growth has been more robust in Denmark's neighbouring economies, such as Germany and Sweden, which are the most important markets for Danish exporters, although these countries have also seen some dampening recently. For this area, the economic outlook is deemed to be more favourable than for the euro area overall.

The worsened outlook for the southern euro area member states may therefore have a less severe impact on the Danish economy than assumed in the forecast if countries such as Germany, the UK and Sweden keep pace with the USA and the global economy

CONTINUED Box 4

in general. In that case, demand for exports could develop more favourably than assumed in the forecast. Furthermore, prospects for the housing market now look brighter than in recent quarters. Higher price increases could rapidly have a self-reinforcing effect and support residential construction, which has already been boosted by the extension of the tax deductibility of home repairs and improvements

The consequences of this development with stronger demand in Denmark's major export markets and stronger growth in the housing market have also been included in the Table. This will bring about a faster upswing in the Danish economy as confidence is restored, providing an incentive to increase private consumption and business investment, which in turn will increase GDP growth. In this scenario, the Danish economy will grow strongly in the coming years and unemployment will reach its structural level in 2015.

Foreign trade and balance of payments

The seasonally adjusted value of exports of goods, excluding ships and aircraft, increased by 0.9 per cent in the 1st quarter, while imports increased by 3.3 per cent. These figures reflect a considerable increase in fuel imports and a strong fall in fuel exports. In the 1st quarter of 2013, Denmark was a net importer of energy for the first time since 1998, even if the expenses for bunkering of the large Danish merchant fleet are disregarded. One of the reasons is that the 1st quarter was colder than usual, which increased domestic demand for energy. If energy is excluded, exports rose by 2.8 per cent and imports by 1.4 per cent.

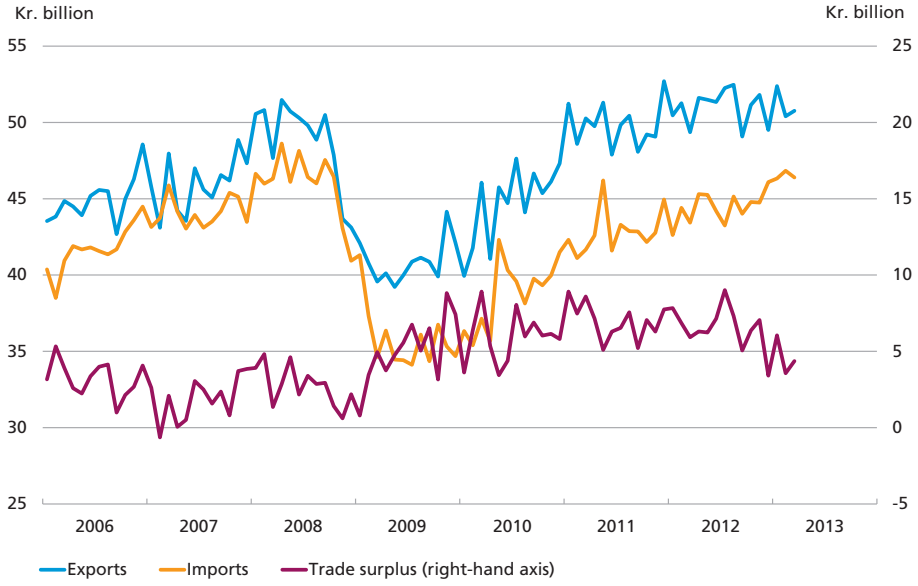
The rise in exports covers large fluctuations between goods types and countries and over time. For example, the 1st quarter saw strong sales of mink furs, especially to China. On the imports side, the business sector increased its imports of intermediate goods marginally, while imports of machinery fell.

The trade surplus was kr. 15 billion in the 1st quarter. This is the lowest quarterly surplus since the 4th quarter of 2008, cf. Chart 18. Trade with non-EU countries, not least the BRIC[1] countries, is increasing and now accounts for approximately one third of the total trading volume, but these countries contributed 95 per cent of the aggregate trade surplus in the 1st quarter. The corresponding figure for 2009 was 67 per cent.

As previously, there was also a small deficit on the current account of the balance of payments in March this year. This is because many Danish firms pay out dividends in March, while the dividends that Danish investors receive from abroad are more evenly spread over the year.

[1] The BRIC countries are Brazil, Russia, India and China.

TRADE IN GOODS Chart 18



Note: Seasonally adjusted data exclusive of ships and aircraft.
Source: Statistics Denmark.

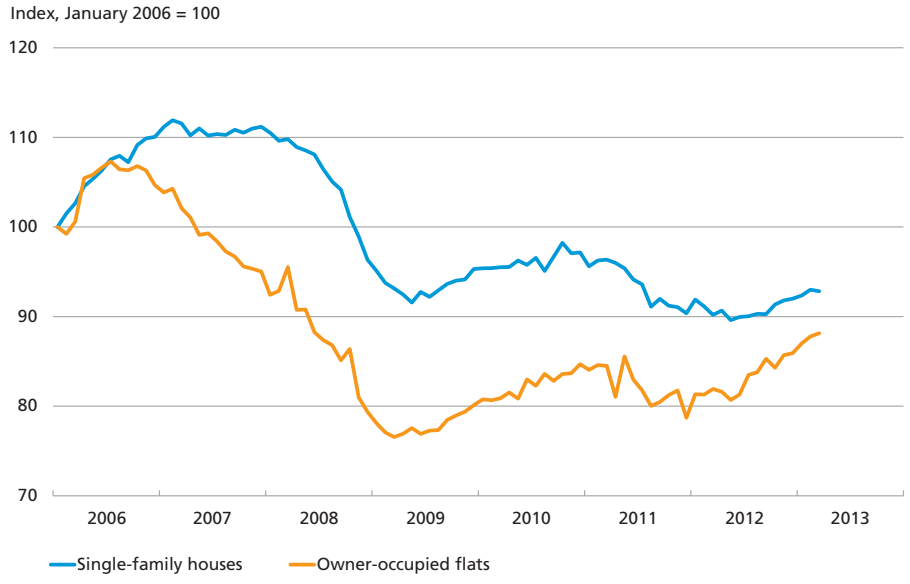
Over the 12-month period up to end-March 2013, the current-account surplus was almost kr. 100 billion, which is approximately kr. 10 billion higher than in the preceding 12-month period. This is mainly attributable to a surplus of kr. 13.5 billion from investment income. A decline in the surplus from trade in goods was more or less offset by a higher surplus from services.

Housing market

In connection with the change of valuation year, Statistics Denmark has revised its statistics of the development in the prices of owner-occupied housing. The new data gives a more positive indication than previously of housing market developments over the last year. Seasonally adjusted house prices have risen by 3.2 per cent since mid-2012, while the prices of owner-occupied flats have risen by 8.4 per cent, cf. Chart 19. Prices have mainly risen in the Copenhagen area and the provincial cities, while the housing market remains weak in many areas outside the cities. In connection with previous changes, the Copenhagen market for owner-occupied flats has been the first to respond.

The recovery is also driven by demographic change, with especially young people moving to the cities. This trend has been particularly pronounced in southern and western Zealand. Prior to the crisis, this region saw a considerable influx of people from the Copenhagen area, which

HOUSE PRICES Chart 19



Note: Seasonally adjusted monthly data.
Source: Statistics Denmark.

pushed up property prices. After the crisis, this migration stopped, and the local housing market was fairly severely affected, with declining property prices and relatively more enforced sales than elsewhere in Denmark.

While housing prices have begun to rise, turnover remains low. Nevertheless, the supply of homes for sale has fallen by 10 per cent since the beginning of 2012, although it remains high. For owner-occupied flats, the supply has declined by one quarter and is back at the 2005 level in Copenhagen. A large supply combined with modest turnover means long time on market. But for Denmark overall, the time on market has been reduced a little recently, both for houses and flats. The forecast predicts that the recovery in the housing market will continue, albeit at a moderate pace, and that house prices will rise by around 2.5 per cent this year and the next two years.

Labour market and capacity

According to the national accounts, employment rose a little in the 3rd quarter of 2012, but then fell back in the following two quarters. This should be viewed against the backdrop of weak output development over the last year. In the forecast, employment is expected to rise moderately until 2015.

In the first months of the year, the cash benefit and student grant systems have been reformed, and a growth plan has been introduced. In addition, a longer phasing-in period has been agreed for the 2010 unemployment benefit reform, which reduces the entitlement period from four to two years. The growth plan is expected to increase structural employment by around 11,000 full-time equivalents in 2020.

Seasonally adjusted gross unemployment fell by 6,500, to 5.9 per cent of the labour force, in the first four months of 2013, after having been virtually unchanged since early 2011. At the same time, the structure of gross unemployment has changed. The number of people receiving unemployment benefits has fallen, the number receiving cash benefits has been more or less unchanged, while the number receiving the newly introduced training allowance has increased. This is because some 12,000 people saw their entitlement period for unemployment benefits expire in the first three months of the year. Of these, 15 per cent are estimated to have utilised the "senior job" scheme or found other employment.

One of the factors behind the decline in unemployment in the first months of the year is the senior job scheme, which entails that all unemployed people aged 55-60 who contribute to the early retirement scheme must be offered a job on ordinary terms by their local council when their entitlement period for unemployment benefits expires. Consequently, they are eliminated from the unemployment statistics. In February, some 1,800 people had senior jobs and a further 200 had been approved for senior jobs. This figure is expected to rise in the coming years.

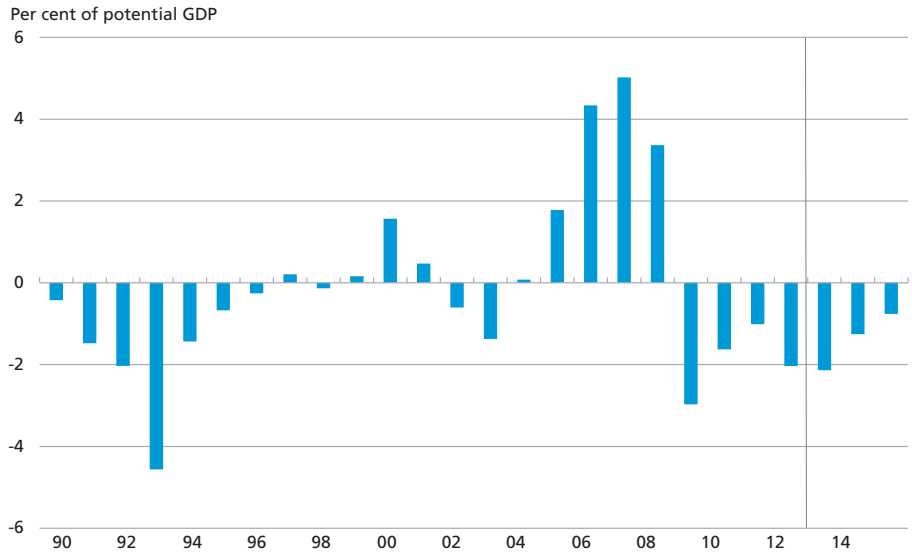
Gross unemployment is estimated to rise in 2013 and 2014. Unemployment is not expected to fall until 2015.

Capacity pressures in the economy are often assessed on the basis of the output gap, cf. Chart 20, which indicates how much actual output deviates from potential output, i.e. the output level which the economy can sustain without inflationary pressures arising. The output gap is assessed to be around -2.5 per cent of GDP in the 1st quarter of 2013.

The output gap reflects that productivity and the labour force are below their structural levels, while actual unemployment is slightly above its structural level. In the projection, the output gap gradually narrows, but it is not expected to have closed completely by end-2015. Initially the narrowing of the output gap is expected to be effected via a lift in productivity towards its structural level.

The number of jobs, particularly in the private sector, advertised on the Internet was well above the 2012 level in the first three months of this year. One of the reasons could be the "emergency job" scheme, under

OUTPUT GAP Chart 20



Note: The output gap is the difference between actual output and the output level which the economy can sustain without inflationary pressures arising. Annual averages.
Source: Own calculations.

which private firms receive a job premium of kr. 25,000 when hiring a long-term unemployed person.

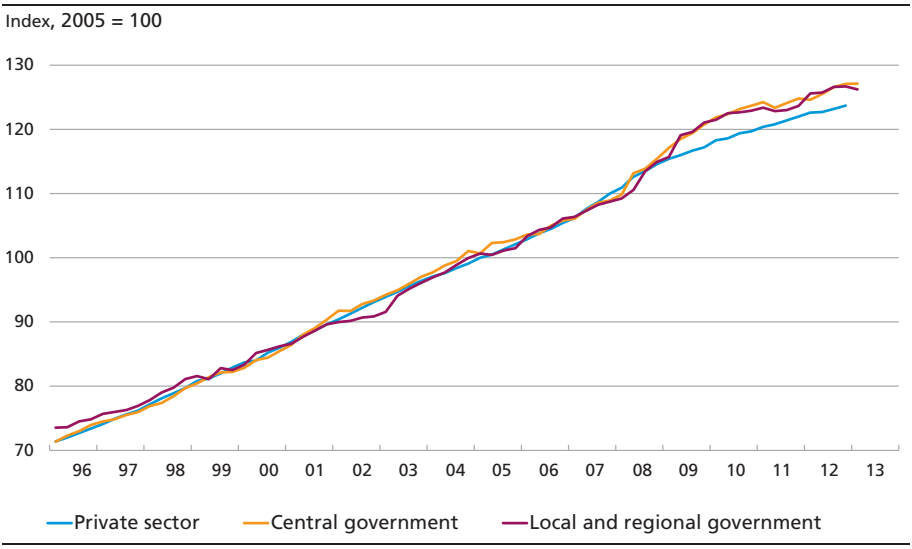
Wages

Danish wage inflation has generally been declining since 2008. In the sectors covered by the Confederation of Danish Employers, DA, wages rose by 1.8 per cent in the 1st quarter of 2013. In the building and construction sector, wages rose by 1.6 per cent and in trade by 2.2 per cent. In the competitive manufacturing sectors, wage inflation was 1.5 per cent in the 1st quarter, compared with 2.1 per cent among foreign competitors. Although the rate of growth has risen a little in the last quarter, Danish wage increases are at the lowest levels seen for a long time.

Today, Danish wage inflation is just as much lower than foreign wage inflation as it was higher in the period of overheating from 2006 to 2008. In other words, part of the loss of competitiveness during the overheating has been made up for. The same pattern is seen for relative unit labour costs measured in the same currency. There has been a clear improvement in recent years.

In the 1st quarter of 2013, wage inflation in local and regional government was 0.4 and 0.3 per cent, respectively, year-on-year. In central gov-

WAGE INFLATION IN THE PRIVATE AND PUBLIC SECTORS Chart 21



Note: Seasonally adjusted. Own seasonal adjustment for central and local and regional government.
Source: Statistics Denmark.

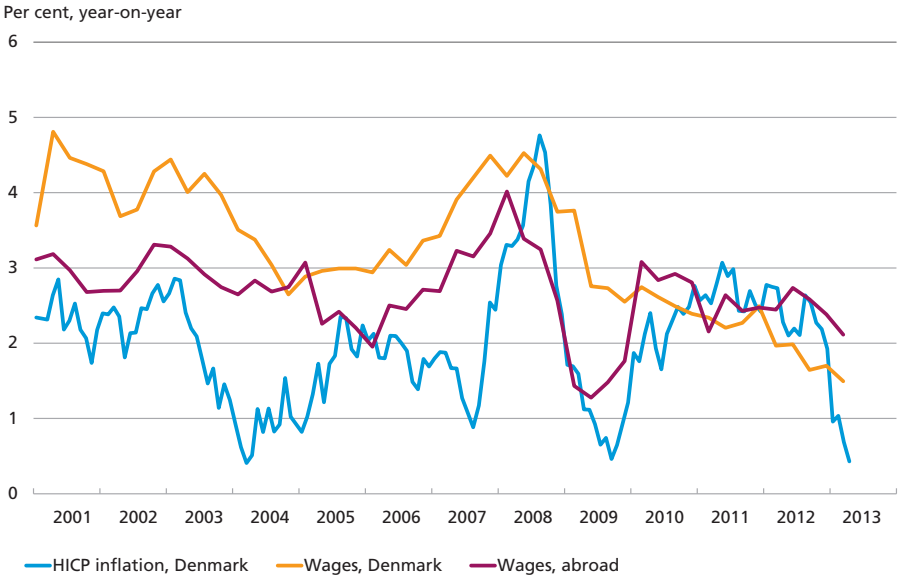
ernment it was 2.1 per cent. The large spread is attributable to the timing of wage increases under collective agreements. Since 2009, wages have risen more in the public than in the private sector, cf. Chart 21. Via the regulatory mechanism, which ensures a lagged parallel wage development in the public and private sectors, this will be balanced in 2013, so that public-sector wage inflation can be expected to be very moderate. This is reflected in the new 2-year collective agreements for the public sector that entered into force in the 2nd quarter.

The forecast operates with subdued wage inflation. Pressures on the labour market remain moderate and the agreements concluded for both the public and private sectors provide for very low wage increases. However, the private sector overall is likely to see higher real wages despite the dampened wage development, cf. Chart 22.

Prices

Inflation, measured as the annual rate of increase in the EU's Harmonised Index of Consumer Prices, HICP, fell from 1.9 per cent in December 2012 to just 0.4 per cent in April 2013, cf. Table 4. This is 0.8 percentage point lower than in the euro area. The large fall in Danish inflation is mainly attributable to lower contributions from taxes on e.g. tobacco and abolishment of the "fat tax" at the turn of the year. In recent months, price inflation has also been reduced by lower energy prices and falling import prices. Domestic market-determined inflation, IMI, is also low due

PRICE AND WAGE INFLATION Chart 22



Note: Wages in manufacturing. "Wages, abroad" is the weighted average of wage inflation in the 25 countries with which the Danish industrial sector mainly competes. The most recent observations are from the 1st quarter for wages and from April 2013 for HICP.
Source: Statistics Denmark, OECD and Confederation of Danish Employers.

to the spare capacity in the economy. In April, IMI was 0.9 per cent, which is slightly lower than in 2012.

Core inflation, excluding food and energy prices, has fallen to a level of around 0.5 per cent since the turn of the year, after having hovered at around 1.5 per cent for some years. In April, the price index for the domestic supply of goods, the wholesale price index – which illustrates

CONSUMER PRICES Table 4

Per cent, year-on-year	Weight[1]	2012	2013	2014	2015	2013					
						Q1	Q2	Q3	Apr.	May	Jun.
HICP		2.4	0.8	1.9	1.8	0.9	0.5	0.6	0.4	0.5	0.6
Index of net retail prices	100	1.9	1.0	1.9	1.7	1.1	1.0	0.9	0.8	0.9	1.0
Exogenous:											
Energy	7.6	3.2	-2.2	-0.1	-1.2	-0.1	-1.6	-3.8	-3.2	-1.6	0.1
Food	13.7	2.5	2.6	2.6	2.3	3.1	2.5	2.5	2.9	2.5	2.3
Adm. prices	4.5	2.3	2.2	2.0	2.4	2.7	2.2	2.0	2.6	1.9	1.9
Rent	22.3	2.6	2.2	2.4	2.1	2.4	2.2	2.1	2.2	2.2	2.1
Excl. exogenous	51.9	1.1	0.5	1.8	1.6	0.2	0.2	0.5	0.3	0.2	0.2
Imports	14.7	0.8	-0.4	2.0	2.2	0.2	-1.2	-0.3	-1.0	-1.4	-1.1
IMI	37.2	1.2	0.8	1.7	1.4	0.2	0.7	0.8	0.9	0.7	0.7

Note: The most recent actual figures are from April 2013.
[1] Weight in the index of net retail prices, per cent.

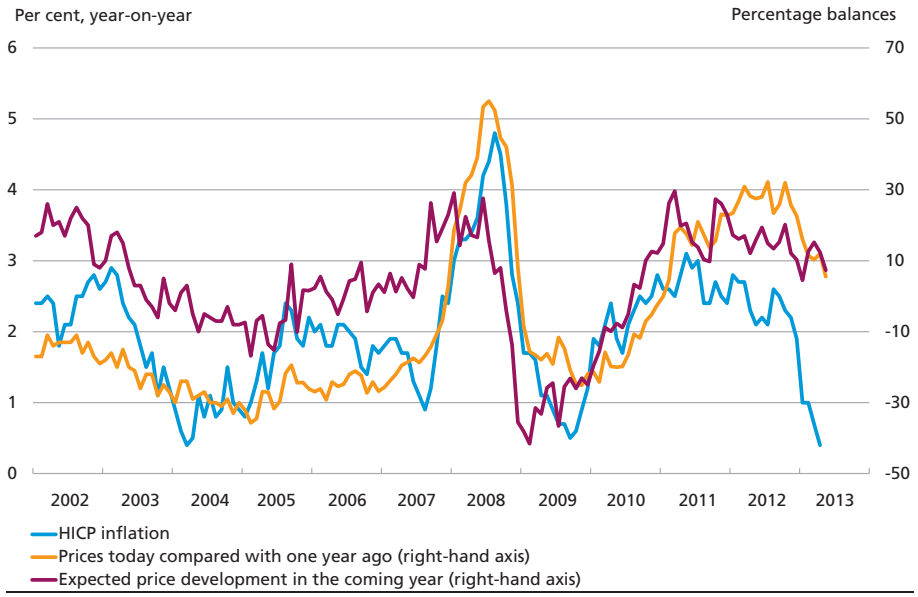
price developments in the first link of the sales chain and is stated net of taxes – was 0.8 per cent below the level one year earlier. Especially the prices of energy and other commodities are keeping wholesale prices down.

The Danish consumer price index, CPI, rose to 0.8 per cent year-on-year in April. Hence, the spread to HICP inflation was larger than usual. The main reason is that housing does not carry the same weight in the two indices. Expenses for owner-occupied housing are included in the CPI index, but not in the HICP index. In April, the housing item in the CPI index rose by 2.1 per cent.

The steep fall in HICP inflation has not led to any marked change in consumer expectations of price developments in the coming year. Perceived inflation has declined slightly, but remains well above the level in the autumn of 2009, which is the last time HICP inflation was this low, cf. Chart 23.

Inflationary pressures in the economy are moderate at present. This applies to both domestic and external pressures. The subdued domestic price pressures are consistent with the spare capacity in the Danish economy. Against that background, the HICP is estimated to rise by 0.8 per cent this year and 1.9 per cent next year.

INFLATION AND INFLATION EXPECTATIONS Chart 23



Note: Perceived inflation and inflation expectations among consumers are based on the survey of consumer expectations.
Source: Statistics Denmark.

Public finances

Real public consumption is expected to grow by 0.6 per cent this year and 0.9 per cent next year. In recent years, local governments have managed to stay within their budgets, and from 2014 onwards, when the Budget Act enters into force, even stricter sanctions will be imposed in connection with budget overruns. Public investment is expected to decline in 2013, but in a longer-term perspective the level of public investment will be high both this year and in the coming years.

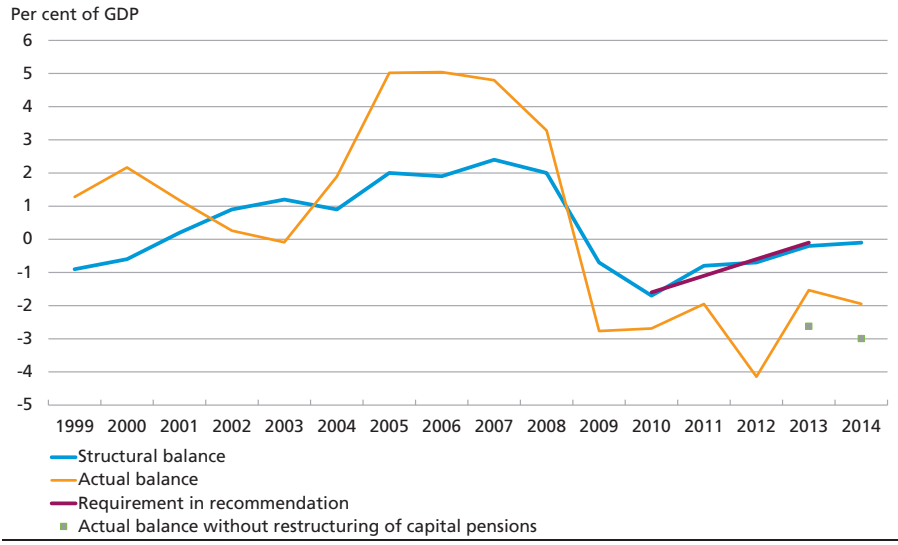
At 4.3 per cent of GDP, the 2012 budget deficit was extraordinarily large owing to disbursements of early retirement contributions. This year's deficit is expected to be approximately kr. 27 billion, corresponding to 1.5 per cent of GDP, rising to 1.9 per cent of GDP next year. Both in 2013 and 2014, the government budget balance will be affected by the option to bring forward taxation of capital pensions. The forecast applies the government's estimate, i.e. revenue of kr. 20 billion in each of these two years, but it is very uncertain. On the other hand, revenue from pension-yield tax is expected to be lower than last year.

These estimates mean that Denmark will comply with the EU recommendation to reduce the government budget deficit to below 3 per cent in 2013. However, it remains uncertain whether tax revenue from restructuring of existing capital pensions can be included in the calculation of the deficit under the excessive deficit procedure. If this revenue is disregarded, the budget deficit will be close to 3 per cent of GDP in both 2013 and 2014, cf. Chart 24. The government estimates that the structural balance will be more or less in equilibrium this year. Consequently, the requirement of average annual structural improvement of 0.5 per cent of GDP from 2011 to 2013 also seems to have been met.

Compliance with the recommendation is necessary, but not sufficient, for the excessive deficit procedure to be abrogated for Denmark. In its spring forecast 2014, the European Commission must also assess that Denmark will not exceed the reference limit of 3 per cent of GDP in 2014 and 2015. Danmarks Nationalbank estimates the deficit at 2.8 per cent of GDP in 2015. So in all three years the deficit will be just below 3 per cent of GDP, but the margin is small, given that the estimate is subject to uncertainty.

In May, an agreement was concluded on slower phasing-in of the unemployment benefit reform, which reduces the maximum entitlement period from four to two years. This will mainly be financed via lower public consumption and from reserves that have in previous years been saved for later in the year.

GOVERNMENT BUDGET BALANCES Chart 24



Note: "Structural balance" is the government's estimate, "Actual balance" with and without restructuring of capital pensions are Danmarks Nationalbank's estimates. The revenue from restructuring of capital pensions has been estimated at kr. 20 billion in both 2013 and 2014.
Source: Ministry of Finance and own calculations.

Economic policy

The forecast operates with a gradual upswing, with broad-based growth in demand. The Danish output and unemployment gaps are not large and are expected to narrow in the coming years, so that GDP will once again be close to its potential level. At the same time, the consumption ratio is close to, and the investment ratio is approaching, the long-term average. Moreover, due to the historically low interest rates financial conditions are strongly expansionary. Hence, the economic outlook does not warrant fiscal easing, even though it has taken some time for private-sector demand to normalise.

The expected revenue in 2013 and 2014 from early taxation of capital pensions is temporary and will result in a shortfall at a later point in time. Consequently, it should not be used for current consumption, increased transfer benefits or tax cuts, but to reduce government debt. In the 2013 convergence programme, a small part of the revenue from bringing forward tax payments is used to fund growth plan initiatives. If the extraordinary revenue is disregarded, the government budget balance is in fact only just within the limits of the Budget Act and the Fiscal Compact. So there is neither a need for nor scope for expansionary fiscal policy.

In recent years, a number of reforms have been introduced with a view to increasing the supply of labour so as to ensure sustainable public

finances. Presumably, it is not possible to come much further down that path. Future reforms should focus on increasing productivity growth, which is another major challenge that Denmark must address. Productivity growth in both the private and public sectors is a precondition if Denmark is to boost its welfare at the same rate as comparable countries while also being able to afford the desired lift in public service. The Danish Productivity Commission has just issued its first catalogue of proposals for increasing productivity; this catalogue is a good point of departure of future reforms.

There is a close link between the economy and lending by banks and mortgage banks. In the years leading up to the financial crisis, lending in Denmark grew at a faster pace than in previous booms. Credit standards were slackened. As a result, households and firms accumulated very large debts. The financial crisis shook the economy, and both households and firms profoundly changed their views on having large debts. Now, five years after the onset of the crisis, a consolidation process is still underway, with households and – especially – firms accumulating capital and reducing debt levels. The crisis may have reduced corporate confidence in the banking sector's ability to always meet the demand for credit and liquidity in an economic downturn. Experience shows that strong overheating of the economy may be followed by a long period of consolidation, during which demand for credit is reduced.

It has become more difficult for firms to obtain bank loans during the crisis, since banks have tightened their credit standards from a far too favourable pre-crisis level. The banks have also increased their interest-rate margins. Both responses are normal in a recession as increased losses on lending must be covered. However, there are no convincing indications that the banks' lending capacity has generally been an impediment to lending growth, cf. the article "Credit and Business Cycles" in this Monetary Review. The banks' need to consolidate is not the reason why firms and households wish to consolidate. Overall, only a limited share of firms have stated financial constraints as impediments to production in recent years, but the picture varies between industries. Total lending by banks has declined but has to a large extent been replaced by mortgage lending. Although activity in Denmark is now lower than before the crisis, the total lending volume has remained high.

The financial crisis revealed a need for higher equity of a better quality in credit institutions both in Denmark and internationally. Consequently, regulators worldwide have imposed higher capital requirements on individual institutions, not least the systemically important financial institutions, SIFIs. High equity enables a credit institution to suffer substantial losses without becoming distressed. This reduces the

risk of financial crises and their serious economic consequences. So the increased equity requirements are well-founded and will not entail any substantial costs for the financial institutions or for output and employment in society, cf. Danmarks Nationalbank, *Financial stability*, 2013. Since 2008, the banks have focused on strengthening their capital base. Most banks today hold sufficient equity for compliance with the forthcoming EU requirements of Common Equity Tier 1 capital.

APPENDIX 1: ASSUMPTIONS IN THE FORECAST FOR THE DANISH ECONOMY

The forecast has been produced using the macroeconometric model MONA[1] and is based on available economic statistics, including Statistics Denmark's preliminary quarterly national accounts for the 1st quarter of 2013. The projection is based on a number of assumptions concerning the international economy, financial conditions and fiscal policy.

The international economy

The international organisations expect weak growth in global activity this year and slightly stronger growth next year. Euro area growth is expected to be negative this year. However, growth among Denmark's most important trading partners, including Germany and Sweden, is expected to be positive this year. Against that background, the market for Danish exports is assumed to grow by a modest 2.6 per cent this year, after which the rate of growth will increase to just over 5 per cent in 2014 and around 6 per cent in 2015, cf. Table 5.

Foreign prices are expected to rise at a modest pace this year and until 2015, by which time the rate of increase is estimated at 1.0 per cent. Export market prices will follow the same trend. Wage inflation abroad is estimated to rise only slightly throughout the projection period due to weak labour markets in most countries.

Interest rates, exchange rates and oil prices

Developments in short-term and long-term interest rates in the forecast are based on the expectations of future developments that can be derived from the yield curves in the financial markets. Short-term Danish interest rates are expected to mirror money-market interest rates in the euro area. The 3-month money-market interest rate, measured by the CITA swap rate, was just under 0 per cent at the beginning of June 2013 and is expected to fall a little this year, followed by a slight increase towards 2015.

The average bond yield is defined as an average of the yields to maturity on outstanding government and mortgage bonds. It was 1.4 per cent at the beginning of June and is expected to rise to 2.4 per cent by the end of 2015.

The effective krone rate has strengthened a little in recent months. In the projection, the dollar rate and the effective krone rate are assumed to remain constant at the level from early June.

[1] The model is described in Danmarks Nationalbank, *MONA – a quarterly model of the Danish economy*, 2003.

At the time of forecasting, the oil price was 104 dollars per barrel. In the projection, the oil price is assumed to develop in line with futures prices, falling to approximately 93 dollars per barrel by the end of 2015.

Fiscal assumptions

The fiscal assumptions in the forecast are based on the planned fiscal policy, including the Finance Act for 2013, local and regional government budgets for 2013 and the agreement between Local Government Denmark and the central government, which allows local governments to reallocate up to kr. 2 billion from services to construction projects. The agreements in relation to the government's growth plan, Vækstplan DK, have also been incorporated into the forecast.

The option to pay tax on existing capital pension schemes at a reduced rate is assumed to yield kr. 20 billion in early revenue in both 2013 and 2014. This forecast is based on that assumption.

Real public consumption is assumed to rise by 0.6 per cent this year, cf. Table 5. Consumption growth is estimated at 0.9 per cent and 0.7 per cent in 2014 and 2015, respectively. Public investment is expected to fall by 6.6 per cent this year, followed by moderate increases.

OVERVIEW OF FORECAST ASSUMPTIONS — Table 5

	2012	2013	2014	2015
International economy:				
Export market growth, per cent year-on-year	1.8	2.6	5.2	6.1
Export market price[1], per cent year-on-year	0.9	3.2	1.9	0.9
Foreign price[2], per cent year-on-year	1.1	3.3	2.0	1.0
Foreign hourly wages, per cent year-on-year	2.6	2.1	2.3	2.6
Financial conditions, etc.:				
3-month money-market interest rate, per cent p.a.	0.1	-0.1	-0.1	0.1
Average bond yield, per cent p.a.	1.7	1.5	1.7	2.2
Effective krone rate, 1980 = 100	100.6	101.9	102.0	102.0
Dollar exchange rate, DKK per USD	5.8	5.7	5.8	5.8
Oil price, Brent, USD per barrel	111.6	103.4	97.3	94.2
Fiscal policy:				
Public consumption, per cent year-on-year	0.2	0.6	0.9	0.7
Public investment, per cent year-on-year	7.4	-6.6	1.4	0.9
Public-sector employment, 1,000 persons	827	825	833	837

[1] Weighted import price for all countries to which Denmark exports.
[2] Weighted export price for all countries from which Denmark imports.

APPENDIX 2: REVISIONS IN RELATION TO THE PREVIOUS FORECAST

Compared with the March forecast, estimated growth in GDP has been adjusted downwards by 0.3 percentage point for this year, but remains unchanged for 2014 and 2015, cf. Table 6, which shows a breakdown of the revisions to GDP and consumer prices by key background factors.

The lower growth estimate for this year is mainly attributable to a weaker international economic situation in the primary export markets. Whereas the most recent revision of the 2012 national accounts as such indicates 0.1 percentage point higher growth in 2013 relative to the March forecast, domestic demand has generally subsided due to a slower development in, *inter alia*, private consumption than predicted in March; overall, this results in a contribution of -0.1 percentage point to the *other factors* item. More sluggish foreign demand for Danish exports will also dampen GDP growth in 2014. The high growth contribution under the *other factors* item in 2014 reflects factors such as a slightly faster pass-through from the weaker export market in the forecast.

The increase in consumer prices, HICP, has been adjusted downwards by 0.5 percentage point to 0.8 per cent this year. Lower oil prices have reduced fuel and other energy prices in the first months of the year, but the prices of other imported goods have also fallen more than assumed in the March forecast. Price developments in 2014-15 are expected to be in line with the March forecast.

REVISIONS IN RELATION TO THE PREVIOUS FORECAST — Table 6

	GDP			Consumer prices, HICP		
Per cent, year-on-year	2013	2014	2015	2013	2014	2015
Forecast, March 2013	0.8	1.7	1.7	1.3	1.9	1.8
Contribution to revised estimate from:						
Export market growth	-0.3	-0.4	0.2	0.0	0.0	-0.1
Interest rates	0.0	0.0	0.0	0.0	0.0	0.0
Exchange rates	0.0	-0.1	0.0	0.0	0.0	0.0
Oil prices	0.0	0.1	0.0	-0.1	0.0	0.0
Other factors	-0.1	0.5	-0.1	-0.4	0.0	0.1
This forecast	0.5	1.7	1.7	0.8	1.9	1.8

Note: The transition from the previous to this forecast may not add up due to rounding. "Other factors" includes data revisions.

Credit and Business Cycles

Kim Abildgren, Economics, and Andreas Kuchler, Statistics

INTRODUCTION AND SUMMARY

There is a close relationship between business cycles and bank lending. Credit demand is weak during downturns due to weak development in consumption and investment. The supply of bank credit will also be lower during downturns, since it is harder for borrowers to service their debt obligations when the economic situation is unfavourable, unemployment is rising and firms are increasingly threatened by default. As a result, banks typically increase their interest margins and tighten their credit standards in a downturn to reduce the risk of increased losses on loans.

Part 2 of this Monetary Review presents an analysis of the interaction between business cycles and banks, cf. Abildgren and Kuchler (2013). Furthermore, it considers the relationship between lending by banks and mortgage banks over business cycles. This overview article contains a non-technical summary of the most important findings and conclusions of the analysis.

The analysis shows that it has become more difficult for firms to obtain bank loans during the crisis, since banks have tightened their credit standards from a lenient pre-crisis level. Firms with sound finances have found it easier to obtain loans than firms with poor economic performance. Overall, only a limited share of firms have stated financial constraints as impediments to production in recent years, but the picture varies among industries. In the industrial sector, the number of firms stating financial constraints as impediments to production has been very low during the recent crisis. As a result, unemployment remains relatively low in Denmark. In the domestically oriented sectors – construction and service – a higher share of firms state financial constraints as impediments to production during the crisis. Still, a considerably larger share of firms in the domestically oriented sectors state sluggish demand as an impediment to production.

Experience shows that banks generally tend to tighten their credit conditions and reduce their lending exposure during economic downturns, but there is no doubt that the recent financial crisis has given rise

to a considerable additional loss of output in the Danish economy. In addition to the negative impact on the real economy caused by lending restraint in a crisis-stricken banking sector, the financial crisis also adversely affected the economy in more general terms. The growing perceived uncertainty about the future economy and the economic outlook for households and the corporate sector brought about by the financial crisis may have led to lower consumption and investment and thus to lower output and demand for credit. Furthermore, corporate confidence in the banking sector's willingness and ability to always meet the demand for credit and liquidity in an economic downturn may have weakened. This may have amplified consolidation and debt reduction by non-financial corporations and dampened credit demand, investment activity and employment. Non-financial corporations show substantial savings surpluses, and the financial savings surpluses of Danish firms and households relative to the gross domestic product, GDP, have reached the highest levels since the start of the statistical series in the early 1970s. The savings surpluses are thus higher than during the deep recessions in the early 1980s and 1990s.

There are no indications that the banks' lending capacity has generally been an impediment to the development in lending. Moreover, the rise in mortgage lending indicates that the mortgage-credit sector was able to cover part of the corporate and household credit needs. Combined with considerable government intervention during the financial crisis, this contributed to the fact that, during the recent crisis, total lending by banks and mortgage banks did not decline substantially relative to GDP. The total lending volume remains high in a long-term perspective.

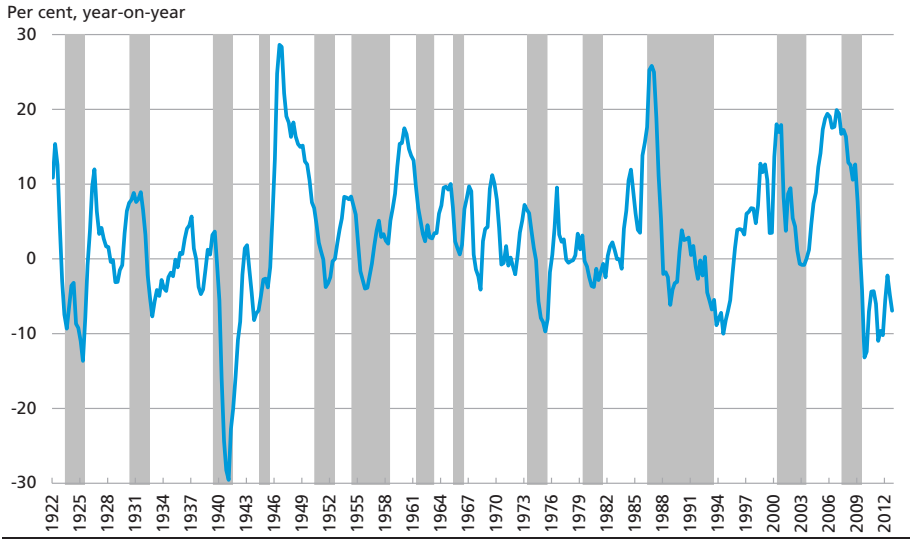
BUSINESS CYCLES, BANKS AND THE SUPPLY OF CREDIT

Banks play a key role in the economy as suppliers of credit. Funds from households and firms with savings surpluses are deposited and relent to households and firms with consumption and investment needs.

Due to the close relations between the banking sector and the real economy, bank lending has a very large cyclical element. Chart 1 shows real growth in bank lending since the early 1920s. The grey markings indicate periods of economic downturn.

As seen, there is a clear tendency for decline or low growth in bank lending during periods of economic downturn. This reflects both credit demand and supply. Credit demand is normally weak during downturns due to weak development in consumption and investment in real capital. Likewise, credit supply will usually be smaller during downturns. Experience shows that it is harder for borrowers to service their debt ob-

REAL GROWTH IN DANISH BANK LENDING 1922-2012 Chart 1



Note: Quarterly observations. The consumer price index is the deflator. The grey markings indicate periods of economic downturn, cf. Abildgren et al. (2011).
Source: Abildgren (2012), Danmarks Nationalbank and Statistics Denmark.

ligations when the economic situation is unfavourable, unemployment is rising and firms are increasingly threatened by default. As a result, banks typically increase their interest margins and tighten their credit standards (e.g. by enhancing collateral requirements) in a downturn to reduce the risk of losses on loans.

Experience also shows that there is a general tendency for banks to tighten their credit conditions and reduce their lending exposure during an economic downturn – and conversely to ease their credit conditions and increase their lending exposure during a boom. This contributes to strengthening the cyclical fluctuations, i.e. procyclicality. The procyclicality may even become particularly strong if credit standards are excessively eased during a lending boom in an overheated economy as seems to have been the case in Denmark prior to the financial crisis, according to indicators. This gave rise to additional tightening of credit standards after the crisis, and the tightening thus occurred at a fairly inconvenient time.

In the wake of the financial crisis, measures have been brought into focus that may reduce the procyclicality of the banking sector in future, including by introducing countercyclical capital buffers. Such buffers are expected to be implemented in Europe with the coming Capital Requirements Directive. The purpose of countercyclical capital buffers is that they should be built up in times of excessive credit growth and reduced in bad times in order to avoid any future need for the government to

provide general subsidy schemes and capital injections to protect financial stability. The Committee on Systemically Important Financial Institutions in Denmark has also made recommendations on regulation of systemically important financial institutions, SIFIs. Among other things, the Committee has recommended a "crisis management buffer" comprising debt instruments of 5 per cent of risk-weighted assets that must be convertible into Tier 1 capital or written down if a SIFI is hit by crisis. Finally, the Systemic Risk Council has been set up with a view to preventing and reducing systemic financial risks.

LENDING SURVEYS AND CREDIT STANDARDS

Danmarks Nationalbank introduced a quarterly lending survey in early 2009. In the survey, the credit managers of a number of banks are asked to assess changes in credit supply and demand in the last quarter.

On the basis of the credit managers' responses, Abildgren and Kuchler (2013) break down the banks' lending growth into supply and demand factors. It is clear that weak credit demand had a highly negative effect on lending growth in the last couple of years. Tighter credit standards primarily played a role immediately after the collapse of Lehman Brothers and during the debt crisis in Southern Europe in late 2011 and early 2012.

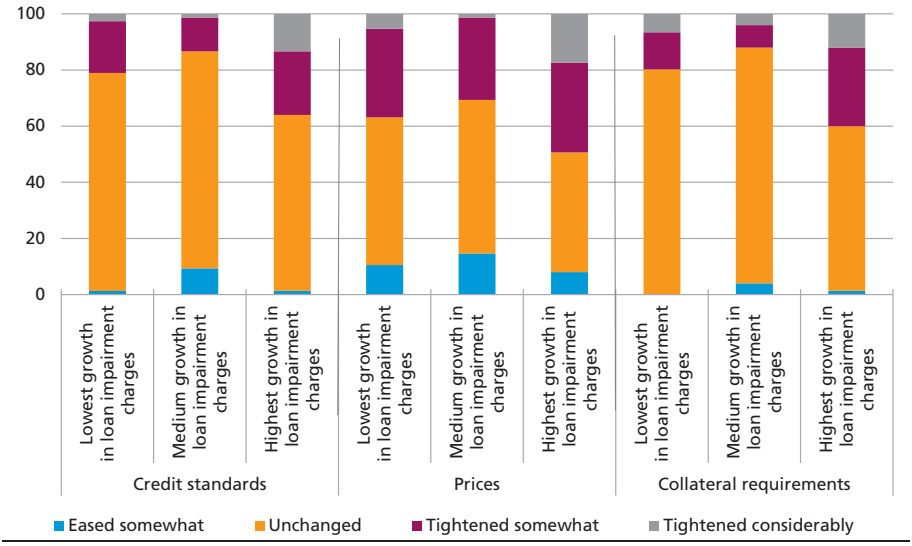
Abildgren and Kuchler (2013) also present a more detailed analysis of the individual banks' responses to Danmarks Nationalbank's lending survey. The analysis is based on the responses of around 15 banks to the survey since its introduction in early 2009.

The relationship between changes in the banks' credit standards vis-à-vis corporate customers and increases in the banks' loan impairment charge ratios is illustrated in Chart 2. The bar "highest growth in loan impairment charges" contains that third of the observations in which the banks saw the highest quarterly growth in loan impairment charges. The bar "lowest growth in loan impairment charges" contains the observations with the lowest growth in loan impairment charges, and the bar "medium growth in loan impairment charges" contains the remaining third. As shown by the chart, there is a certain relationship between changes in credit standards and loan impairment charges. The banks with the highest growth in the loan impairment charge ratio over the previous quarter had a more pronounced tendency to tighten their credit standards vis-à-vis the corporate sector.

All other things being equal, economic slowdown means that bank customers find it harder to service their debt obligations, which increases the banks' loan impairment charges and may cause the banks to

CHANGES IN BANKS' CREDIT STANDARDS FOR LENDING TO CORPORATE CUSTOMERS: BANKS GROUPED BY QUARTERLY GROWTH IN LOAN IMPAIRMENT CHARGE RATIO

Chart 2



Note: The chart is based on all banks' responses to Danmarks Nationalbank's lending survey over 15 quarters. The breakdown is based on quarterly growth in loan impairment charges, ensuring that each group contains the same number of observations. For example, "highest growth in loan impairment charges" refers to that third of the observations in which banks saw the highest growth in loan impairment charges.

Source: Kuchler (2012).

tighten their credit standards. Abildgren and Kuchler (2013) set up a model of the development in the banks' credit standards, estimating the impact of various bank-specific and cyclical factors on the probability of credit standards being tightened.

The explanatory variables of the model include both individual bank characteristics and a number of economic indicators. The bank-specific variables included for each of the banks participating in the lending survey concern the following: The share of lending for which interest-rate accrual has been suspended, excess capital adequacy, the bank's money-market borrowing rate, lending growth and volume as well as the breakdown of pre-crisis lending by sector and industry. A number of macroeconomic indicators are also included (GDP, money-market interest rate and the number of defaults and enforced sales).

The results of the model estimation show that developments in the banks' credit standards in recent years have primarily been affected by cyclical developments and thus developments in the customers' credit standing. The individual bank's own "market-related credit standing" – measured by its money-market borrowing rate less the average money-market interest rate – has also had some impact. It reflects the individual bank's funding conditions compared with conditions for the banking

sector as a whole. Since the analysis controls for the individual bank's solvency situation and general economic trends, the market-related credit standing reflects the market assessment of the quality of the individual bank's loan portfolio compared with the banking sector as a whole and the specific cyclical developments within the bank's customer segments. Hence, the market-related credit standing primarily reflects the quality of the loan portfolio.

Contrary to expectations, other bank-specific conditions such as the banks' solvency situation have not had any substantial effect when taking business cycles into account. This should no doubt be viewed in the context of comprehensive government intervention during the financial crisis which, e.g. via Bank Rescue Package 2, enabled government capital injections into banks.

FIRMS' PERCEIVED ACCESS TO BANK LOANS BEFORE AND DURING THE CRISIS

Danmarks Nationalbank's lending surveys give an impression of the conditions for household and corporate access to bank credit as seen from the banks' point of view. Statistics Denmark regularly conducts questionnaire surveys on firms' perceived conditions for access to bank credit, cf. Chart 3.

On average, only a limited share of firms, around 10 per cent, have stated financial constraints as impediments to production in recent years according to Statistics Denmark's confidence indicators, but the picture varies among industries.

In the industrial sector, the number of firms stating financial constraints as impediments to production according to the confidence indicators has been very low during the recent crisis. As a result, unemployment remains relatively low in Denmark compared with other countries. The confidence indicator for industry covers firms with minimum 20 employees, such firms accounting for 85 per cent of total employment in the industrial sector.

In the domestically oriented sectors – construction and service – a higher share of firms have stated financial constraints as impediments to production during the crisis. Still, considerably larger shares of firms in the domestically oriented sectors state sluggish demand as an impediment to production.

For construction and service, the confidence indicators also cover small firms with as few as 5-10 employees. If small firms have generally tended, to a higher degree than large firms, to be subject to financial constraints during the crisis, this may affect the structural development in

SHARE OF FIRMS WITH IMPEDIMENTS TO PRODUCTION DUE TO FINANCIAL CONSTRAINTS ACCORDING TO STATISTICS DENMARK'S CONFIDENCE INDICATORS

Chart 3

(a): Weighting of the indicators for the industrial, building and construction and service sectors based on employment in the respective sectors.

Note: The questionnaires were redesigned in the 1st and 2nd quarters of 2013, contributing to a fall in the "no constraints" responses in favour of responses stating constraints.

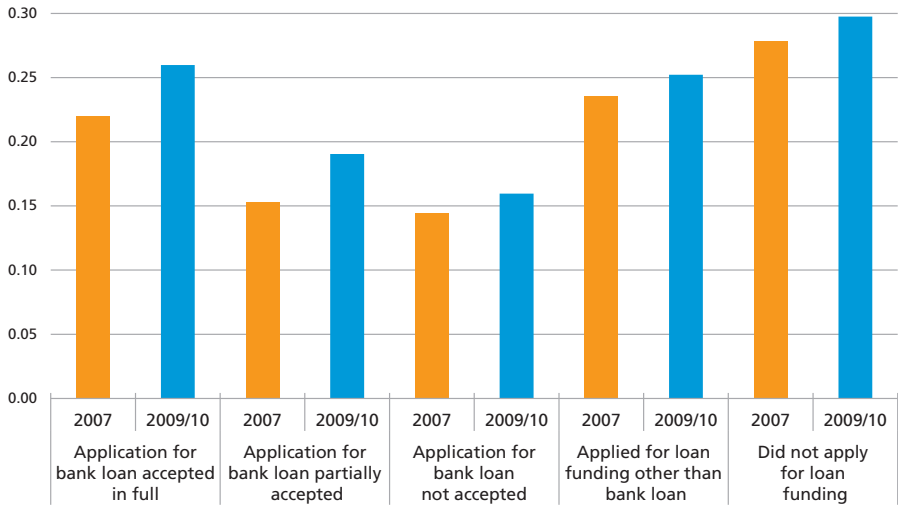
Source: Calculated on the basis of Statistics Denmark's confidence indicators.

in the economy, but the effect cannot be unambiguously determined as positive or negative. A number of studies find that the innovative return on research and development, in terms of e.g. the number of patents per Danish krone spent, is higher in small firms than in large ones, cf. Andersen and Spange (2012). In spite of this, most studies find that large firms invest relatively more in research and development than small ones.

However, this does not necessarily mean that individual firms or corporate segments may not have found it more difficult to obtain bank loans during the recent financial crisis. Abildgren and Kuchler (2013) present a detailed analysis of the outcome of firms' applications for bank loans in 2007 and 2009/10 and the creditworthiness of the firms applying for loans. The analysis is based on a questionnaire survey conducted by Statistics Denmark that includes responses from around 2,000 small and medium-sized enterprises with 5-249 employees.

Chart 4 illustrates the relationship between the outcome of firms' applications for bank loans in 2007 and 2009/10 and firms' solvency ratios in the year preceding the loan application. As shown by the chart, the median of the firms' solvency ratios in 2008 was considerably lower in the groups whose applications for bank loans were fully or partially re-

FIRMS' APPLICATIONS FOR BANK LOANS IN 2007 AND 2009/10
- MEDIAN OF SOLVENCY RATIO YEAR BEFORE APPLICATION Chart 4



Note: Bank loans do not include access to overdrafts. Other loan funding includes loans from mortgage banks and loan funding from owners/directors. Firms that have not applied for loan funding use equity funding or other forms of funding, e.g. overdrafts, trade credits, leasing, factoring, etc.
Source: Abildgren, Drejer and Kuchler (2012).

jected in 2009/10, than in the group of firms whose applications for bank loans were fully accepted. It was also lower than in the groups of firms which did not apply for loan funding, or firms which applied for loan funding other than bank loans. The fact that the solvency ratio for the median firm in all groups of firms in 2009/10 was higher than in 2007 should be viewed in the light of the general tendency towards consolidation among non-financial corporations during the crisis.

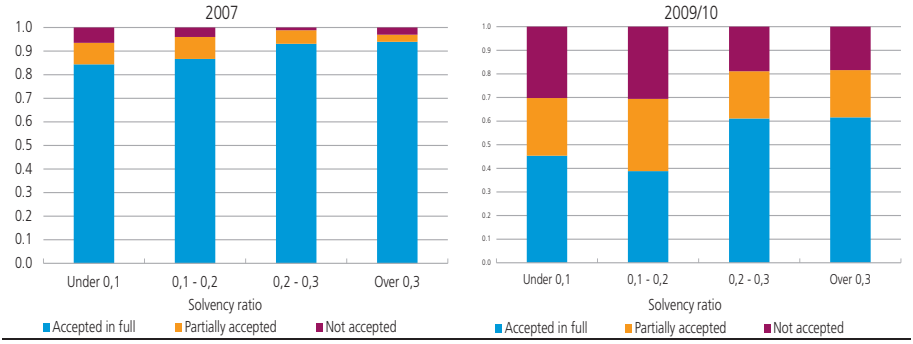
Chart 5 examines the outcome of the firms' applications for bank loans broken down by their solvency ratios. The chart clearly shows that the most solvent firms in 2009/10 had higher acceptance rates than firms with low solvency ratios.

The rejection rates were considerably higher in 2009/10 than in 2007, reflecting the business cycle. In 2007, firms found themselves at the end of a boom with the expectation of a "soft landing", while 2009/10 represented the bottom of the deepest recession since World War II. The rise in rejection rates from 2007 to 2009/10 is consistent with the fact that, according to Danmarks Nationalbank's lending survey, banks tightened their credit standards during the financial crisis. It is worth noting, however, that the loan applications of almost all firms were fully accepted prior to the financial crisis, regardless of the firms' solvency ratios.

The above analysis points to a relationship between the firms' solvency ratios and the outcome of the banks' assessment of loan applications in

OUTCOME OF FIRMS' APPLICATIONS FOR BANK LOANS - BROKEN DOWN BY SOLVENCY RATIO

Chart 5



Note: Bank loans do not include access to overdrafts.
Source: Abildgren, Drejer and Kuchler (2012).

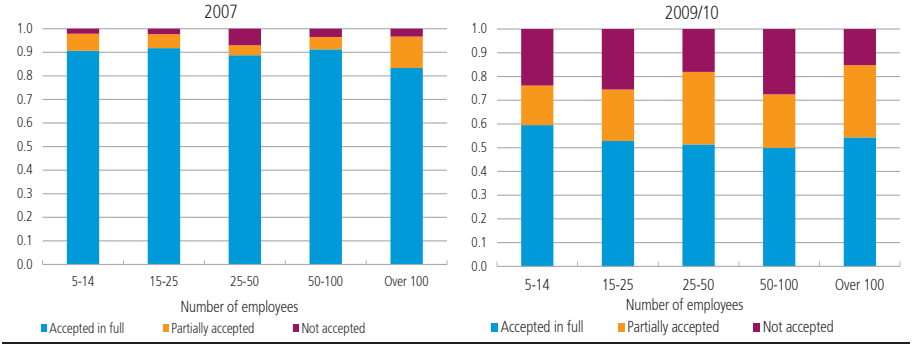
2009/10 during the financial crisis. A similar impression is obtained when considering a number of other key financial ratios for the firms applying for loans. The groups of firms whose applications for bank loans were fully or partially rejected in 2009/10 were thus characterised by lower profit ratios, higher short-term debt ratios, higher interest costs and lower liquidity ratios than other firms.

The above analysis indicates that sound firms found it easier to obtain bank loans during the crisis than firms with tight finances. Other things being equal, this reflects appropriate allocation of loan capital in an overall social perspective. It may have long-term negative implications for the productivity and adaptability of the economy if unprofitable firms are kept alive on non-market terms through government subsidies or the like. The fact that a deep financial crisis decimated the least productive firms in the economy and released resources for the more productive ones is often cited as one of the reasons for strong productivity growth in Finland in the early 1990s, cf. Andersen and Spange (2012).

No systematic relationship between firm size and the outcome of an application for a bank loan is found in 2007 or 2009/10, cf. Chart 6. It is worth noting, however, that according to Statistics Denmark's survey, the smallest firms with 5-14 employees experienced the highest acceptance rates during the financial crisis in 2009/10. Although it should be kept in mind that questionnaire surveys are always subject to some uncertainty, at least there are no indications that small firms were subjected to particularly high rejection rates in connection with bank loan applications during the financial crisis. Presumably, this reflects that a relatively larger share of the assets of firms with 5-14 employees are in buildings and plots that are easy to pledge as collateral. Moreover, the

OUTCOME OF FIRMS' APPLICATIONS FOR BANK LOANS - BROKEN DOWN BY NUMBER OF EMPLOYEES

Chart 6



Note: Bank loans do not include access to overdrafts.
Source: Abildgren, Drejer and Kuchler (2012).

small firms applying for bank loans have higher profit ratios than larger firms applying for bank loans.

Presumably, less creditworthy firms may have found it more difficult to obtain bank loans due to the considerable tightening of credit standards during the recent crisis, which may also have reduced their demand for credit. The analysis takes a closer look at the firms that refrained from applying for loan funding during the financial crisis, because they expected their application to be rejected or high interest rates. The analysis shows that firms refraining from applying for loans in 2009/10 for fear of rejection or high borrowing rates were characterised by considerably poorer key financial ratios than the firms applying for loan funding.

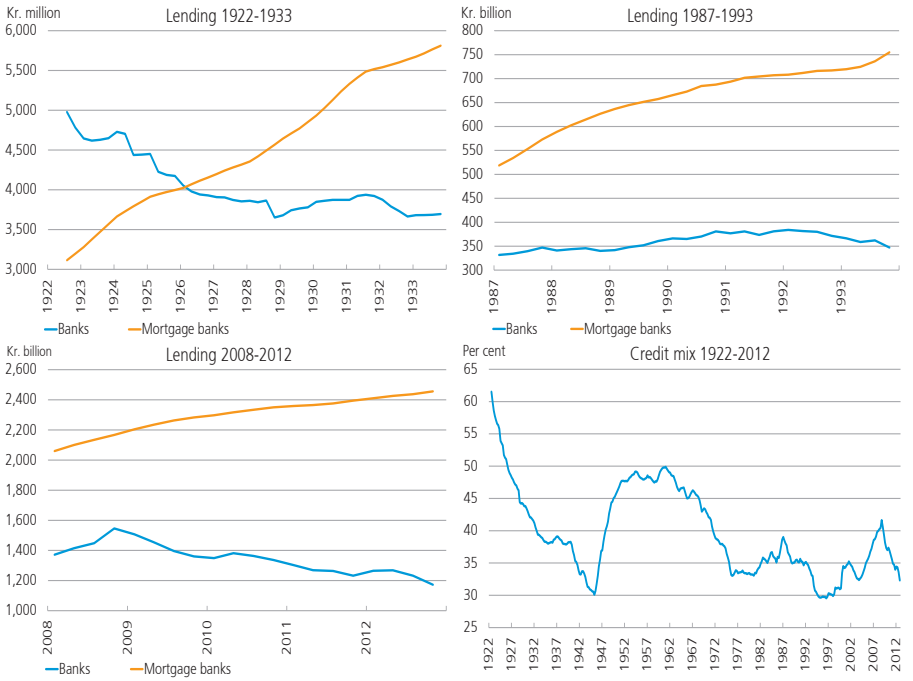
Abildgren and Kuchler (2013) estimate a model of the relationship between firm characteristics and the probability that a loan application is accepted. The results confirm the above analysis. Firms with higher profit ratios, solvency ratios and liquidity ratios are more likely to have their loan applications approved. Contrary to expectations, however, there are no indications that the banks' solvency situation has significantly affected the outcome of a firm's loan application during the crisis. This should no doubt be viewed in the context of comprehensive government intervention during the financial crisis to support financial stability.

The firms' key financial ratios had no significant effect on the outcome of applications for bank loans in 2007. This could indicate that the high lending growth in the pre-crisis years was at the expense of the credit quality of the loan portfolio.

ALTERNATIVE SOURCES OF FUNDING – MORTGAGE-CREDIT SECTOR

Danish firms have access to other sources of funding than loans from Danish banks. Mortgage funding is the most widely used alternative to

LENDING BY BANKS AND MORTGAGE BANKS, AND CREDIT MIX Chart 7



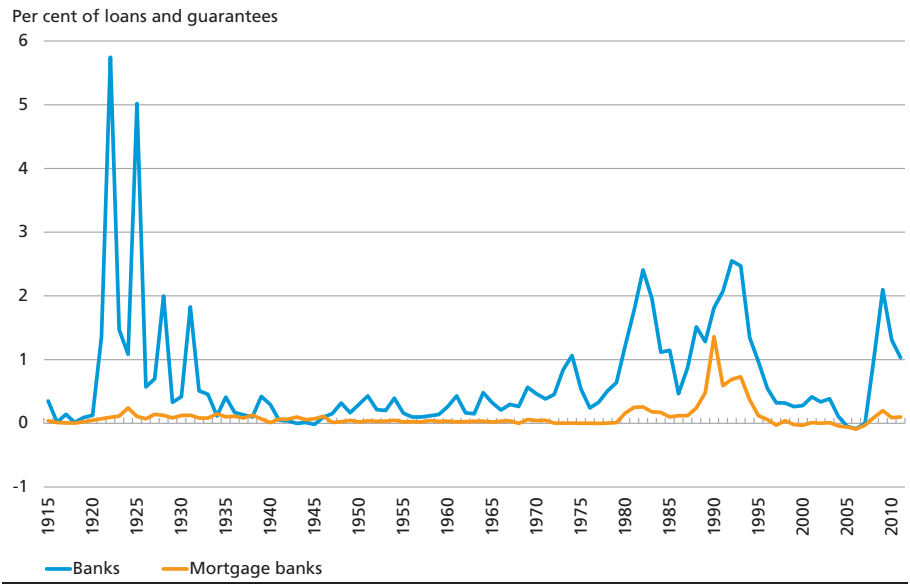
Note: Quarterly observations. Comprises lending to domestic non-MFIs. The credit mix is calculated as bank lending as a ratio of total bank and mortgage-bank lending.
Source: Abildgren (2012).

bank loans. Chart 7 shows lending by banks and mortgage banks in 1922-1933, 1987-1993 and 2008-2012, all periods characterised by defaults in the banking sector and a falling or stagnating trend in bank lending. On the other hand, lending by mortgage banks increased during the same periods.

Chart 7 also shows the credit mix, defined here as bank lending as a ratio of total bank and mortgage-bank lending. The credit mix has been characterised by a long-term downward trend as mortgage-bank lending has gained increased weight in the economy.

Chart 7 indicates that in periods of crisis in the banking sector, there has been relative substitution of lending by banks towards lending by mortgage banks, reflecting that mortgage banks only grant loans based on real property as collateral – even the "most secure" part of the property value (first mortgage). Historically, the loan impairment charge ratios of mortgage banks have always been markedly lower in periods of crisis than those of banks, cf. Chart 8, and mortgage banks have consequently not had the same need as banks to adjust their credit exposure during periods of economic crisis. Accordingly, households and firms were able to cover part of their credit requirements in the mortgage-

LOAN IMPAIRMENT CHARGES IN BANKS AND MORTGAGE BANKS Chart 8



Source: Statistics Denmark and the Danish Financial Supervisory Authority.

credit sector during periods in which banks needed to reduce their lending exposure. This contributed to the fact that, during the recent crisis, total lending by banks and mortgage banks did not decline substantially relative to GDP, cf. Chart 9. The total lending volume remains high in a long-term perspective.

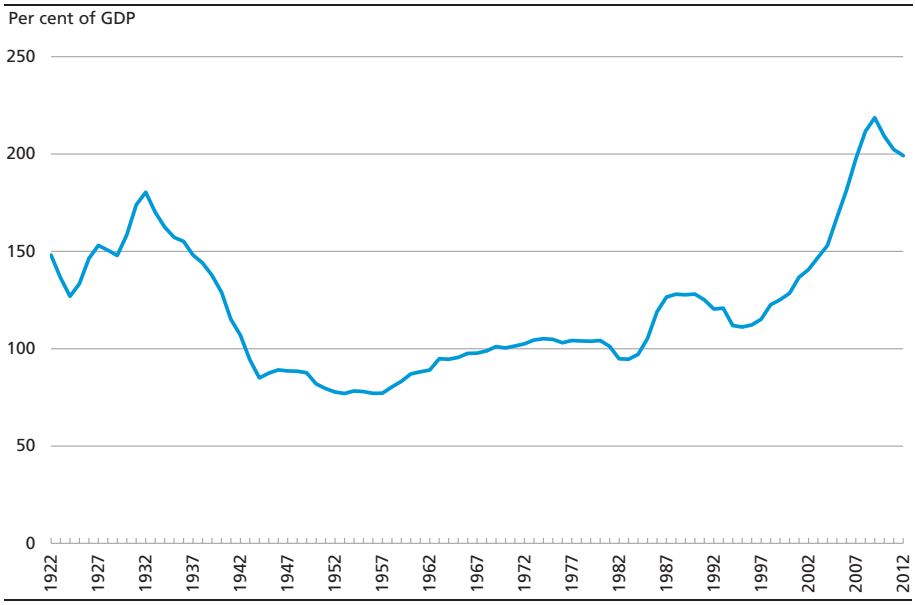
The increase in the credit mix in the mid-1930s and in the second half of the 1990s does not imply that mortgage-bank lending declined in absolute levels in the years following periods of banking crisis. But bank lending increased more strongly than mortgage-bank lending during those periods. Since mortgage banks only grant loans based on real property as collateral, this may reflect that marginal borrowing during a cyclical upswing – when the outlook for the ability of firms and households to meet payments is good – takes place to a greater extent on an uncollateralised basis via banks.

The above analyses do not necessarily mean that individual households and firms or even whole industries may not have found it hard to obtain sufficient funding during the crisis, e.g. due to insufficient real estate equity. Nor is there any doubt that the recent financial crisis has given rise to considerable additional loss of output in the Danish economy, cf. Abildgren et al. (2011).

The financial crisis has had negative social effects through several channels – in addition to the negative impact from the international

LENDING BY BANKS AND MORTGAGE BANKS TO DANISH HOUSEHOLDS AND NON-FINANCIAL CORPORATIONS

Chart 9



Source: Abildgren (2012), Hansen (1983), Danmarks Nationalbank and Statistics Denmark.

economy, which was characterised by financial and debt crises. The financial crisis eroded the firms' credit standing and ability to meet payments in particular, which caused banks to tighten their credit standards and to limit their lending exposure. In addition to the negative impact on the real economy caused by lending restraint in a crisis-stricken banking sector, the financial crisis also adversely affected the economy in more general terms. The growing perceived uncertainty about the future economy and the economic outlook for households and the corporate sector brought about by the financial crisis may have led to lower consumption and investment and thus to lower house prices, output and demand for credit. Furthermore, corporate confidence in the banking sector's willingness and ability to always meet the demand for credit and liquidity in an economic downturn may have weakened. This may have amplified consolidation and debt reduction by non-financial corporations and dampened credit demand, investment activity and employment. Non-financial corporations show substantial savings surpluses, and the financial savings surpluses of Danish firms and households relative to the gross domestic product, GDP, have reached the highest levels since the start of the statistical series in the early 1970s. The savings surpluses are thus higher than during the deep recessions in the early 1980s and 1990s.

All other things being equal, due to the consolidation and debt reduction of the corporate sector, there is no reason to expect strong growth in demand for bank loans when the economy improves. This is particularly true when considering that Danish firms traditionally use retained earnings to fund part of their fixed gross investments at the beginning of an upswing rather than loans from mortgage banks in Denmark and abroad, cf. Abildgren (2009). If a coming upswing is accompanied by moderate demand for credit, it is paramount to future financial stability that banks do not ease their credit standards to a level that is too low.

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Consumption, Income and Wealth

Jens Bang-Andersen, Tina Saaby Hvolbøl, Paul Lassenius Kramp and Casper Ristorp Thomsen, Economics

INTRODUCTION AND SUMMARY

In Denmark, private consumption accounts for around half of domestic demand and has a strong impact on the business cycle. Consequently, it is important to have good insight into the determinants of private consumption, e.g. in connection with business cycle analyses of the Danish economy.

Over the last 10-15 years, Danish households have increased their net wealth as a ratio of income. At the same time, they have also expanded their balance sheets, i.e. both assets and liabilities. As a result, their gross debt ratio is now among the highest in the world even though their net wealth ratio is on a par with comparable countries. The high gross debt has attracted considerable attention both nationally and internationally.

In Part 2 of this Monetary Review we analyse how net wealth and its composition have influenced fluctuations in private consumption, first in a wider international perspective, followed by a separate analysis for Denmark. We also investigate the effects of financial flows from household wealth on household income and hence the scope for consumption. This overview article contains a non-technical summary of the most important findings and conclusions of the analyses.

Rising wealth entails more scope for consumption, and the consumption and net wealth ratios are expected to show similar patterns under normal circumstances. However, a number of countries have seen an increase in the net wealth ratio without the consumption ratio following suit. Growth in net wealth covers in particular rising housing wealth and in some countries – including Denmark – rising pension wealth. There are a number of possible explanations of why the higher net wealth ratio has not led to a higher consumption ratio, such as the widespread use of savings-based pension schemes.

As regards fluctuations in consumption, Denmark stands out from most other comparable countries. The divergence seems to be related particularly to differences in fluctuations in housing wealth and income. The strong influence of housing wealth on fluctuations in consumption

can be attributed to e.g. the fact that rising house prices reduce credit constraints.

In order to throw light on the significance of wealth to consumption in Denmark, we construct and estimate a model with special focus on the short and medium run. The properties of the consumption function are then examined within the framework of Danmarks Nationalbank's macroeconomic model, MONA. This makes it possible to take into account dynamic effects of shocks to the consumption function, e.g. how increased consumption stimulates income, which in turn boosts consumption.

Fluctuations in housing wealth play a large role in the aggregate model. During the boom in 2004-07, house prices rose by approximately 60 per cent, whereas they fell by around 15 per cent from end-2007 to end-2009. According to the model, this was the most important factor behind the surge in consumption during the boom and the subsequent sharp fall. The key role of housing wealth in consumption fluctuations ties in well with the observations from the international comparison.

Moreover, the model demonstrates that the falling interest rates in recent years – in response to the marked international economic slowdown – have contributed substantially to cushioning private consumption. The decline in interest rates has both reduced net interest expenses and supported house prices.

The key role of interest rates can be attributed, among other factors, to the households' accumulation of a high gross debt ratio over the last 15 years without correspondingly increasing interest-bearing assets. In the model, investment income from pension wealth is accumulated rather than being transferred directly to households, so that it affects disposable income only with a lag via future pension payouts. Consequently, interest-rate changes will be passed through to household interest expenses immediately, while interest income from pension wealth will only slowly affect income. Alternatively, pension wealth can be regarded as fixed-rate wealth due to guarantees and interest-rate hedging. Interest-rate changes will, also in this case, principally have an impact on household interest expenses and only to a limited extent on their interest income. Moreover, a far larger part of the debt is now variable-rate debt. All in all, this implies higher interest-rate sensitivity for household disposable income and thus private consumption today, compared with previously.

As a result of the more pronounced interest-rate sensitivity, the transmission mechanism of monetary-policy has strengthened and, viewed in isolation, normalisation of international and Danish monetary-policy interest rates will have a stronger dampening effect on consumption

today than a corresponding interest-rate increase would have had 10 years ago. This emphasises how important it is that financial markets have confidence in the Danish economy.

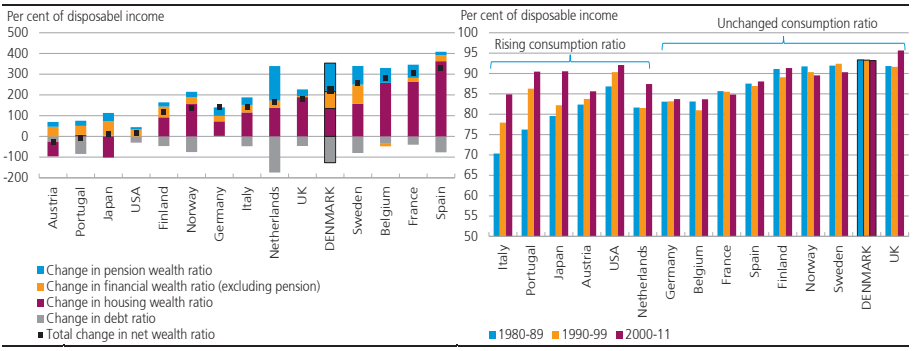
CONSUMPTION, INCOME AND WEALTH IN AN INTERNATIONAL CONTEXT

Many countries have seen a general increase in the net wealth ratio for households over the last 30 years, cf. Chart 1 (left). Higher housing wealth has been the principal contributor to the increase, but in some countries, such as Denmark and the Netherlands, higher pension savings have also contributed substantially.

Given the increase in the wealth ratio over the last 30 years, the consumption ratio could also be expected to have risen. However, not many western countries have seen such an increase. Instead, average consumption ratios have been virtually stable over the last three decades, cf. Chart 1 (right). Only Italy, Portugal and Japan have seen a considerable increase in the consumption ratio, which should be viewed in light of such factors as the initially very low consumption ratio in these countries relative to other OECD countries.

Several factors may have contributed to the rise in net wealth over time without the consumption ratio following suit. Demographics, for instance, may have contributed to the development. In some countries, changes in the pension system may also have played a role due to the widespread use of savings-based pension schemes. Moreover, falling interest rates may increase wealth, a case in point is the growth in house prices in most countries. House price gains over the last 20 years have

CHANGE IN HOUSEHOLD WEALTH RATIO IN THE PERIOD 1995-2011 (LEFT) AND THE AVERAGE CONSUMPTION RATIO FOR HOUSEHOLDS (RIGHT) Chart 1



Note: Left-hand chart: Including pension wealth before tax. Right-hand chart: It has been attempted to adjust for data breaks. For Austria and Belgium the average in the 1980s covers only 1985-89.
Source: Left-hand chart: OECD, Statistics Denmark and Isaksen et al. (2011), right-hand chart: OECD and Isaksen (2011).

presumably only partially been translated into consumption. Possible reasons are credit constraints – for instance, it is not possible to borrow against home equity in a number of countries – or households' aversion to increasing their loan-to-value, LTV, ratios.

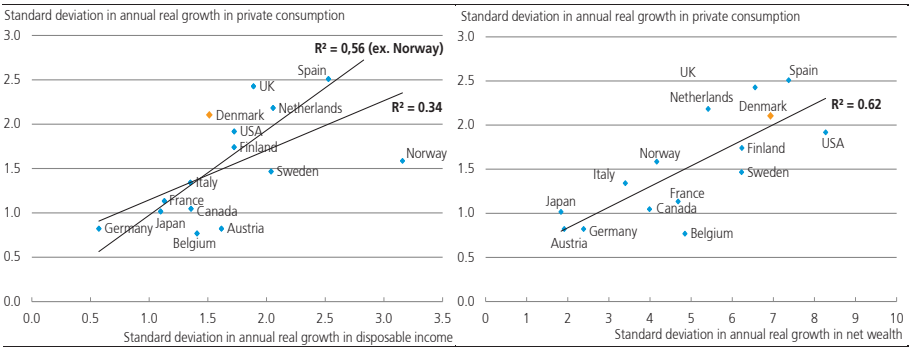
Consequently, the pattern in Denmark over the last three decades with an increasing wealth ratio and a stable consumption ratio is not unique; it is also found in other countries such as Sweden, France and to a lesser extent Germany. However, this development may not necessarily have the same determinants across countries. In Denmark, the LTV ratio for homes has increased over the last 20-30 years, presumably due to the Danish mortgage-credit system, but also to the fact that high pension wealth reduces the need for having redeemed all debt by the time of retirement. This makes it possible that a larger share of house price increases in Denmark over the last 20 years has been translated into consumption compared with other countries. Moreover, a further distinguishing feature of private consumption in Denmark relative to comparable countries is the high degree of volatility.

The difference in fluctuations in consumption growth seems to be attributable especially to variations in the volatility of income and wealth across countries, cf. Chart 2. Fluctuations in disposable income may result from e.g. changes in employment, but also changes in interest rates. Changes in interest rates will have a particularly strong impact on household disposable income in countries with a high ratio of interest-bearing net debt to income.

There is also a clear relationship between cyclical fluctuations in wealth and consumption, cf. Chart 2 (right). The principal reason is the strong correlation between fluctuations in housing wealth and fluctuations in private consumption over a business cycle. However, the rea-

CORRELATION BETWEEN FLUCTUATIONS IN CONSUMPTION, INCOME AND WEALTH

Chart 2



Note: 1996-2011.
Source: OECD, Statistics Denmark and Isaksen et al. (2011).

sons for the correlation cannot be determined on the basis of these simple graphs. One possibility is that falling interest rates or a fiscal easing increases both consumption and house prices. Another possible explanation is that fluctuations in housing wealth affect credit constraints and thus volatility in consumption.

On the other hand, fluctuations in pension wealth have been only weakly correlated with private consumption, especially if the focus is on countries where households hold substantial pension wealth (Denmark, the Netherlands, Sweden, the UK and the USA).

PRIVATE CONSUMPTION IN DENMARK

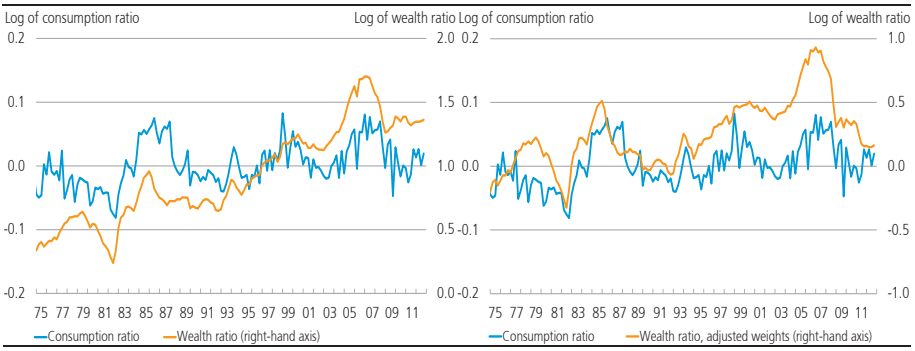
Annual growth in consumption in Denmark has been almost 2 per cent over the last 30 years. However, this masks substantial fluctuations. For example, consumption increased strongly in the period up to the financial crisis and then dropped by almost 6 per cent from the 2nd quarter of 2008 to the 1st quarter of 2009. In order to analyse the reasons for this development, we construct and estimate a model that explains fluctuations in consumption by income, wealth and several other factors.

The short-run and medium-run properties of the consumption function are to a high degree determined by the choice of definition of income (consumption-determining income), while the definition of wealth plays a smaller role. In particular, the properties depend on how investment income from pension wealth is treated. We opt for a description where the accumulation of investment income from pension wealth affects household disposable income only with a lag via future pension payouts.[1] Thus, changes in interest rates will immediately be passed through to household interest expenses, while interest income from pension wealth will only slowly affect income. In the short and medium term, interest-rate increases will thus lead to higher net interest expenses for the households.

Alternatively, interest income from pension wealth can be included directly in consumption-determining income, e.g. by using the disposable income of the private sector. However, this approach will not necessarily change the pass-through of a change in interest rates to net interest expenses, since pension wealth to a high degree has a fixed return as a result of guarantees and interest-rate hedging. Hence, interest-rate changes will, also in this case, principally impact household interest expenses and only to a limited extent on their interest income.

[1] The treatment of investment income from mandatory pension savings corresponds to the disposable income concept in the national accounts. Other macroeconomic models, such as ADAM, have the same approach in the short run.

CONSUMPTION AND WEALTH RATIOS IN LOGARITHMS Chart 3



Note: See the article: Consumption, Income and Wealth in Part 2 of this Monetary Review for a specification of income and wealth definitions.
Source: Own calculations based on data from Statistics Denmark, Danmarks Nationalbank and MONA.

The identification of consumption-determining wealth is difficult and associated with uncertainty, but as mentioned, the choice of definition of wealth has only a minor impact on the properties of the consumption function in the short and medium run. The wealth ratio of Danish households – like households in a number of other countries – has risen considerably over the last 30 years without the consumption ratio following suit, cf. Chart 3 (left). An increasing wealth ratio in conjunction with a stable consumption ratio poses challenges when constructing a stable consumption function, which initially requires identical development patterns for the two ratios. It is not possible to identify clearly, on the basis of macroeconomic data, which components of wealth have risen without influencing consumption. However, there are some empirical and theoretical clues.

The various types of household assets, such as pension schemes, equities, bank deposits and housing, are very different, implying varying influence on consumption. Pension savings, for instance, are tied up until retirement, cannot be pledged and are typically paid out over a number of years.[1] This indicates a small impact on the consumption ratio from pension wealth, especially in the short and medium run. For some households, e.g. those that are close to retirement, pension wealth no doubt plays a larger role.[2] An in-depth analysis of the long-run effects of

1 Moreover, payouts from household pension wealth in part reduce public pension payouts by decreasing the pension premium, among other channels. The widespread use of labour-market pensions for civil servants and corresponding phasing-out of civil servant pensions may also have increased pension wealth without affecting the consumption ratio.

2 This is confirmed by analyses at individual level, cf. Søren Arnberg and Mikkel Barslund, The crowding-out effect of mandatory labour market pension schemes on private savings: Evidence from renters in Denmark, *The Economic Councils Working Paper*, 1, 2012. For younger households, one additional krone of pension contribution increases their total savings by kr. 1, i.e. they do not reduce other savings. For older households close to retirement, on the other hand, other savings are reduced by kr. 0.30, whereby their total savings rise by only kr. 0.70. An aggregate measure for all households is that one additional krone of pension savings increases total savings by approximately kr. 0.80. It is not possible to transfer these estimates of household savings behaviour directly to a specific weight of pension wealth in the macro analysis.

increased private pension wealth is beyond the scope of this analysis, however.

Equity wealth is typically also found to have a relatively small impact on consumption, *inter alia* because the distribution of this wealth is very uneven, as it is held by high-income families in particular. Moreover, in Denmark any capital gains are taxable.

Real house prices have risen over the last 20 years, e.g. due to falling interest rates and introduction of new loan types. Housing wealth can only be translated into consumption by the households borrowing against home equity or selling the home. The Danish mortgage-credit system provides ample room for borrowing against home equity, thus translating house price increases into consumption, but there are limits to how much the households can and will increase the loan-to-value, LTV, ratio. This means that the last 20 years' house price increases have only partially been translated into consumption.

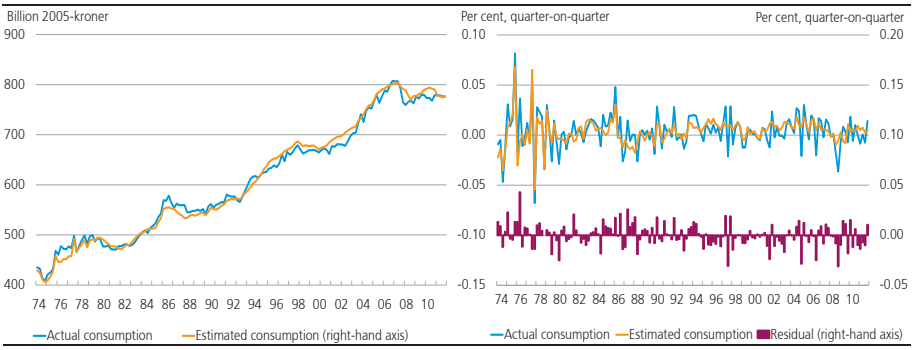
The above discussion indicates that increasing pension and equity wealth has played a substantial role in the divergence of the consumption and wealth ratios over the last 30 years, but that higher housing wealth may also have been a factor. This is confirmed by a simple estimation explaining the consumption ratio by the pension, equity and housing wealth ratios and the remainder of the net wealth ratio. The estimated weights of the pension and equity wealth ratios become small and not statistically significant, while the weight of the housing wealth becomes slightly smaller than the weight of remaining net wealth ratio. Hence, it seems obvious to reduce the weights of these wealth components in a model context.

Specifically, the weight of pension wealth is set at 0.2, equity wealth at approximately 0.4, and housing wealth at 0.8, ensuring that the consumption-determining wealth ratio has, by and large, fluctuated around a historical average, cf. Chart 3 (right). The weights reflect an empirical choice, but formal estimations confirm that the above weighting of wealth strengthens the long-run relationship between consumption, income and wealth compared with the choice of total household net wealth.

As mentioned already, the information content of data is not sufficient to provide clear identification of the correct weights; for example, the weight of pension wealth could be reduced if the weights of housing and/or equity wealth are increased. A robustness check shows that such changes of the weights have only a small impact on the model properties in the short and medium run.

A long-run relation has been estimated between consumption, income and wealth as described above. In the short run, however, consumption

ACTUAL AND SIMULATED CONSUMPTION Chart 4



Note: Left-hand chart: dynamic simulation, i.e. the error correction term is based on the difference between the simulated short-run and long-run models. Start in the 1st quarter of 1974. Right-hand chart: static simulation.
Source: Own calculations.

could deviate from the long-run relation, as indicated by a number of factors. We therefore construct a model in which the quarterly changes in consumption are explained by deviations from the long-run model and a number of variables that may influence consumption in the short run, such as unemployment and real interest rates.

In order to take into account in the best possible way dynamiceffects of shocks to the consumption function, e.g. how increased consumption stimulates income, which in turn boosts consumption, the estimated consumption function is linked to Danmarks Nationalbank's existing macroeconomic model, MONA. This requires construction of a financial submodel to manage the relationship between household income, consumption and savings on the one hand and wealth on the other.

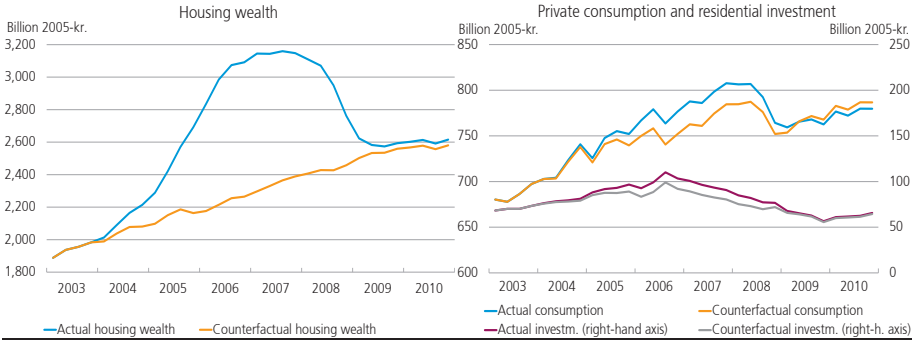
Overall, the estimated model captures the fluctuations in consumption since 1974, cf. Chart 4 (left), and simulated consumption is close to actual consumption throughout the boom years prior to the financial crisis.

Consumption before the financial crisis – the role of the housing bubble

In order to assess the significance of the strong fluctuations in house prices to private consumption in the period 2004-09, the counterfactual development in consumption is calculated, given steady growth in housing wealth from the beginning of 2004 until the beginning of 2010, cf. Chart 5 (left).

The consumption effect of the strong increases in house prices was quite pronounced. Steady growth in housing wealth in 2004-09 would have entailed approximately kr. 25 billion lower private consumption by end-2007, cf. Chart 5 (right), corresponding to almost 1.5 per cent of GDP, while residential investment would have been around kr. 11 billion lower, equivalent to 0.75 per cent of GDP.

IMPACT OF HOUSING WEALTH ON CONSUMPTION Chart 5



Note: Right-hand chart: house prices in the counterfactual scenario are identical to actual house prices in the 4th quarter of 2003 and the 1st quarter of 2010. Counterfactual housing wealth is slightly lower than actual housing wealth at the end of the period as a result of a lower level of investment in the counterfactual scenario. Left-hand chart: counterfactual scenario: start in the 1st quarter of 2004.

Source: Own calculations.

Consumption after the financial crisis – the role of lower interest rates

In the wake of the financial crisis, private consumption contracted by almost 6 per cent from the 2nd quarter of 2008 to the 1st quarter of 2009. Since then, private consumption has shown weak development despite the easing of both fiscal and monetary policies and the strong drop in market interest rates. This should be viewed in light of a very weak international economic position.

From the 2nd quarter of 2009 to end-2012, the 1-year mortgage yield decreased by approximately 2.4 percentage points, cf. Chart 6 (left), but also longer-term mortgage yields and bank interest rates declined almost correspondingly. As a result of the drop in interest rates, household net interest expenses, calculated as the difference between interest paid and interest received, fell from 10.7 per cent to 5.9 per cent of disposable income.[1]

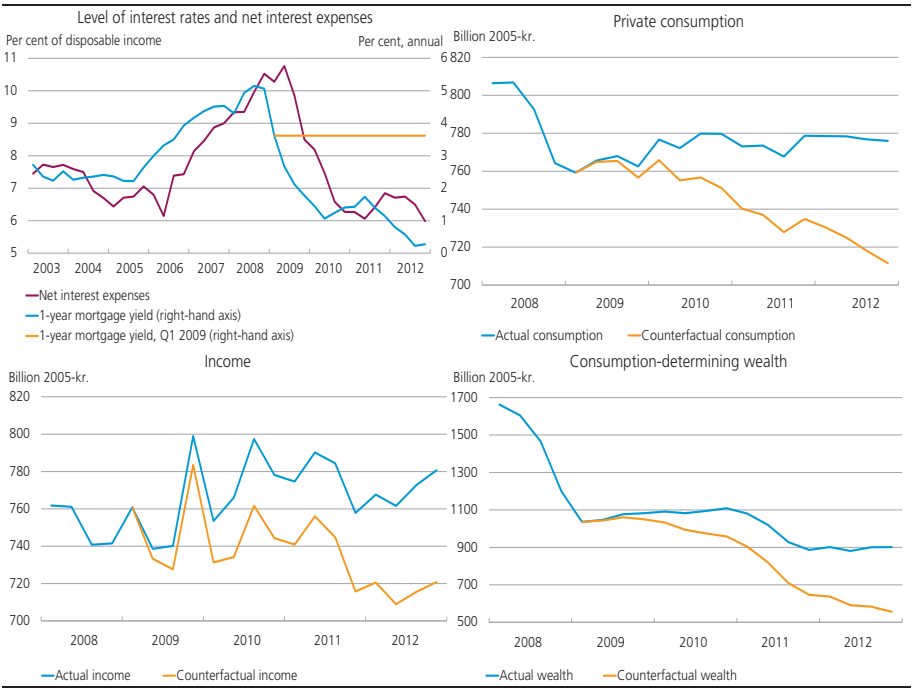
In order to assess the significance of the drop in interest rates to consumption, the counterfactual development in consumption according to our model is calculated, assuming that all interest rates were constant at the level from the 1st quarter of 2009 to end-2012, but if the international economic situation remained unchanged.[2] Thus, the counterfactual experiment shows the development in consumption given a combination of high interest rates and a very weak international economic position.

1 Interest payments in the national accounts include FISIM, which is an estimate of the share of the interest margin that can be regarded as payment for a service. Consequently, the net expenses shown are slightly lower than the actual net interest expenses. But the development is presumably largely unaffected by FISIM.

2 The level of e.g. the 1-year mortgage yield in the 1st quarter of 2009 roughly corresponds to its average level since 2000.

LEVEL OF INTEREST RATES, NET INTEREST EXPENSES AND COUNTERFACTUAL DEVELOPMENT IN CONSUMPTION, INCOME AND WEALTH

Chart 6



Note: Top left: Net interest expenses are based on the national accounts, i.e. according to FISIM. Bottom right: Consumption-determining wealth is both less and more volatile than actual net household wealth.

Source: Top left: Own calculations based on data from Statistics Denmark and Danmarks Nationalbank. Remaining charts: own calculations.Top left: own calculations based on data from Statistics Denmark and Danmarks Nationalbank. Remaining charts: own calculations.

A higher level of interest rates would have led to lower disposable income (higher net interest expenditure) and lower house prices. The calculations show that as a result of the lower interest rates, household disposable income is 7.7 per cent higher than it would otherwise have been, cf. Chart 6 (bottom left), while consumption-determining wealth is almost kr. 400 billion higher than it would otherwise have been.

Hence, via lower interest-rate expenses and higher wealth, the drop in interest rates since 2009 has contributed to cushioning private consumption. Without the drop in interest rates, private consumption at end-2012 would have been approximately kr. 60 billion lower, corresponding to 8.5 per cent, cf. Chart 6 (top right)

The substantial impact of the drop in interest rates on consumption can be attributed to the high household debt ratio, which has risen strongly over the last 15 years from around 200 per cent of disposable income in 2000 to more than 300 per cent at end-2012. Household interest-bearing assets, on the other hand, have not increased – given

that investment income from pension wealth is accumulated in pension accounts and thus paid out with a considerable lag – but have remained relatively stable near 100 per cent of disposable income. As a result, interest-bearing net household debt is currently more than 200 per cent of disposable income. At the same time, a far larger share is variable-rate debt today. Alternatively, pension wealth can be regarded as fixed-rate wealth, so interest-rate changes will, also in this case, principally affect household interest expenses and only to a limited extent their interest income. All in all, this entails higher interest-rate sensitivity for household disposable income today, compared to previously.

Was the Krone a Safe Haven during the Sovereign Debt Crisis?

Anders Jørgensen and Christoffer C. Larsen, Market Operations, and Lars Risbjerg, Economics

INTRODUCTION AND SUMMARY

The term "safe haven" is often used about assets that can protect investors from losses during financial turmoil. If the value of an asset increases in connection with financial turmoil, this is a sign that it is a safe haven. A safe haven is often associated with an inflow of capital.

Danish assets have been mentioned as a safe haven in relation to the sovereign debt crisis in parts of the euro area. During the sovereign debt crisis, demand for Danish government securities and mortgage bonds was high. Foreign investors' holdings increased, and the yields on Danish government securities fell to historically low levels, while yields rose for peripheral euro area member states.

The krone strengthened against the euro in the period from July 2011 to July 2012, when the sovereign debt crisis peaked. To counter the strengthening tendency of the krone, Danmarks Nationalbank intervened by selling kroner against foreign exchange for considerable amounts and reduced its interest rates, both unilaterally and in step with the European Central Bank, ECB, so that Danmarks Nationalbank's rate of interest on certificates of deposit became negative.

The strengthening of the krone coincided with increased volatility in the financial markets. This relationship was particularly strong in the period from July 2011 to July 2012, even if the impact of currency flows and Danmarks Nationalbank's interest-rate decisions and intervention in the foreign-exchange market is taken into account. In other words, the increased uncertainty had an effect on the exchange rate beyond that stemming from currency flows.

The development in the krone exchange rate against the euro during the sovereign debt crisis was unusual compared with previous times of financial turmoil. Since the introduction of the fixed-exchange-rate policy in the early 1980s, there has typically been a tendency for the krone to weaken relative to its anchor currency, i.e. the euro and before 1999 the D-mark, in periods of financial turmoil. Most recently, this was

seen during the financial crisis in 2008, when the krone came under pressure, as did other small currencies.

The situation during the sovereign debt crisis was extraordinary. On account of Denmark's fixed-exchange-rate policy, some investors saw the krone as an opportunity to hedge the risk of a break-up of the euro. The perception was that in such a scenario the krone would strengthen and would be pegged to the strong part of the euro with German participation, given that it had previously been pegged to the D-mark. This was particularly notable in the market for currency options between kroner and euro, where there was an increased interest in options giving the holder the right to buy kroner against euro at a predetermined exchange rate. In many cases, the krone rate in these options exceeded the strong margin of the fluctuation band in ERM 2.

All in all, the analysis in this article indicates that the krone was a safe haven relative to the euro at the height of the sovereign debt crisis from July 2011 to July 2012.

SAFE HAVEN INDICATORS

The term "safe haven" is often used about assets that can protect investors from losses during financial turmoil. There is no clear definition of a safe haven. The term is typically used in periods of financial turmoil, during which asset prices in countries seen as safe havens tend to rise. In this way these investments serve to hedge risks during the financial turmoil. This may give rise to stronger foreign investor interest and thus increased capital inflows in periods of financial turmoil.

The growing volume of literature in this area operates with a number of fundamental characteristics defining a currency as a safe haven, cf. e.g. Habib and Stracca (2011):

1. Investment in the currency hedges increased financial risk.
2. The country issuing the currency has a high credit rating for government issuance.
3. The size and liquidity of the country's financial markets (capital and foreign-exchange markets) make it possible to hedge risks during periods of financial turmoil.
4. The country's financial markets allow free capital flows.

The above properties vary over time and through financial crises, so the status of currencies as safe havens may also change. The narrow definition is that a safe haven currency is generic over time, i.e. it hedges increased financial uncertainty both in "normal" times and during actual financial crises.

There are various indicators of financial turmoil and risk in the financial markets. This article applies the VIX index as an indicator of financial turmoil and risk. The VIX expresses the implied volatility in options on the US S&P 500 stock index. There is a tendency for currencies identified as safe havens to strengthen on days when the VIX rises, cf. Box 1. Grisse

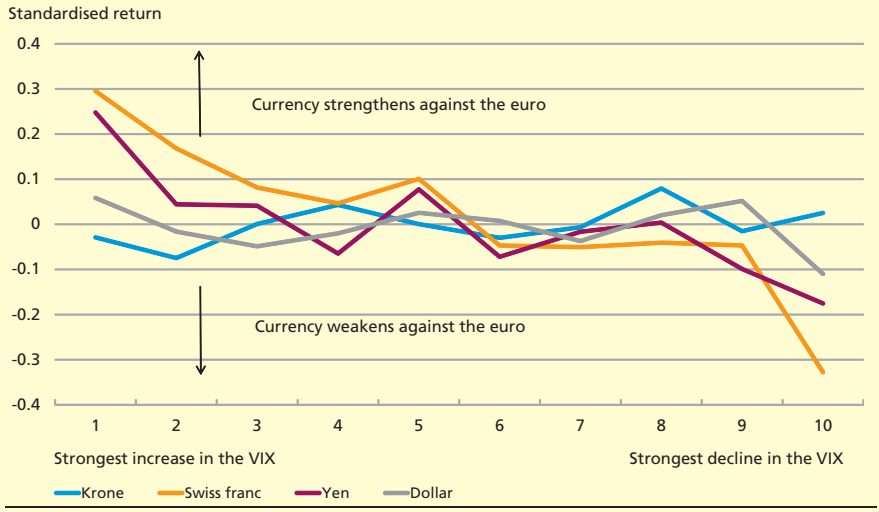
SAFE HAVEN CURRENCIES — Box 1

The Japanese yen, Swiss franc and US dollar are currencies identified as safe havens, cf. Ranaldo and Söderlind (2009), Flatner (2009) and Grisse and Nitschka (2013). A currency does not necessarily display safe haven characteristics vis-à-vis all major currencies. For example, the Swiss franc has generally had safe haven status against the euro, but not against the dollar and the yen, cf. Grisse and Nitschka (2013).

To gain an impression of the relationship between changes in exchange rates and the VIX, daily changes in the VIX index are divided into groups. Group 1 is the 10 per cent of days with the strongest increases in the VIX, while group 10 is the 10 per cent with the strongest declines. For each of the 10 groups, the average return in per cent is calculated for each currency. To facilitate comparison between currencies, the return is normalised with standard deviation of the return.

In the period 1999-2013, the yen and the Swiss franc generally strengthened against the euro in periods of heightened financial risk and weakened when risk declined, cf. Chart 1. This indicates that the yen and the franc were seen as safe havens. The US dollar also tends towards a safe haven status. As regards the Danish krone, it is not possible to gain a clear picture for the period, as the fixed-exchange-rate policy means that it fluctuates with the euro to a large extent.

CORRELATION BETWEEN CHANGES IN THE VIX AND EXCHANGES RATE AGAINST THE EURO, 1999-2013 — Chart 1



Note: Daily observations are used, which are divided into 10 groups on the basis of developments in the VIX index. For each group, the average return in per cent is calculated for each currency. This has been standardised by dividing by the standard deviation in the daily returns for each currency. Data for the VIX is lagged by one day due to the time difference between the ECB's fixing of exchange rates and the VIX index.

Source: ECB, Bloomberg and Danmarks Nationalbank.

and Nitschka (2013) argue that the VIX is an expression of the global exchange-rate risk since it has a high correlation with volatility in the foreign-exchange markets.

The Danish krone is a relatively small currency, but as a consequence of the fixed-exchange-rate policy it fluctuates with the euro against third currencies. Investors typically withdraw from small currencies and turn to larger, more liquid currencies in periods of financial turmoil. That was also the case during the financial crisis in 2008.

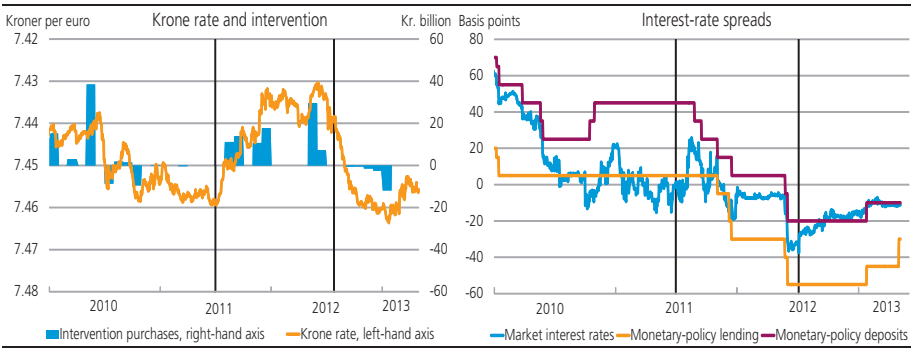
However, the krone strengthened against the euro in connection with the escalation of the sovereign debt crisis from July 2011 until the ECB's President, Mario Draghi, on 26 July 2012 in a speech announced that, within its mandate, the ECB would do whatever it takes to preserve the euro.[1] This was an extraordinary situation in which investment in kroner, given Denmark's fixed-exchange-rate policy, was seen by some investors as an opportunity to hedge the risk of a break-up of the euro. The perception was that in such a scenario the krone would strengthen and would be pegged to the strong part of the euro with German participation, given that it had previously been pegged to the D-mark. In the market for currency options between kroner and euro this led to an increased interest in options giving the holder the right to buy kroner against euro at a predetermined exchange rate. In many cases, the krone rate in these options exceeded the strong margin of the fluctuation band in ERM 2. There are indications that positions in the currency option market for kroner against euro contributed to the strengthening of the krone, cf. Box 2.

To counter the krone's strengthening tendency, Danmarks Nationalbank in the period from August 2011 to June 2012 intervened by purchasing foreign exchange and selling kroner for kr. 91 billion. Moreover, Danmarks Nationalbank reduced its monetary-policy interest rates on several occasions, both in tandem with the ECB and also unilaterally in order to reduce the interest-rate spread between Denmark and the euro area, cf. Chart 2. In early July 2012, Danmarks Nationalbank followed when the ECB lowered its interest rates, and Danish monetary-policy interest rates became historically low. The rate of interest on certificates of deposit was reduced to -0.20 per cent. The difference between monetary-policy interest rates in Denmark and the euro area remained unchanged.

The krone weakened immediately after the introduction of a negative rate of interest on certificates of deposit, which meant that any market

[1] The markets calmed down further when the ECB in early September 2012 announced a new Outright Monetary Transactions (OMT) programme, which entails that the ECB may purchase government securities from euro area member states in the secondary market under certain conditions.

KRONE EXCHANGE RATE, INTERVENTION AND INTEREST-RATE SPREADS Chart 2



Note: The vertical lines indicate 1 July 2011 and 26 July 2012, respectively. Intervention purchases are net purchases of foreign exchange against kroner on a monthly basis. Interest-rate spreads are the spreads between interest rates in Denmark and the euro area. Market interest rates are the spread between 1-month CITA and EONIA swap rates.

Source: Reuters and Danmarks Nationalbank.

doubts as to whether Danmarks Nationalbank would actually take this step were eliminated. The subsequent development in the exchange rate of the krone should be viewed against the backdrop of the situation in the euro area. The krone weakened as confidence in the management of the sovereign debt crises in a number of European countries improved, partly in response to announcements by ECB President Draghi in late July 2012.

OPTIONS FOR DANISH KRONER AGAINST EURO Box 2

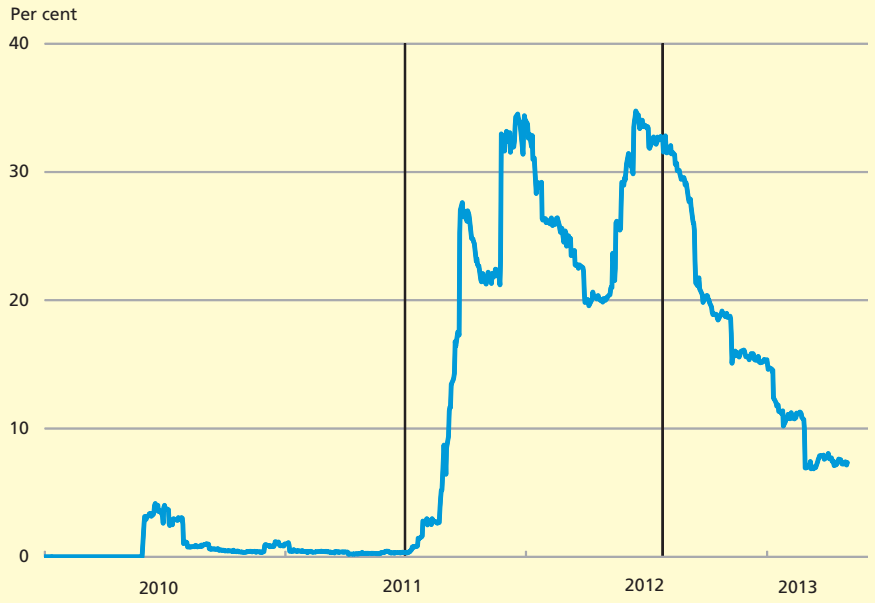
A currency option for kroner against euro gives the holder the right, but not the obligation, to purchase (call option) or sell (put option) euro against kroner at a future date at an agreed price (strike price). The market for options for kroner against euro is normally relatively limited due to Denmark's fixed-exchange-rate policy. In connection with the sovereign debt crisis in the euro area, demand for put options increased. From the 2nd quarter of 2010, when sovereign debt problems in some euro area member states came into focus, options for selling euro against Danish kroner at a price close to the strong ERM 2 fluctuation margin were demanded. On the basis of the prices for such options, it is possible to calculate the option-implied probability that the Danish krone will exceed the strong margin in ERM 2, i.e. strengthen by more than 2.25 per cent relative to the central rate, cf. Chart 3.

The calculated option-implied probability that the Danish krone would exceed the strong margin in ERM 2 increased in mid-2010. But it was not until mid-2011, when the sovereign debt crisis escalated, that the implied probability soared. Presumably the increase in the calculated probability is not an expression of market participants' perception of the probability; instead it reflects limited liquidity in the market, with demand for (put) options exceeding the supply. The limited liquidity led to higher volatility. This in turn meant that the value of outstanding options rose, to the advantage of buyers of these options.

CONTINUED Box 2

Sellers of the options who wished to hedge the increased liability might have found themselves compelled to buy kroner as the market for opposite options was limited. This amplified the upward pressure on the krone, triggering further purchases of kroner, which had a self-reinforcing effect on the exchange rate. The implied probability that the krone rate will exceed the strong margin has fallen notably since Mario Draghi's speech in July 2012.

OPTION-IMPLIED PROBABILITY THAT THE KRONE WILL EXCEED THE STRONG MARGIN IN ERM 2 Chart 3



Note: Calculated on the basis of implied volatilities for 1-year options and the 1-year forward price for kroner against euro. The implied volatility is found for options with a strike price close to the strong margin in ERM 2 (delta 25). The vertical lines indicate 1 July 2011 and 26 July 2012, respectively.
Source: Nordea Analytics, Danmarks Nationalbank and own calculations.

CURRENCY FLOWS

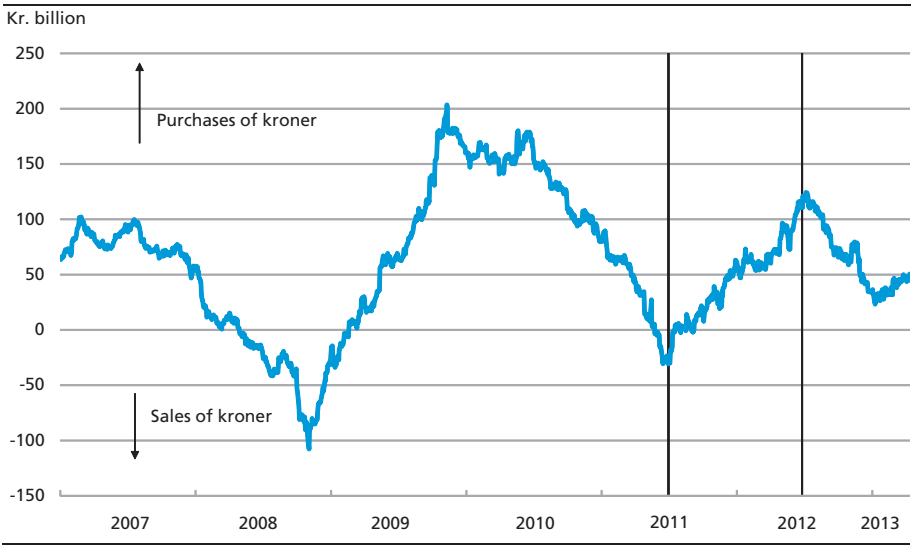
A safe haven is often associated with an inflow of foreign exchange. Statistics of turnover in the foreign-exchange market and the financial account of the balance of payments provide information about foreign exchange flows that has an impact on the krone rate.

Turnover in the foreign-exchange market

On a daily basis, Danmarks Nationalbank collects information about turnover in the foreign-exchange market for Danish kroner, i.e. a num-

BANK CUSTOMERS' PURCHASES AND SALES OF KRONER AGAINST FOREIGN EXCHANGE

Chart 4



Note: Net purchases and sales. Daily data. Bank customers include resident non-banks and non-resident banks and non-banks. The vertical lines indicate 1 July 2011 and 26 July 2012, respectively, which was the period when the euro area sovereign debt crisis intensified.

Source: Danmarks Nationalbank.

ber of banks' purchase and sale of foreign exchange against kroner.[1] These currency flows affect the exchange rate. An overweight of purchase orders for Danish kroner normally causes the krone to strengthen.

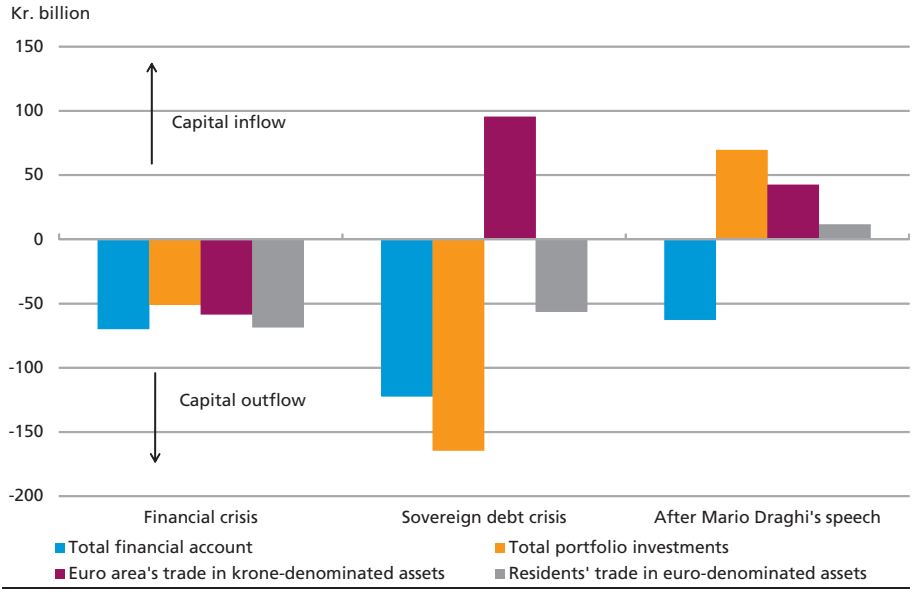
Bank customers' aggregate purchases of kroner increased from the 2nd half of 2011, cf. Chart 4, which is consistent with a tendency for the krone to strengthen when the euro area sovereign debt crisis peaked. This development was to a large extent driven by pension funds, which purchased kroner against euro forward to hedge their investments in euro.

Capital flows

The balance-of-payments statistics provide information about capital flows on a monthly basis. Capital flows lead to bank customers' purchases and sales of kroner against foreign exchange, thereby affecting the krone rate. In the statistics, capital flows are broken down by investment type, e.g. portfolio investments, and currency. This can provide extra information about how currency flows affect the krone rate.

[1] The statistics for foreign-exchange turnover include the banks' spot and forward contracts with customers and other currency dealers. In connection with foreign-exchange turnover, the trade time of the transaction is applied. Capital flows on the basis of balance-of-payments statistics, transactions are included at the time of payment.

NET CAPITAL INFLOWS AND OUTFLOWS DURING THE FINANCIAL CRISIS, THE SOVEREIGN DEBT CRISIS, AND AFTER THE SOVEREIGN DEBT CRISIS Chart 5



Note: "Total financial account" denotes the total financial items of the balance of payments excluding Danmarks Nationalbank. "Financial crisis" is the period from August 2007 to December 2008. "Sovereign debt crisis" is the period from July 2011 to July 2012. "After Mario Draghi's speech" is the period from August 2012 to February 2013.
Source: Danmarks Nationalbank.

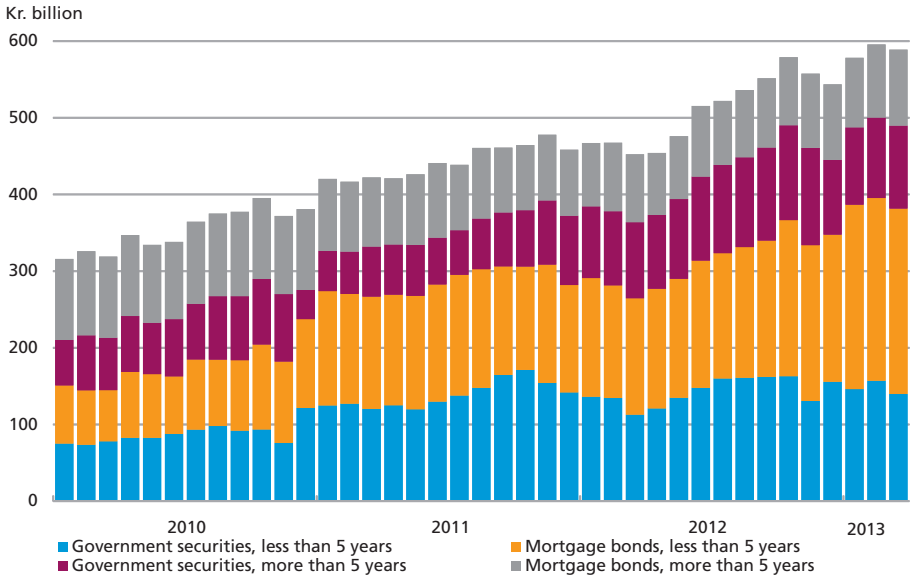
Overall, the financial account of the balance of payments indicates an aggregate net outflow of capital from Denmark in the period from the 2nd half of 2011 until Draghi's statement in July 2012, cf. Chart 5. This reflects the current-account surplus.

Previous empirical studies have shown that portfolio investments normally have the strongest effect on the exchange rate of the krone, cf. Hansen and Storgaard (2005) and Abildgren (2007). Portfolio investments only affect the krone rate if investors do not hedge the exchange-rate risk.[1] The fixed-exchange rate policy could mean that Danish investors hedge the exchange-rate risk to a lesser extent when purchasing euro-denominated assets than when purchasing assets denominated in other currencies, while investors from the euro area hedge purchases of krone-denominated assets to a lesser extent than investors from the rest of the world. During the sovereign debt crisis in the euro area, domestic residents may have had an increased need to hedge euro exposures, while investors from the euro area may have had a reduced need to hedge investments in krone-denominated assets.

[1] Cf. Danmarks Nationalbank (2009), p. 73.

FOREIGN INVESTORS' HOLDINGS OF GOVERNMENT SECURITIES AND MORTGAGE BONDS IN DANISH KRONER, BROKEN DOWN BY REMAINING MATURITY

Chart 6



Note: Nominal values. Government securities, less than 5 years include T-bills.
Source: Danmarks Nationalbank.

During the sovereign debt crisis, Danish government securities and mortgage bonds were in strong demand, and foreign investors' holdings increased, cf. Chart 6. Particularly investors from the euro area increased their holdings of krone-denominated bonds. This may have contributed to the strengthening of the krone. On the other hand, Danish residents, particularly pension funds, increased their holdings of euro-denominated issues. But the resultant impact on the krone may have been smaller than usual due to increased exchange-rate hedging.

Overall, portfolio investments led to net capital outflows. Besides domestic residents' purchases of euro-denominated assets, this was to a large extent because Danish banks reduced their financing via dollar issues substantially. At the same time, the banks increased other types of foreign borrowing, which led to capital inflows. Hence, the aggregate impact on the krone rate from borrowing by banks may have been limited.

Foreign investor ownership of Danish bonds has increased in recent years. The number of AAA-rated countries has decreased, which has reduced the supply of high-rated debt securities. Increased uncertainty has boosted demand for government securities with high ratings. Danish government securities have the highest possible credit rating and have therefore been attractive as a safe haven, cf. Danmarks Nationalbank

FOREIGN INVESTORS' DEMAND FOR DANISH SHORT-TERM SECURITIES — Box 3

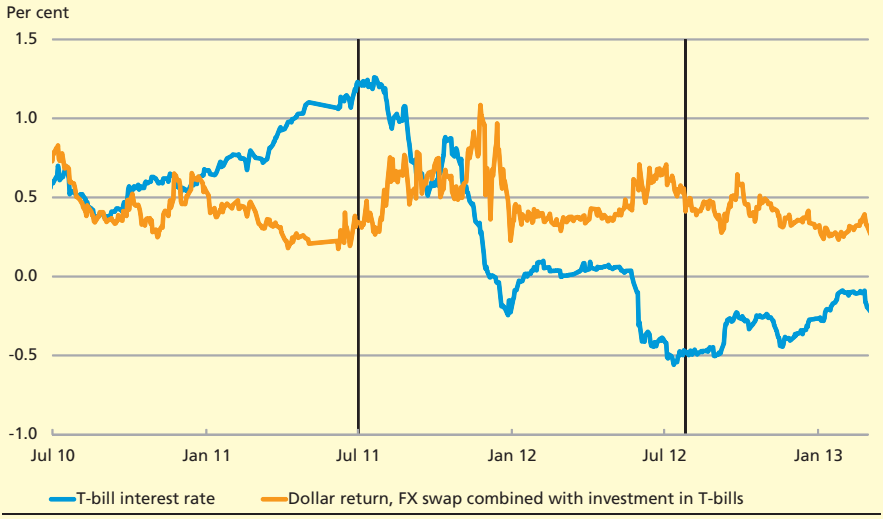
One of the explanations for the pronounced increase in foreign investors' holdings of Danish short-term government securities and mortgage bonds can be found in the FX swap market for dollars against a number of currencies, including the krone, cf. Mindested et al. (2012). US money-market funds reduced their lending to non-US banks markedly, and consequently the latter increased their demand for dollar funding via other channels, including FX swaps. This increased the price of dollars via FX swaps.

Hence, investors with access to dollars could achieve high returns by lending dollars in FX swaps against Danish kroner. The kroner received in such swaps were invested in e.g. T-bills (or short-term government securities or mortgage bonds or deposits at Danish banks), which contributed to reducing the rate of interest on T-bills, cf. Chart 7.

The dollar return achievable by investors with access to dollar funding from concluding FX swaps and investing in Danish T-bills rose markedly from July 2011, which led to increased foreign interest in Danish short-term securities. The same tendency, albeit to a lesser extent, was seen for FX swaps between euro and kroner.

These transactions were not aimed at hedging financial risk, but rather at reaping the excess return achievable by investors with access to dollars and the opportunity to conclude FX swaps. So this was not a safe haven effect. All the same, the high rating of the Danish economy supported interest in these transactions relative to lower-rated alternatives.

RATE OF INTEREST ON T-BILLS AND DOLLAR RETURN WHEN COMBINING FX SWAPS WITH T-BILL INVESTMENTS — Chart 7



Note: 3-month FX swap between dollars and kroner and 3-month T-bill interest rate. The T-bill interest rate has been estimated by means of interpolation of the rates of interest on outstanding T-bills.
The vertical lines indicate 1 July 2011 and 26 July 2012, respectively.
Source: Danmarks Nationalbank and Nordea Analytics.

(2013) and Abildgren et al. (2013). The safe haven status has primarily applied to Danish government securities, and the long-term government yield spread between Denmark and Germany has narrowed and even been negative at times. The same tendency, albeit to a lesser extent, has been observed for Danish mortgage bonds. However, foreign investors' increased holdings of short-term Danish issues is to a large extent related to the FX swap market, cf. Box 3.

IMPACT OF THE SAFE HAVEN STATUS ON THE EXCHANGE RATE OF THE KRONE AGAINST THE EURO

The correlation between the VIX and the exchange rate of the krone against the euro is a simple indicator of whether the krone has been a safe haven. When the sovereign debt crisis in some euro area member states intensified, the VIX rose and the krone strengthened against the euro, cf. Chart 8.[1]

The correlation analysis does not take into account that the exchange rate of the krone against the euro is affected by a large number of other factors besides market uncertainty expressed by e.g. the VIX. To examine whether uncertainty affects the krone when other factors – such as the interest-rate spread to the euro area, Danmarks Nationalbank's intervention in the foreign-exchange market and currency flows – are taken into account, the development in the krone rate is examined in a regression model. If the parameter for the VIX is statistically significant and shows that the exchange rate strengthens when risk increases, this is taken as an indication that the currency is a safe haven.

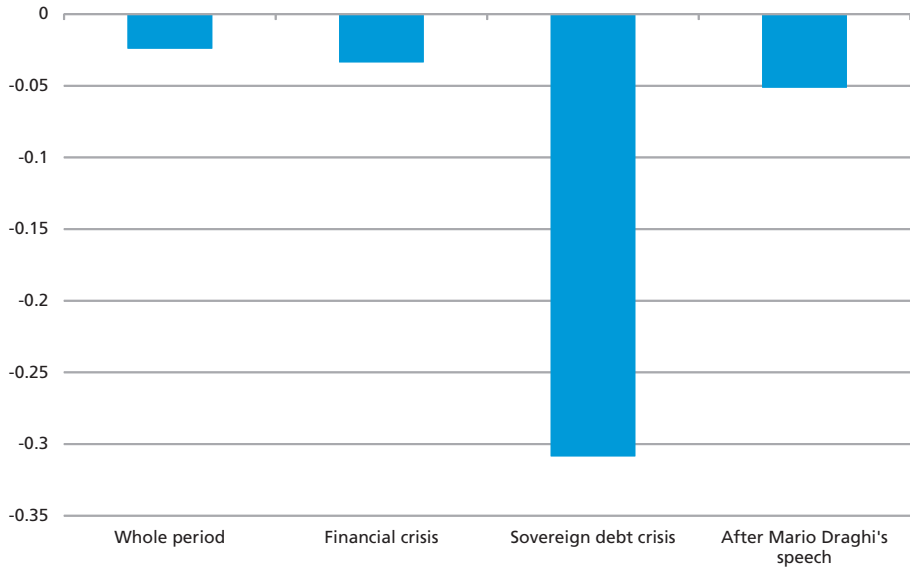
Grisse and Nitschka (2013) find that the coefficient on the VIX is significant in regressions explaining the exchange rate of the Swiss franc. Ranaldo and Söderlind (2009) also set up a model in which the exchange rate against the dollar depends on various risk factors, including exchange-rate volatility and the VIX. On the basis of daily data, they find that the VIX is not significant in determining exchange rates, whereas exchange-rate volatility is. Exchange-rate volatility can be measured in several ways. In most cases, realised volatilities are applied.[2] Alternative measures of exchange-rate volatility yield similar results, e.g. the JP Mor-

1 The financial crisis spans the period from 9 August 2007 to 31 December 2008. If the period is narrowed down so that it starts with the collapse of Lehman Brothers on 15 September 2008, the correlation between the krone rate and the VIX is positive.

2 The realised exchange-rate volatility on a given day is calculated as the sum of the squared changes in the exchange rate within the day at 5-minute intervals. For a given exchange rate against the dollar, the average of the realised volatilities of other exchange rates against the dollar is included as an explanatory variable. More specifically, the first principal component of the realised volatilities for other currencies is included, but a simple average provides similar results, as the first principal component explains 70 per cent of the variation.

CORRELATION BETWEEN THE VIX AND THE EXCHANGE RATE OF THE KRONE AGAINST THE EURO

Chart 8



Note: Weekly data. Correlation coefficient for weekly changes in the exchange rate of the krone against the euro (kroner per euro) and weekly changes in the VIX. A negative correlation coefficient means that the krone strengthens against the euro when the VIX rises. "Whole period" is the period from the beginning of 1999 until 27 March 2013. "Financial crisis" is the period from 10 August 2007 to 23 December 2008. "Sovereign debt crisis" is the period from 1 July 2011 to 20 July 2012. "After Mario Draghi's speech" is the period from 27 July 2012 to 27 March 2013.

Source: Bloomberg and Danmarks Nationalbank.

gan G7 Volatility Index, which weights implied exchange-rate volatility for currency options on the G7 currencies. Therefore estimations are also performed on the basis of this index instead of the VIX.

Estimations of the explanatory variables' coefficients based on the entire estimation period and of the change in coefficients based on the period when the euro area sovereign debt crisis peaked are performed. In addition, the changes in the coefficients in the period after Mario Draghi's statements in late July 2012 and during the financial crisis are estimated. See Box 4 for a more detailed description of the regression model.

Results

As expected, the estimates of coefficients for the entire period show that a wider Danish interest-rate spread to the euro area, customer purchases of kroner and Danmarks Nationalbank's intervention to purchase kroner against foreign exchange strengthen the krone against the euro, cf. Table 1. The coefficient on bank customers' purchases of kroner against foreign exchange shows that purchases for kr. 10 billion cause the

A MODEL FOR THE DEVELOPMENT IN THE KRONE RATE Box 4

Initially, a model based on weekly data using the ordinary least squares (OLS) method is estimated. The estimated model can be summarised as the following equation:

Δ(DKK/EUR) =

β_0 + $\beta_1\Delta$(Interest-rate spread(-1)) + β_2Intervention(-1) + β_3(Customers' purchases of kroner against foreign exchange) + $\beta_5\Delta$VIX + $\beta_6\Delta$(USD/EUR) +
$B_{D,0}$D + $\beta_{D,1}$D*Δ(Interest-rate spread(-1)) + $\beta_{D,2}$D*Intervention(-1) + $\beta_{D,3}$D*(Customers' purchases of kroner against foreign exchange) + $\beta_{D,5}$D*ΔVIX + $\beta_{D,6}$D*Δ(USD/EUR) + ε

Δ indicates weekly changes in the variable in question, i.e. the value on the last day of the week less the value on the last day of the previous week.

DKK/EUR is the exchange rate of the krone against the euro stated as kroner per euro. An increase means that the krone has weakened against the euro. The change in the krone rate is the percentage change.

Interest-rate spread is the spread between collateralised 3-month money-market interest rates in Denmark and the euro area. In studies of the exchange rate of the krone against the euro it should be taken into account that, due to the fixed-exchange-rate policy, Danmarks Nationalbank's interest rates, and hence the interest-rate spread between Denmark and the euro area, depend on the development in the krone rate. Technically, this can be solved by applying the interest-rate spread for the preceding period. A wider interest-rate spread is expected to strengthen the krone, i.e. the expected sign is negative. The change is stated as the change of level in percentage points.

Intervention is Danmarks Nationalbank's purchases of kroner against foreign exchange in billion kroner within a week. Like the interest-rate spread, Danmarks Nationalbank's intervention depends on the krone rate and therefore it is not exogenous relative to the krone rate. So the preceding week's intervention is included in the estimations (lagged value). Intervention to purchase kroner is expected to strengthen the krone, i.e. the expected sign is negative.

Customers' purchases of kroner against foreign exchange are bank customers' net purchases of kroner against foreign exchange within a week. Customers are residents who are not banks and non-residents (both banks and non-banks). The price of foreign exchange is expected to fall, i.e. the krone is expected to strengthen, when currency dealers buy foreign exchange. Consequently, the expected sign is negative.

VIX is included as the percentage change. If the krone hedges increased risk, it strengthens when the VIX increases, i.e. the sign is negative.

USD/EUR is the exchange rate of the dollar stated as dollars per euro, and the change is the percentage change. This factor can be seen as an expression of the exchange-rate risk linked to the krone beyond fluctuations relative to the euro. Bernhardsen and Røisland (2000) have a similar explanatory variable in their estimation of the development in the exchange rate of the Norwegian krone. Grisse and Nitschka (2013) include the average exchange rate of the Swiss franc vis-à-vis other currencies than the euro as an explanatory variable in a regression of the exchange rate of the franc against the euro. The average exchange rate is seen as a currency-specific risk factor for the Swiss franc. The regression results for the exchange

CONTINUED Box 4

rate of the Danish krone against the euro are more or less unchanged if the exchange rate of the krone against the dollar or the effective krone rate exclusive of euro is applied instead of the exchange rate of the euro against the dollar.

D is a dummy variable that assumes the value 1 on days in selected periods and zero on other days. The coefficients of these dummy variables indicate the change in the explanatory variables in the period in question.

Newey-West standard errors are used in connection with parameter estimates to allow for autocorrelation and heteroskedasticity in the residuals. Data covers the period from the introduction of the euro at the beginning of 1999 until March 2013.

Robustness check

A robustness check has been performed by replacing the VIX by the JP Morgan G7 Volatility Index in the estimations. The results are similar to those achieved with the VIX.

The coefficient on the VIX is not significant if the crisis period is extended to begin in May 2010, when a serious crisis erupted in the market for Greek government securities and spread to other European countries. This also applies if the period after Draghi's speech in late July 2012 is included in the sovereign debt crisis period.

An equivalent analysis can be performed for monthly data that also includes data for portfolio investments. If the estimation in Table 1 is performed for monthly data, there is also a tendency during the debt crisis for the krone to strengthen more than otherwise when the VIX increases, but the dummy coefficient on the VIX is not statistically significant. If portfolio investment data is used instead of currency dealers' purchases of foreign exchange, a statistically significant change in the coefficient on the VIX is generally seen during the sovereign debt crisis.

Data for the VIX and the krone rate are calculated at different times of the day. The krone rate is calculated at 2:15 pm and the VIX later, when the US market closes. Data for the same day is used for the krone rate and the VIX. This means that events relating to e.g. the sovereign debt crisis which have come to the knowledge of market participants during the week before the calculation of the krone rate on the last day of the week may affect the VIX. The VIX may also be affected by events later in the day on the last day of the week, which can cause noise in the relation between the krone rate and the VIX. A robustness check is performed by lagging the VIX by one day, i.e. it is implicitly assumed that the VIX affects the krone rate with a lag. In this case, the coefficient on the change in the VIX during the sovereign debt crisis is not significant, but the sign remains negative and of more or less the same size as previously. If the JP Morgan G7 Volatility Index is applied and lagged by one day, the dummy coefficient is still significantly negative.

Finally, instrument-variable estimations have been performed for the entire period, with the inclusion of all values of the interest-rate spread and intervention. The signs are as expected and the coefficients are generally of more or less the same size as in the OLS regressions.

krone to strengthen by 10*0.00193 = 0.0193 per cent, corresponding to kr. 0.14 per 100 euro. The coefficient on the VIX is not significant in the estimation covering the entire period, which indicates that for the period overall the krone has not been a safe haven relative to the euro.

At the peak of the euro area sovereign debt crisis, the coefficient on the VIX is statistically significant. During this period, an increase in the VIX caused the krone to strengthen more than it would otherwise have done. The same applies if the JP Morgan G7 Volatility Index is used instead of the VIX. In other words, heightened market volatility tended to strengthen the krone, even if the impact of e.g. currency flows is taken into account.

According to the estimations, the effect of intervention by Danmarks Nationalbank has increased following Mario Draghi's speech in late July 2012. This could indicate that the signal value of the intervention has increased after Danmarks Nationalbank introduced a negative rate of interest on certificates of deposit.[1] The result should also be viewed in the light of increased confidence in the management of the euro area sovereign debt crisis after Mario Draghi's speech.

[1] The lagged value of the intervention included in the estimation.

ESTIMATION RESULTS FOR THE EFFECT ON CHANGES IN THE KRONE RATE Table 1

	Baseline model	Sovereign debt crisis	After Mario Draghi's speech	Financial crisis
Constant	0.00123	0.00140	0.00100	0.00152
	(0.00117)	(0.00121)	(0.00122)	(0.00120)
Interest-rate spread (-1)	-0.05064**	-0.05227**	-0.05094**	-0.03276
	(0.02282)	(0.02317)	(0.02299)	(0.02327)
VIX	-0.00004	-0.00001	-0.00004	0.00002
	(0.00013)	(0.00014)	(0.00014)	(0.00014)
USD/EUR (dollars per euro)	0.00299***	0.00307***	0.00280***	0.00301***
	(0.00094)	(0.00099)	(0.00097)	(0.00099)
Customers' purchases of kroner against foreign currency	-0.00193***	-0.00191***	-0.00187***	-0.00214***
	(0.00044)	(0.00048)	(0.00045)	(0.00044)
Intervention purchase of kroner by Danmarks Nationalbank to (-1)	-0.00108**	-0.00112**	-0.00107**	-0.00071*
	(0.00042)	(0.00049)	(0.00043)	(0.00038)
Change in coefficient				
Constant		-0.00363	0.00470	0.00363
		(0.00433)	(0.00337)	(0.00376)
Interest-rate spread (-1)		0.15337*	0.04845	-0.06034
		(0.08397)	(0.09581)	(0.04140)
VIX		-0.00058*	0.00005	-0.00045
		(0.00031)	(0.00038)	(0.00034)
USD/EUR (dollars per euro)		-0.00351	0.00721**	-0.00333
		(0.00337)	(0.00291)	(0.00445)
Customers' purchases of kroner against foreign currency		0.00032	-0.00028	0.00115
		(0.00093)	(0.00079)	(0.00133)
Intervention purchase of kroner by Danmarks Nationalbank (-1)		-0.00003	-0.00386***	-0.00093
		(0.00068)	(0.00130)	(0.00106)
Adjusted R^2	0.10	0.10	0.09	0.11

Note: Weekly data from the beginning of 1999 until March 2013. *, **, *** indicate levels of significance of 10, 5 and 1 per cent, respectively. Standard deviations are denoted in parenthesis. "(-1)" after the name of the variable indicates that the variable is lagged by one week. "Baseline model" is the model estimated without dummy variables. "Change in coefficient" shows estimates of the coefficient on Dummy variable*(Explanatory variable) in the periods selected: "Sovereign debt crisis" (1 July 2011 – 20 July 2012), "After Mario Draghi's speech" (27 July 2012 – 27 March 2013) and "Financial crisis" (10 August 2007 – 23 December 2008). The explanatory variable is weekly changes in the exchange rate of the krone against the euro (kroner per euro) in per cent. An increase in the krone rate indicates weakening of the krone. For a more detailed explanation, see Box 4.

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Imbalances in the Euro Area

Jacob Isaksen and Søren Vester Sørensen, Economics

INTRODUCTION AND SUMMARY

The global economic crisis and the ensuing sovereign debt crisis in a number of euro area member states have highlighted the problems relating to external imbalances. Persistent current account deficits may lead to the build-up of unsustainable debt positions and uncertainty about a country's creditworthiness. Accordingly, large negative imbalances will translate into increased economic and financial risks. The strengthening of European economic governance in the wake of the crisis has brought external imbalances into sharper focus, e.g. through increased monitoring of macroeconomic imbalances.

In recent years, the euro area has been running a substantial current account surplus of close to 2 per cent of the gross domestic product, GDP. Much of the improvement is attributable to current account deficit reductions by the GIIPS countries (Greece, Ireland, Italy, Portugal and Spain). This should be seen in the context of the trend in the countries' domestic demand, which was considerably above the under level (overheating) in 2008 and is currently somewhat below the underlying level. In other words, cyclical normalisation after the overheating has driven part of the current account improvement, while the currently weak domestic demand has contributed further to the strengthening of the current account. Moreover, cyclical adjustment of the current account shows that part of the development is attributable also to structural improvements. This is underpinned by the fact that Ireland, Portugal and Spain have gained export market shares and by the improvement in the GIIPS countries' unit labour costs relative to those of their competitors.

In Greece, Ireland, Portugal and Spain, large external debts pose substantial economic and financial risks. Despite the recent improvement in the countries' current accounts, further current account improvements are still needed to reduce debt to sustainable levels. A sustainable current account adjustment will require structural economic reforms and continued restraint in domestic demand. However, struc-

tural reforms already implemented could conceivably lead to further gradual improvements in current accounts in the coming years.

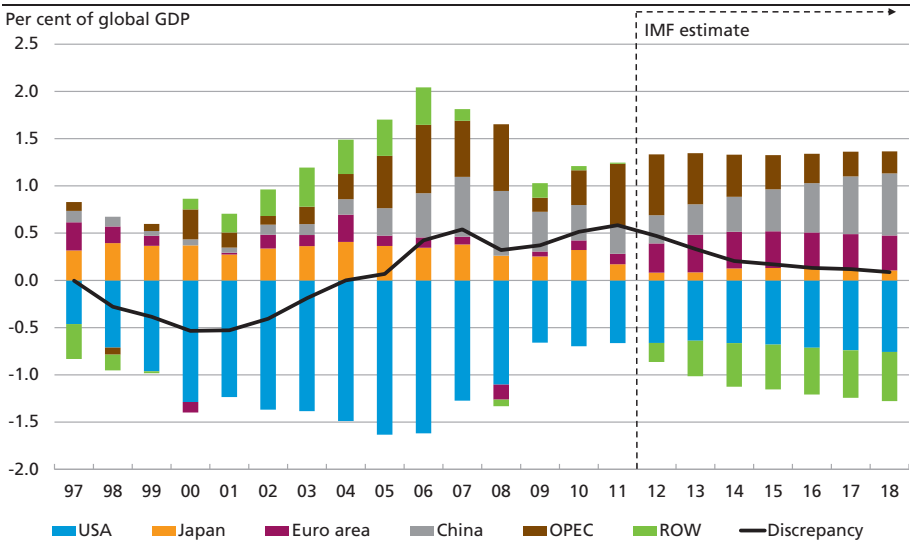
GLOBAL IMBALANCES

In the decade leading up to the global economic crisis, substantial current account imbalances were built up globally, cf. Chart 1. In the USA, the current account deficit grew, driven by large government deficits and strong growth in domestic demand, reflecting, inter alia, lenient credit standards and a booming housing market.

The counterpart of the US deficit was increasing current account surpluses in export-oriented Asian economies, led by China, and in the oil-producing countries. Accordingly, the growth in imbalances may be attributed, in part, to rising oil prices. The current account of the euro area overall was roughly in balance, albeit with growing internal imbalances. In this period, a number of northern non-euro area member states also recorded growing surpluses, including Norway, Sweden, Switzerland and Denmark, while the UK was facing a rising deficit.

During the crisis, global imbalances were shrinking, but in recent years, they have widened slightly due to rising oil prices, among other factors. Recent estimates by the International Monetary Fund, IMF,

GLOBAL IMBALANCES Chart 1



Note: The Chart shows the balance of the countries'/areas' current accounts. For most of the advanced economies, estimates from 2012 onwards are used. Discrepancy represents the difference between surplus and deficit and arises because the imports and exports of the world's countries do not offset each other due to differences in calculation methods.

Source: IMF, *World Economic Outlook*, April 2013.

indicate that global imbalances will be maintained around the current levels. The US deficit is believed to be largely stable, since the expected reduction of the government budget deficit is estimated to be offset by a fall in the private-sector savings surplus. Another factor impacting the US current account in these years is the growing domestic energy production, which, viewed in isolation, serves to reduce energy imports. Part of the narrowing of China's current account surplus over recent years is believed to be cyclical in nature, since China's trading partners have been going through a period of low demand. Therefore, the surplus is expected to rise as the economic outlook in its export markets improves. Moreover, no major structural changes have occurred to reduce the very high household savings ratio.

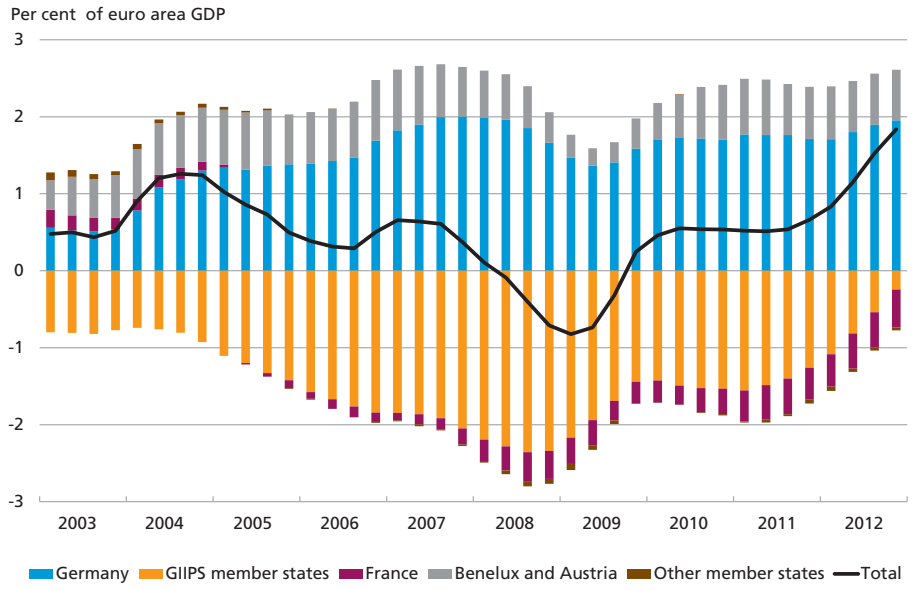
Global imbalances heighten the risk of sudden and abrupt adjustments in exchange rates and capital flows. In order to enhance the stability of the international economy, a number of structural adjustments are required to reduce imbalances. The US needs reforms to improve long-term fiscal sustainability and reduce government debt. An improvement in the government savings balance would help to further reduce the current account deficit. The Chinese challenge is to make growth less dependent on exports, e.g. by reducing the incentive of households and state-owned enterprises to save. This could, for instance, be achieved through strengthening of the services sector and the social safety net and through pension reforms.

EURO AREA IMBALANCES

The current account of the euro area overall was hovering around 0-1 per cent of total euro area GDP in the pre-crisis years and thus almost balanced, cf. Chart 2. But the moderate fluctuations masked considerable variations between euro area member states.

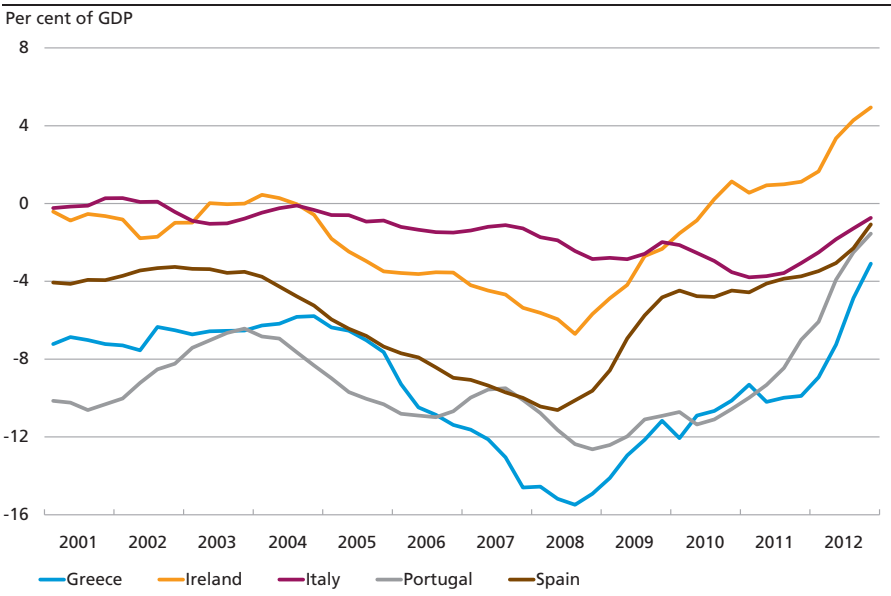
Taken together, the GIIPS countries were experiencing rising current account deficits in the run-up to the crisis, while the surplus countries (Germany, Austria and the Benelux countries) overall were running increasing surpluses. France had a moderate, albeit growing current account deficit. This trend reversed in 2008, and the euro area imbalances diminished throughout 2008-09, driven by falling surpluses in the surplus countries and declining deficits in the GIIPS countries. Since 2009, the current account balances in the surplus countries have reverted to pre-crisis levels, while the deficits in the GIIPS countries declined further in the period 2011-12. Consequently, the euro area recorded a current account surplus of almost 2 per cent of GDP at end-2012, representing an improvement of approximately 2.5 per cent of

CURRENT ACCOUNT, EURO AREA AND COUNTRY GROUPINGS — Chart 2



Note: 4-quarter moving sums.
Source: Eurostat.

CURRENT ACCOUNT, GIIPS COUNTRIES — Chart 3



Note: 4-quarter moving sums.
Source: Eurostat.

GDP since the trough in early 2009. A gradual reduction of the surplus would require a reduction in northern European surpluses.

The individual GIIPS countries all recorded increasing current account deficits until 2008, cf. Chart 3. Rising government deficits contributed to growing current account deficits in Greece, Italy and Portugal. In Greece, Ireland and Spain, more pronounced household borrowing also contributed to increasing deficits, while Italy's household savings surplus declined. Extensive borrowing by non-financial corporations was also a key factor in developments in Portugal and Spain.

Since the outbreak of the crisis, the GIIPS countries have seen strong improvements in their current account balances, and at end-2012, Ireland was running a large surplus. A common development in the GIIPS countries is that their firms have reduced investment and increased savings. Households in Ireland and Portugal have also increased savings. In Greece, household savings have declined, which should be seen in light of the substantial decrease in income.

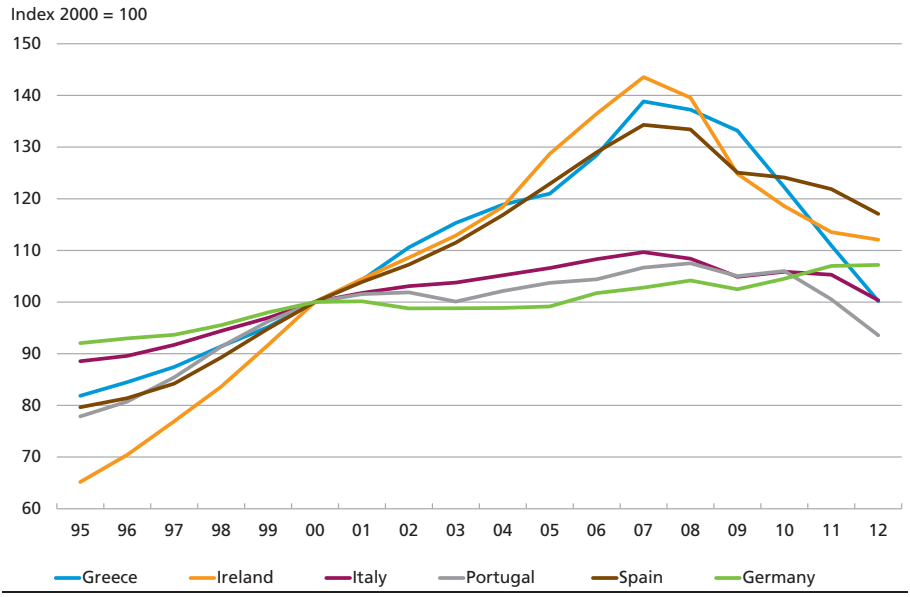
IMPACT OF CYCLICAL FACTORS ON THE CURRENT ACCOUNT

The cyclical positions of a country and its trading partners have a marked impact on the current account balance. Unsustainable booms in domestic demand, driven e.g. by house price bubbles or expansionary fiscal policy, will have an adverse effect on the country's current account through increased imports. Moreover, such booms will damage the country's competitiveness by putting pressure on wages and prices, which, in turn, will reduce exports. A similar pattern for a country's trading partners may have the opposite effect on the current account.

As already mentioned, the current account deficits in Greece, Ireland and Spain increased substantially until 2008, followed by a reversal. In Portugal and Italy, the reversal was delayed principally due to different patterns in the countries' domestic demand. During the period 2000-07, domestic demand in Greece, Ireland and Spain surged by more than 30 per cent, while growth in Italy and Portugal was more in line with that of Germany, cf. Chart 4. Part of this difference reflected structural conditions. Since 2007, domestic demand has been contracting sharply in Greece, Ireland and Spain, while it only began to decline in Italy and Portugal from 2010.

Over the past decade, developments in the current accounts of Greece, Italy, Portugal and Spain have been driven primarily by the trade balance. Thanks to a much improved position in recent years, several of the countries are now recording a small trade surplus, cf. Chart 5 (left). All of the countries are running a deficit on their investment income bal-

DOMESTIC DEMAND, VOLUME Chart 4



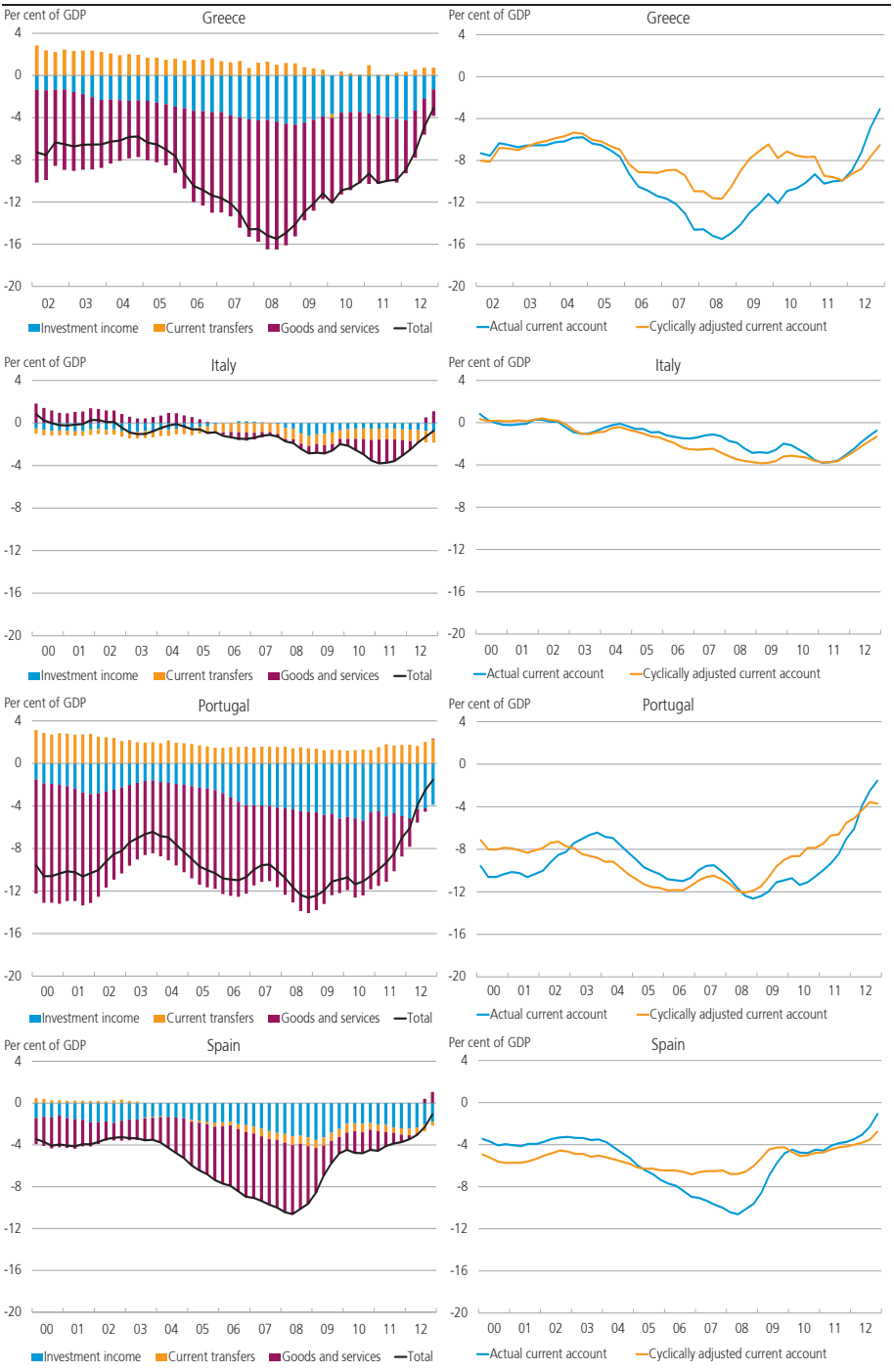
Note: Domestic demand comprises both private and public consumption and investment.
Source: Europa Commission AMECO database.

ances, and Portugal and Greece are the only countries to have a surplus on their current transfer balances. Since the early 2000s, the current transfer balances in all of the countries have deteriorated.

The reduction in the current account deficits of the GIIPS countries may be driven both by cyclical and underlying factors. Underlying factors could be e.g. lasting competitive advantages and/or increases in export market shares. In order to decompose the current account into cyclical and underlying factors, the current account has to be adjusted for the impact of cyclical developments[1], cf. Box 1. Cyclical developments are driven primarily by domestic demand and demand from trading partners. They may be decomposed into a component reflecting normalisation of domestic demand from a high pre-crisis level to a more natural level and a component derived from the further weakening of domestic demand currently seen in several GIIPS countries relative to their trading partners. The improvement of the current account attributable to the latter factor will not necessarily have a lasting impact, but could be reversed once domestic demand in the GIIPS mem-

[1] It should be emphasised that cyclical adjustment of the current account is not the same as estimation of a structural current account and thus does not necessarily correspond to a structural current account. An estimated structural current account will seek to allow for developments in a number of underlying factors such as demographics, tax structure, the size of the public sector, financial liberalisation – all of which influence the savings level and competitiveness of a country, cf. IMF (2006).

CURRENT ACCOUNT SUBCOMPONENTS (LEFT).
CURRENT ACCOUNT, CYCLICALLY ADJUSTED AND ACTUAL (RIGHT) Chart 5



Source: Own calculations, Reuters EcoWin, Eurostat, OECD, IMF, European Commission AMECO database.

CYCLICAL ADJUSTMENT OF THE CURRENT ACCOUNT — Box 1

The current account of the balance of payments can be decomposed into the balances of goods and services, investment income and current transfers. Developments in the balance of goods and services depend on domestic and external economic factors, while investment income depends, *inter alia*, on the level of interest rates. Changes in the actual current account that cannot be explained by either domestic or external cyclical fluctuations are regarded as permanent changes, resulting e.g. from structural reforms in a country or lasting competitiveness improvements. In the calculations, current transfers are assumed to be non-cyclical and, accordingly, are regarded as structural.

The adjustment of investment income for interest rate fluctuations has been effected by assuming a constant interest rate on gross external debt and gross external assets equivalent to the 2000-08 average. In the case of Greece, we have allowed a declining interest rate level throughout 2012 on account of the country's debt restructuring agreements with international organisations. These agreements are expected to be permanent in nature. In Ireland's case, the adjustment is not effected due to this country's position as a destination for direct investment, entailing that a calculation of the implied return on assets and liabilities fails to provide a meaningful picture.

Country *i*'s trade balance, *HB*, is cyclically adjusted by adjusting for cyclical factors in the real effective exchange rate and in domestic and external demand based on the following formula (Bayoumi and Faruqee (1998)):

$$\left(\frac{HB}{Y}\right)_{i,t}^{KR} = \left(\frac{HB}{Y}\right)_{i,t} + 1{,}5 \cdot \left(\frac{M}{Y}\right)_{i,t} \cdot GAB_{i,t}^{IND} - 1{,}5 \cdot \left(\frac{X}{Y}\right)_{i,t} \cdot GAB_{i,t}^{UD} + \beta KK_{i,t}, \qquad (1)$$

where *Y* is nominal GDP, *M* is imports in value, *X* is exports in value. GAB^{IND} is log to the relationship between actual domestic demand and an underlying development. The underlying development is calculated using a band-pass filter (Christiano and Fitzgerald (2003)). This method allows for the fact that the growth potential may be affected by the crisis. GAB^{UD} is trade-weighted demand gaps in country *i*'s export market. *KK* is a measure of competitiveness defined as the deviation between the country's real effective exchange rate and its underlying level. β is a vector determining the impact of competitiveness on import and export volumes and on the import price. Country *i* is each of the 17 euro area member states, while *t* is quarterly, running from the 1st quarter of 2000 to the 4th quarter of 2012 for most countries.

Domestic demand consists of private and public consumption and investment. This gap is used rather than alternatives such as the output gap, since it has a more direct impact on the trade balance. Based on historical links, Bayoumi and Faruqee (1998) assume that activity elasticities for imports and exports are both 1.5 for all countries[1]. This implies that imports increase by med 1.5 per cent when domestic demand rises by 1 per cent. However, the impact of demand gaps on the trade balance is scaled down by imports and exports as a ratio of GDP[2].

It should be noted that our cyclical adjustment is subject to uncertainty. One reason, among others, is that we apply a number of identical assumptions across countries and thus do not allow for any country-specific circumstances. Moreover, the method used for filtering domestic demand may be overestimating cyclical factors.

[1] Goldstein and Kahn (1985) find that these elasticities vary between 1 and 2 for imports and exports.

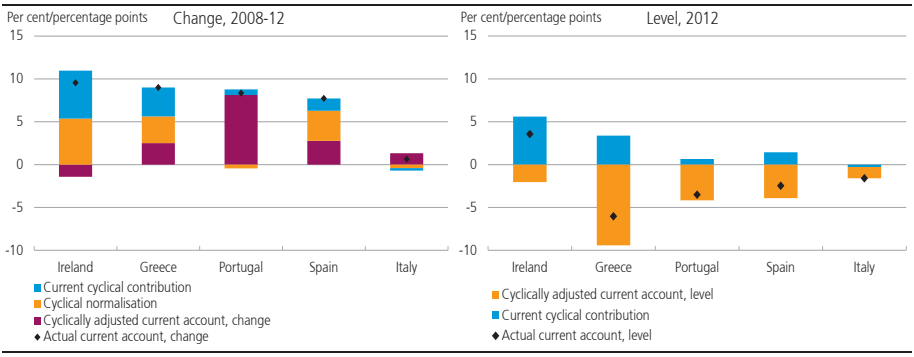
[2] In the case of Ireland, the effect is scaled down further, since the import and export shares are adjusted for re-exports.

ber states normalises. Moreover, there has been an adjustment in the underlying level following the implementation of widespread structural reforms. But the underlying balance may improve further in the coming years, reflecting gradual pass-through of structural reforms already implemented. The method applied cannot take this into account, so it could be underestimating the ongoing structural improvement.

In the years leading up to the crisis, Greece, Portugal and Spain were recording large, persistent deficits on their cyclically adjusted current accounts, cf. Chart 5 (right). During the same period, Italy moved from balance to deficit. After the crisis, these countries have improved their cyclically adjusted current account positions, although Portugal and Spain still have a deficit of about 4 per cent of GDP, while the Greek deficit is almost 8 per cent of GDP. Italy's current account is largely in balance.

Since 2008, actual current accounts in Greece, Ireland, Portugal and Spain have improved by about 8-9 per cent of GDP, while the improvement in Italy is only around 1 per cent of GDP, cf. Chart 6 (left). In Greece, Ireland and Spain, most of the improvement is attributable to cyclical factors, the normalisation of their domestic economic situation being of greater significance to the current account development than the current economic downturn. In Portugal, the improvement in the underlying trade balance has been the primary driver of the current account improvement. This tallies with the fact that, unlike Greece, Ireland and Spain, Portugal did not see strong domestic demand growth in the run-up to the crisis.

GIIPS COUNTRIES' CURRENT ACCOUNTS, DECOMPOSITION OF DEVELOPMENTS FROM 2008 TO 2012 (LEFT), 2012 LEVEL (RIGHT) Chart 6



Note: In the left-hand Chart, current account developments during the period 2008-12 have been decomposed into three contributions: 1) Cyclical normalisation – i.e. adjustment since 2008 of overheated domestic demand (relative to foreign domestic demand) down to the underlying level. 2) The current recession which implies that current domestic demand (relative to foreign domestic demand) is lower than the underlying level. 3) The change in the cyclically adjusted current account since 2008. In the right-hand Chart, the current account level for 2012 has been decomposed into two contributions: A) The current recession (which is identical to the contribution of the left-hand Chart). B) The level of the cyclically adjusted current account.

Source: Own calculations, Reuters EcoWin, Eurostat, OECD, IMF, European Commission AMECO database.

In Greece, Ireland, Portugal and Spain, the current cyclical situation entails that the actual current account is higher than the cyclically adjusted current account, cf. Chart 6 (right). This should be seen in the context e.g. of a decline in corporate investment ratios. A return to a more normal cyclical pattern could therefore lead to weakening of the current account, although this effect is expected to be limited in Italy, Portugal and Spain.

UNDERLYING ADJUSTMENT IN THE EURO AREA

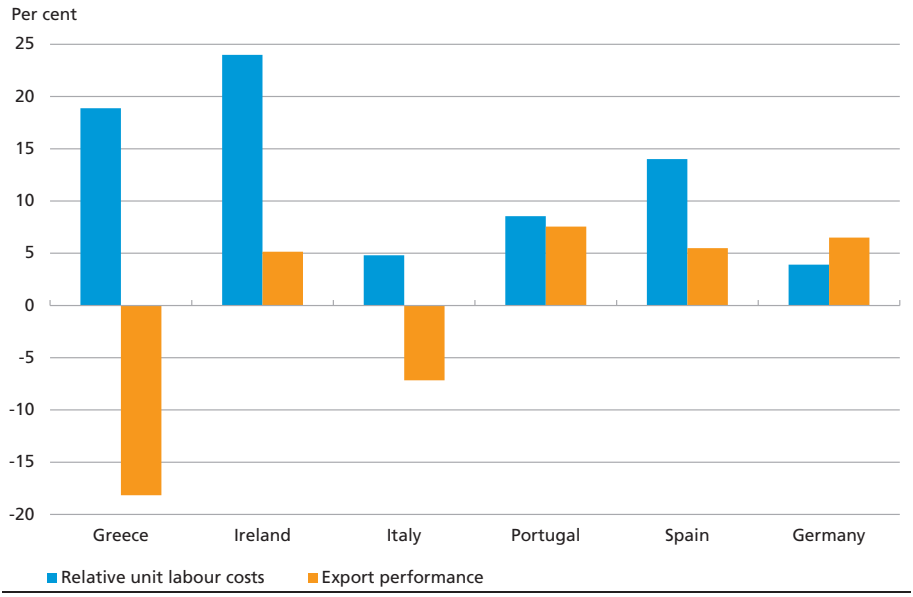
The cyclical adjustment of the current account shows that some of the current account deficit reductions of the GIIPS countries in recent years are attributable neither to domestic nor external demand. In other words, part of the adjustment is structural in nature, e.g. due to improved competitiveness. For the euro area member states, this is achieved by having lower rates of increase in a country's prices and wages than those of its competitors, or by improving the country's productivity relative to its competitors.

Developments in relative unit labour costs indicate that GIIPS competitiveness has improved since 2008, cf. Chart 7. In Ireland, Portugal and Spain, growth in hourly productivity, in particular, has boosted competitiveness. In Greece, competitiveness has deteriorated markedly, although unemployment has more than tripled since 2008. However, part of the development in relative unit labour costs may be driven by cyclical factors. The reason is that hourly productivity can be improved by increasing the capital-to-labour ratio. Accordingly, cyclical layoffs may temporarily improve the capital-to-labour ratio. On the other hand, more permanent productivity growth requires extra capital or total factor productivity improvement. The latter is achieved through e.g. research and development or through investment in more productive capital goods.

Private-sector hourly wages in Ireland and Portugal have risen less than in Germany since 2008. However, this should be seen in the context that hourly wages in Ireland rose by 50 per cent over the period 2000-08 relative to just 19 per cent in Germany. But the decline in hourly wage increases has yet to pass through to export prices, which have shown a relatively stronger increase in the GIIPS countries than in Germany. Nevertheless, export capabilities in Ireland, Portugal and Spain have improved since the crisis, reflected in export market share gains. Greek exports have weakened sharply – despite a substantial improvement in relative unit labour costs during the period.

The GIIPS countries' current competitiveness adjustment is driven, to a great extent, by retained domestic demand, leading to more pronounced

COMPETITIVENESS INDICATOR, CHANGE OVER THE PERIOD 2008-12 Chart 7



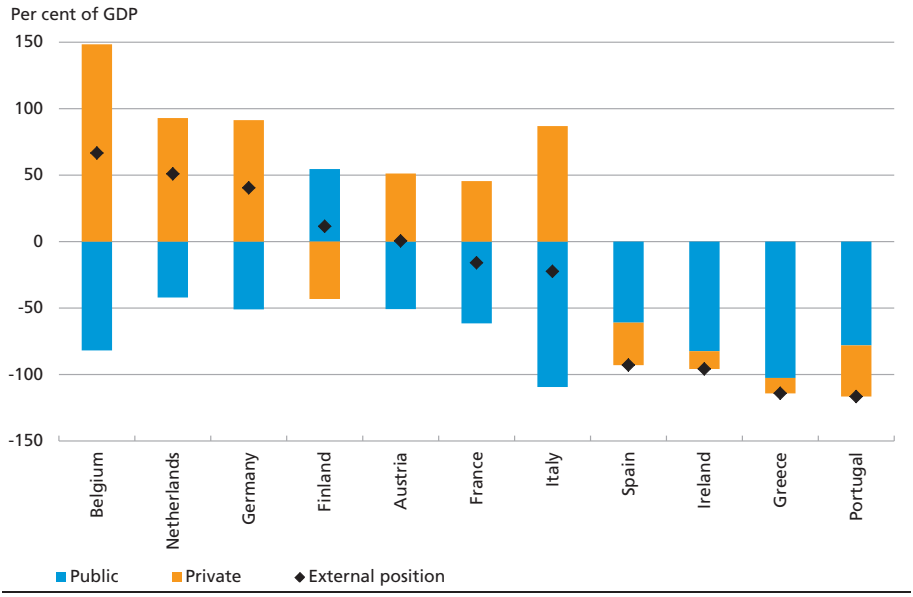
Note: The change is the period from 2008 until the 4th quarter of 2012 with the exception of Greece's export capability, where the change is 2008-11. Relative unit labour costs have been calculated as developments in unit labour costs among competitors relative to developments in the home country. Therefore, an increase represents an improvement in competitiveness for the home country. Export capability has been calculated as the home country's export growth relative to the import growth in the export market. Therefore, an increase indicates that the home country has gained market shares.
Source: Reuters EcoWin, OECD, *Economic Outlook,* No. 92, 2012.

spare capacity in the economy. This is usually reflected in downward adjustment of prices and wages, but stickiness in wage formation and inflexible labour markets could cause this natural adjustment to drag on. However, structural reforms e.g. in the labour market could help to accelerate the adjustment. Moreover, reforms may improve economic efficiency and increase the output potential relative to abroad. Thus the Greek, Irish and Portuguese loan agreements with the euro area member states and the IMF contain requirements for structural reforms in the countries' labour and product markets in order to ensure that the economic adjustment is quick and sustainable. However, it may take some time for the effects of such reforms to be reflected in economic fundamentals.

NEED FOR CURRENT ACCOUNT ADJUSTMENT

In Greece, Ireland, Portugal and Spain, large, persistent current account deficits have resulted in huge external debts of around 100 per cent of GDP, cf. Chart 8. In contrast, northern European surplus countries such as

FINANCIAL NET POSITION 2012, SECTORS Chart 8



Note: The sum of the net positions of the public and private sectors is the country's net external position. A positive net position indicates that the country has external net assets, while a negative net position indicates that the country has external net debt. The most recent observations are from the 4th quarter of 2012, except for France, 4th quarter of 2011, and Italy, 3rd quarter of 2012.
Source: Eurostat.

Germany, the Netherlands and Belgium have accumulated net external assets in the range of 50 per cent of GDP.

Ireland's debt is related also to the surge in government debt resulting from the costs of restructuring the financial sector. In Italy, households have large savings surpluses, which, to some extent, offset public sector indebtedness. Thus Italy is not faced with the same external debt problems as other GIIPS countries, but its large government debt in itself poses a major problem.

Prior to the sovereign debt crisis, the GIIPS countries had no problems financing their ever-increasing external debts at low interest rates. But in the wake of the crisis, sovereign bond yields have risen and private market financing has, to a great extent, been replaced by official sources of financing, since the banks of the GIIPS countries fund themselves using ECB liquidity facilities. Parts of the external debts of Greece, Ireland, Portugal and Spain are even financed by loans from the European Stability Mechanism (ESM), the European Financial Stability Facility (EFSF) and the IMF. Without these sources of financing, these countries would have had to resort to drastic current account adjustments. Therefore, continued high debts compel these countries to re-

INDICATOR OF SUSTAINABILITY OF EXTERNAL DEBT, GIIPS COUNTRIES Table 1

Per cent of GDP	Cyclically adjusted current account	Adjustment needed to stabilise debt	Adjustment needed to reach debt of 30 per cent of GDP after 20 years	IMF medium-term current account forecast
Greece	-6.5	4.8	8.6	1.4
Ireland	0.2	-2.0	1.0	4.0
Italy	-1.3	0.0	-0.3	0.1
Portugal	-3.7	-0.2	3.8	1.1
Spain	-2.8	0.0	2.9	3.6

Note: Italy's external debt currently does not exceed 30 per cent of GDP, and consequently the adjustment at a debt measure of 30 per cent of GDP is less restrictive than stabilisation of the debt. In the calculation of the adjustment need in order to stabilise and reduce debt, respectively, growth assumptions from the OECD's long-term projections from June 2012 have been applied. The real interest rate applied is 1 percentage point higher than the assumed average GDP growth. The adjustment need has been calculated based on the cyclically adjusted trade balance including the transfer balance. The Irish cyclically adjusted trade balance has been adjusted further for the average level of the balance of direct investment. This is necessary, since part of Ireland's large trade surplus is attributable to income flowing out of the country as return on direct investment.

Source: IMF, *World Economic Outlook*, April 2013, OECD, *Economic Outlook,* No. 91, 2012, and own calculations.

duce their current account deficits in order to lower debts to a sustainable level.

Our calculations of the cyclically adjusted level of the current account may be used to assess the degree of current account adjustment needed in order for the individual countries to achieve a given level of external debt. This is effected by comparing the level of the cyclically adjusted trade balance including the transfer balance (the cyclically adjusted primary current account) with a level which, based on assumptions of growth, inflation and interest rates, will lead to stabilisation or reduction of the external debt to a given level[1].

Our calculations show that the external position of all GIIPS countries is sustainable, the only exception being Greece, which needs to improve its cyclically adjusted current account by almost 5 per cent of GDP to stabilise its external debt, cf. Table 1. As the calculation is based on the balance for the 4th quarter of 2012, it does not take into account that reforms already implemented will impact competitiveness and the trade balance in the coming years. Examples include reforms of labour market wage formation and of the regulation of product markets. Other examples are tax and pension reforms, which may also lead to adjustments in savings behaviour in the coming years.

It is doubtful whether stabilisation of the debt is enough, since – at the current debt level – these countries have been unable to obtain sufficient market financing. Thus it is more relevant to look at the ad-

[1] This method is described in detail in IMF (2006).

justment required to reduce external debt to, say, 30 per cent of GDP within 20 years. Under these assumptions, the cyclically adjusted current account in Ireland needs to be improved by about 1 per cent of GDP[1]. Portugal and Spain need improvements of 4 and 3 per cent of GDP, respectively, while the Greek cyclically adjusted current account needs an improvement of almost 9 per cent of GDP. External debt of 30 per cent of GDP still implies that these countries are exposed to interest rate increases. To reduce this risk, they should set a more ambitious target for reducing their external debts, requiring further adjustment.

An alternative measure of the structural current account is the IMF medium-term current account forecast, cf. IMF (2006). The most recent IMF forecast projects current account surpluses and declines in external debt in the medium term. Based on this measure, the external position is sustainable. In this context, it should be mentioned that IMF forecasts allow for gradual effects of structural reforms in the coming years. Such forecasts are subject to considerable uncertainty and based on the assumption e.g. that the structural reform process progresses according to plan over the coming years. Moreover, unforeseen economic shocks may impact the forecasts and, consequently, it is important that agreed reforms are implemented in order to achieve lasting current account improvements and reductions in external debt.

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[1] In the procedure for the prevention and correction of macroeconomic imbalances, which is an element of economic governance in the EU, a threshold for external debt of 35 per cent of GDP is applied.

Foreign Direct investments

Christian Helbo Andersen, Economics, and Bjarke Madsen and Sanne Veje Klausen, Statistics

INTRODUCTION AND SUMMARY

Foreign direct investments, FDI, are the sum of investments in foreign branches and firms in which the investor holds at least 10 per cent of the equity or voting rights. The FDI concept shows part of a country's long-term, cross-border financial flows and is also an indicator of the openness of its economy.

Since 1999, Denmark's outward and inward FDI (measured in Danish kroner) have increased substantially. This trend, which is also observed internationally, is an integral part of globalisation and free capital flows. But over recent years, growth in Denmark's outward FDI has exceeded growth in inward FDI. At end-2012, the value of Denmark's outward FDI was kr. 1,335 billion, which is kr. 488 billion higher than inward FDI.

In Denmark, more people are currently employed by firms in which foreign owners hold more than 50 per cent of the share capital than was the case 15 years ago. In other words, foreign business owners now have a greater impact on the Danish labour market. Through subsidiaries and branches, Danish firms have also become more active abroad and currently employ more than 1,200,000 staff abroad. Accordingly, it may be tempting to conclude that FDI generate employment. However, the interaction between FDI and the economy in which it is made is complex, depending e.g. on the investment purpose and specific alternatives to production in foreign-owned firms. Production in the owner's home country is just one of many alternatives to production abroad for a firm with the same owner, including that the foreign firm would have a different owner, or that production would be undertaken by other firms in the same or other countries. Therefore, caution should be exercised in drawing firm conclusions about potential employment effects of FDI.

However, there is no doubt that overall FDI make a positive contribution to Denmark's gross national income, GNI, by generating substantial returns to Denmark (investment income). In other words, the positive and growing investment income means that Denmark's spending power

exceeds the domestic value creation in terms of the gross domestic product, GDP.

KEY CONCEPTS IN FDI

Foreign Direct Investments, FDI,[1] are financial investments and part of the financial account of the balance of payments. The financial account, the current account and the capital account together constitute Denmark's balance of payments, see Box 1. "Direct" simply means that the investments are cross-border investments (statistical concept). In practice, FDI usually have an equity exposure above 50 per cent (controlling influence). Although an FDI is essentially a financial investment, it may have real economic aspects as well – e.g. in relation to greenfield investment (see below).

There are three ways of making FDI. The type of investment that is best suited for the individual firm depends on the purpose of the investment:

1. Greenfield investment is investment in starting a business from scratch, e.g. by establishing a new facility.
2. Mergers and Acquisitions (M&A).
3. Capital increases in existing firms.

The three types of investment are all investments in the equity of a firm, which in practice indicates the firm's value. FDI also include intra-group loans, i.e. cross-border lending between firms in the same group, e.g. loans from a parent company to a foreign subsidiary. Although regarded as FDI, in practice intra-group loans tend to be more of a liquidity management tool within the group.

FDI can be made from an already existing firm, but may also be effected through the establishment of a holding company through which capital is passed on. This is known as pass-through investments, since the investments pass from one country to another through a holding company, which may be located in a third country. As it serves to inflate balance sheets, pass-through investments are often excluded from FDI analyses, cf. Chart 1. Denmark compiles FDI both including and excluding pass-through investments, but internationally most countries

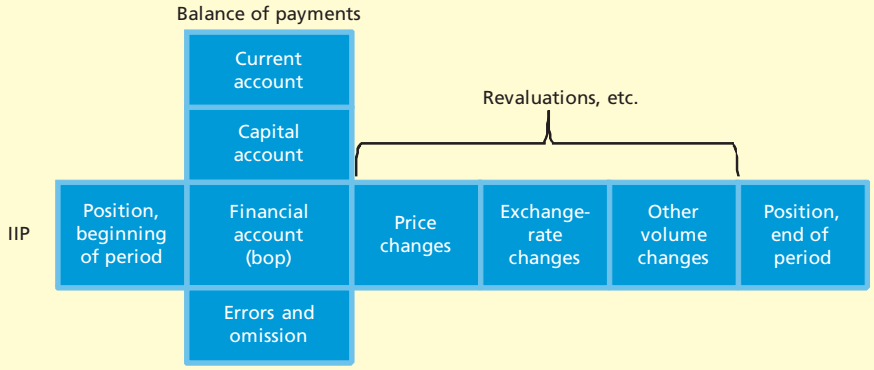
[1] An investment is a decision made today in the hope of getting a positive return in the future. A financial investment is the acquisition of a financial asset, e.g. the purchase of a bond or share in the hope of receiving returns relating to interest and dividend payments in the future. A real economic investment, on the other hand, is the purchase of a physical (real economic) asset, such as new production machinery, which is expected to provide a return in the form of the output produced.

BALANCE OF PAYMENTS AND INTERNATIONAL INVESTMENT POSITION Box 1

Denmark's balance of payments is a compilation of the value of economic transactions (flows) between Denmark and abroad within a given period of time. The balance of payments is broken down into the current account, the capital account and the financial account, which – in theory – are to balance. If Denmark has a current account surplus, and is thus earning foreign exchange, this should be reflected in the financial account in that Denmark owns more foreign assets or has fewer foreign liabilities. In the calculation, there is almost always a difference between the financial account and the current account – in statistics known as errors and omissions.

In other words, the balance of payments records foreign transactions (flows), while the international investment position, IIP, is a compilation of the value of Denmark's foreign financial assets and liabilities at a given point in time (stocks). Changes in the IIP may be due to either net income on the current account or revaluations of exchange rates and prices, e.g. market prices. Chart 1 below shows the relationship between the balance of payments and the IIP.

RELATIONSHIP BETWEEN THE BALANCE OF PAYMENTS AND THE INTERNATIONAL INVESTMENT POSITION (IIP) Chart 1



The current account comprises three components:
The trade balance, covering Denmark's imports and exports of goods and services.
Wages and investment income, i.e. wages earned by non-residents in Denmark or by Danes abroad, and investment income, which is the return on financial stocks excluding revaluations, i.e. interest, dividends and profits on FDI.
Current transfers, including e.g. Denmark's development aid and transfers to and from the EU.

The financial account is divided into five components (instruments):
Direct investments, which are investments in shares (equity investments) where the investor holds at least 10 per cent of the equity or voting rights.
Portfolio investments, covering investments in securities, including shares where the investor holds less than 10 per cent of the equity or voting rights.
Derivatives, which are financial derivatives such as options, futures and swaps.
Other investments, comprising e.g. trade credits, loans and deposits.
Reserve assets, comprising liquid external assets held by the central bank.

STATISTICAL METHOD AND LIMITATIONS Box 2

The compilation of FDI is based on reported data from a sample of large and medium-sized enterprises in Denmark under foreign ownership or owning foreign enterprises. The reported data is believed to cover about 90 per cent of the total amount of FDI and comprises 500-700 enterprises during the years 2004-12. Grossing-up is made for the "remaining" 10 per cent.

The country breakdown of FDI has been compiled for the first counterparty country, i.e. the outward or inward FDI country. For instance, if FDI from the USA to Denmark go through a Luxembourg holding company, Luxembourg will be classified as country of investment rather than the USA. Conversely, an investment from Denmark to the USA through Luxembourg will be recorded as a Danish FDI in Luxembourg.

This also applies to the industry breakdown, since industry is associated only with the Danish firm directly involved. If, for example, a foreign industrial firm invests in Denmark by setting up a financial holding company in Denmark, which acquires a Danish industrial firm, for statistical purposes this investment will be included in the financial industry.

Finally, it should be mentioned that in statistics, it is not possible to distinguish between capital increases, M&A and greenfield investments, and they are all recorded as equity injections.

are unable to make this distinction and, accordingly, comparisons with other countries include pass-through investments[1].

FDI statistics are compiled based on transactions (flows) or positions (stocks). Flows are the value of FDI made in a given period, e.g. one year, while stocks are the total value of FDI at a given point in time, e.g. the end of the year. The development in the value of total FDI stocks from one point in time (t) to the next (t+1) is the sum of flows and revaluations during the period. See Box 2 for information on the statistical method and limitations.

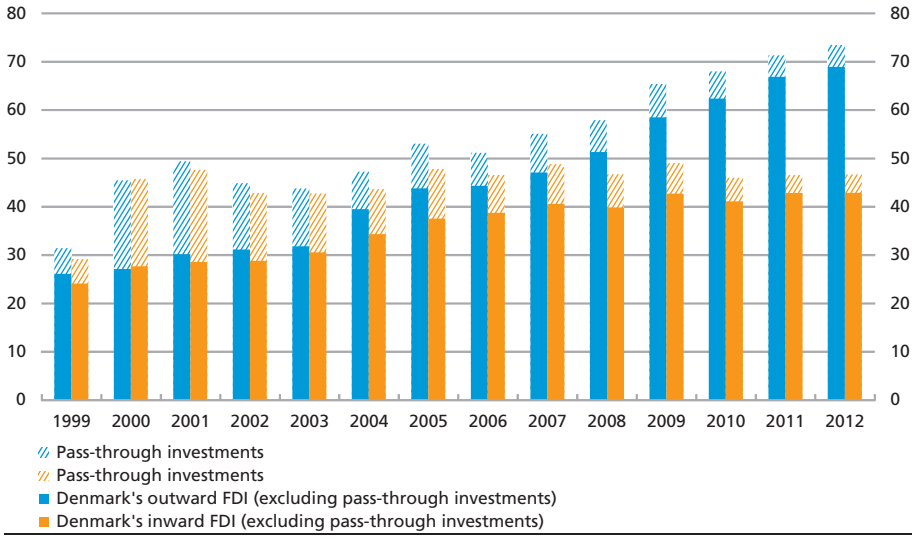
GROWTH IN THE VALUE OF FDI IN DENMARK AND SELECTED COUNTRIES

In terms of Danish kroner, Denmark's outward and inward FDI are much higher today than they was in 1999. However, the inward FDI-to-GDP ratio has been relatively stable at around 40 per cent since 2005, cf. Chart 2. This is in contrast to the outward FDI-to-GDP ratio, which has in-

[1] In practice, pass-through investment is identified based on the Central Register of Enterprises and Local Units, containing this classification. The classification is maintained by Statistics Denmark using input from Danmarks Nationalbank and is performed by assessing the firms based e.g. on number of employees and output.

VALUE OF DENMARK'S OUTWARD AND INWARD FDI (STOCKS), 1999-2012, AS A PERCENTAGE OF GDP

Chart 2



Note: 2012 figures are preliminary.
Source: Danmarks Nationalbank.

creased substantially since 2005. In 2012, the gap between inward and outward FDI was 26 per cent of GDP in Denmark.

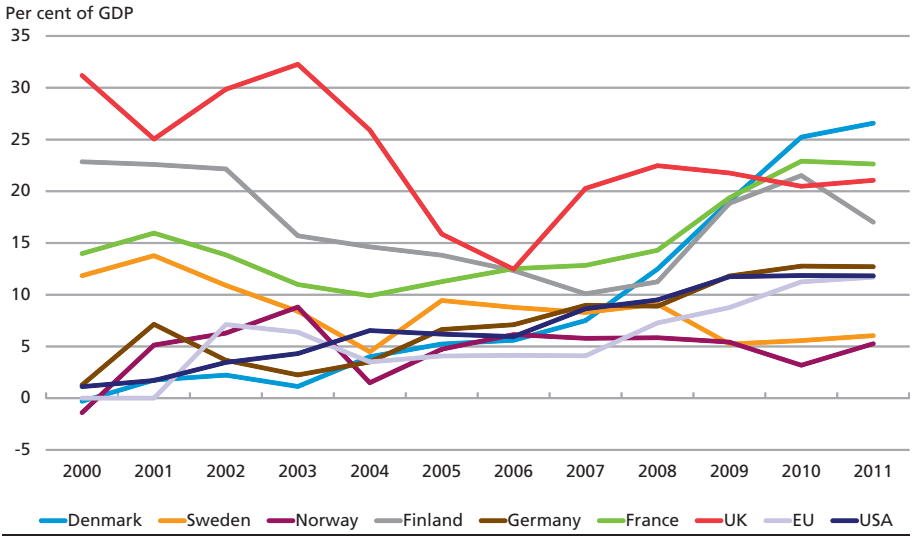
Denmark's net foreign assets have been growing steadily in recent years, driven primarily by a current account surplus, and net assets have been positive since 2008. In 1999, FDI accounted for 22.5 per cent of Denmark's foreign assets, rising to 27.9 per cent in in 2011. During the same period, Denmark's ratio of FDI to foreign liabilities narrowed from 19.9 per cent to 19.0 per cent.

Since 2005, growth in outward FDI has been driven mainly by capital increases and mergers & acquisitions. In combination with other flows, this has raised the value of total stocks by kr. 538 billion. To this should be added positive revaluations of kr. 153 billion resulting from changes in exchange rates and prices. As far as inward FDI is concerned, during the same period flows contributed to an increase in the value of FDI amounting to kr. 270 billion, while revaluations totalled just kr. 12 billion.

Denmark's FDI in an international context

In 2011, Denmark's outward FDI exceeded inward FDI. A comparison with the FDI of a number of other European countries shows the same trend, cf. Chart 3. In 2011, all countries in the Chart thus had a positive net FDI position, i.e. outward FDI exceeded inward FDI. The average difference between inward and outward FDI for the EU was 11.7 per cent,

NET FDI AS A PERCENTAGE OF GDP Chart 3



Note: Figures include pass-through investments, but since they are net figures, the impact of pass-through investments should be neutralised. EU figures have been consolidated.
Source: OECD.

and both Denmark, France, the UK and Finland were substantially above this level[1].

The positive net FDI position of these member states reflects that developed economies invest more in the rest of the world than the other way around. From 2009 to 2011, developed economies accounted for 74 per cent of total outward FDI flows, while receiving only 47 per cent of inward FDI flows.[2] Other things being equal, this trend will contribute to increasing the net FDI of developed economies.

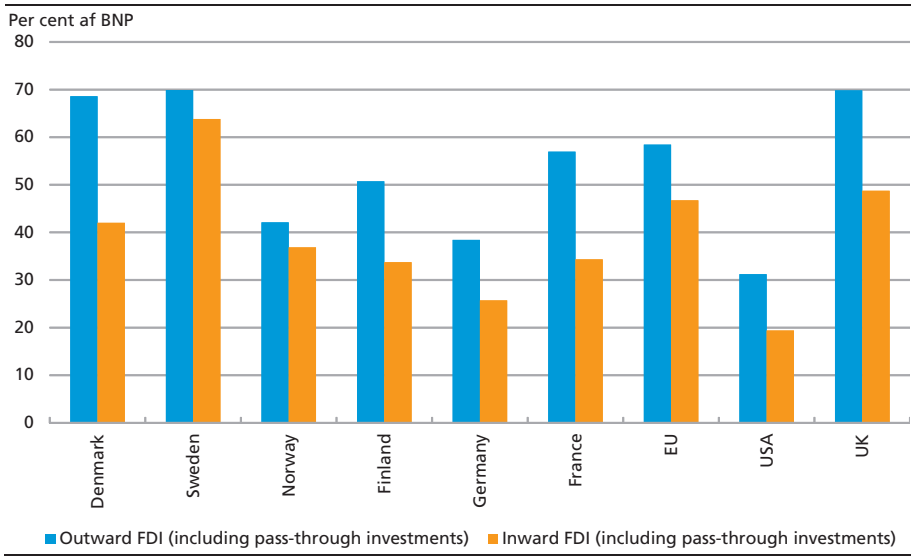
In 2011, the ratio of Denmark's outward FDI to GDP was 10 percentage points higher than the EU average, while Denmark's inward FDI ratio was 5 percentage points lower, cf. Chart 4.

Viewed from a financial perspective, these figures can be seen e.g. as a result of Denmark running current account surpluses for some time – with an ensuing foreign investment need[3].

It has been argued in public debate that, from a real economic perspective, the modest increase in inward FDI is a cause of concern, since this could be seen as an indication that foreign investors are scep-

1 For the EU as a whole, recent member states, such a Poland and Slovakia, tend to have higher inward than outward FDI, while older member states, except for Portugal and Luxembourg all have larger outward than inward FDI.
2 Cf. UNCTAD (2012).
3 A surplus on the current account of the balance of payments means that the respective country is "earning" foreign exchange (inflow of foreign exchange). This foreign exchange has to be invested abroad in order for the financial account to equal the current account surplus. Other things being equal, this surplus causes foreign net assets to rise.

OUTWARD AND INWARD FDI FOR SELECTED COUNTRIES IN 2011 Chart 4



Note: Figures include pass-through investments. EU figures have been consolidated.
Source: OECD.

tical of the investment potential in the Danish economy. However, the level of Denmark's inward FDI is still higher than that of most of our neighbouring countries, although below the EU average. Moreover, neither the rates of return on inward FDI nor total FDI flows would seem to indicate that Denmark is particularly unattractive as an investment country (see the section on investment income).

DENMARK'S FDI

Excluding pass-through investments, the value of Denmark's outward FDI was kr. 1,255 billion at end-2012, much of which was made by a few large firms. Thus the 15 largest FDI investors accounted for 50 per cent of Denmark's outward FDI, the top three investors contributing 27 per cent of investments. In other words, a few large firms have a major impact on the value of Danish outward FDI.

It is a different picture for inward FDI, where investments are spread among more investors. Disregarding pass-through investments, Denmark's inward FDI amounted to kr. 780 billion in 2012. The top three investors contributed just under 11 per cent of Denmark's inward FDI, while the 44 largest investors accounted for 50 per cent of the investments.

Danish investments broken down by country

A compilation of Denmark's outward and inward FDI shows that both inward and outward FDI flows are concentrated on relatively few countries. Thus 10 countries received 75 per cent of Denmark's outward FDI, while the 10 largest investor countries accounted for just under 85 per cent of Denmark's inward FDI, cf. Table 1.

At the same time, the countries targeted by Denmark for investment and targeting Denmark for investment are more or less the same. Geographically close countries, in particular, feature high on the lists of both outward and inward FDI targets. These countries are also major trading partners of Denmark.

Accounting for close to 20 per cent of Denmark's outward FDI, Sweden is the largest investment country for Danish firms. A key factor is thus that Carlsberg's major investments in Russia are owned through Swedish subsidiaries. According to Carlsberg's most recent annual report, the value of Carlsberg's non-current assets in Russia is kr. 62.4 billion. Adjusting for this value in the calculations, entailing that the investments are assigned to Russia instead of Sweden, Sweden remains Denmark's largest investment country, but the investment share declines to 14.5 per cent. On the other hand, Russia becomes Denmark's sixth largest investment country with investment holdings of kr. 70.3 billion and an investment share of 5.6 per cent.

THE 10 LARGEST COUNTRIES FOR DENMARK'S OUTWARD AND INWARD FDI, 2012 Table 1

	Denmark's outward FDI				Denmark's inward FDI			
	Country	Kr. billion	Per cent	Export share, per cent	Country	Kr. billion	Per cent	Import share, per cent
1	Sweden	244.1	19.5	13.1	Sweden	175.0	22.4	13.3
2	USA	137.4	10.9	7.4	Netherlands	104.3	13.4	7.4
3	**UK**	**123.7**	**9.9**	9.3	**Luxembourg**	**75.0**	**9.6**	0.2
4	Germany	104.3	8.3	15.2	USA	58.1	7.4	2.8
5	Netherlands	70.7	5.6	4.3	UK	56.8	7.3	5.6
6	Norway	69.9	5.6	6.8	Germany	53.5	6.9	20.7
7	Switzerland	63.4	5.1	0.9	Norway	50.7	6.5	5.4
8	**Singapore**	55.3	4.4	0.6	**Japan**	36.6	4.7	0.5
9	France	41.8	3.3	3.3	Switzerland	27.7	3.5	0.9
10	**Finland**	35.0	2.8	2.4	France	24.8	3.2	3.0
	10 largest countries	945.7	75.4	63.5	10 largest countries	662.3	84.9	59.6
	Total	1254.9	100	100	Total	780.4	100	100

Note: Excluding pass-through investments. Countries highlighted in bold in the Table are countries that do not rank in the top 10 for both outward and inward FDI.
Source: Danmarks Nationalbank and Statistics Denmark, External Trade Statistics.

Overall, 59 per cent of FDI is made in EU member states, and just over three-fourths of the investment is concentrated on Sweden, the UK, the Netherlands and Germany.

In Asia, Singapore (4.4 per cent), Hong Kong (1.8 per cent) and China (1.8 per cent) are the primary investment countries. One of the reasons why FDI in China are not greater is that the statistics are compiled for the first counterparty country, cf. Box 2. This entails that investments channelled into China through other countries is not recorded as FDI in China. The Asian countries specified were among the fastest-growing FDI destinations from 2004 to 2012, albeit from a very low starting point.

The list of the top 10 countries has remained very stable since 2004, highlighting that FDI constitute a reliable indicator of long-term economic relations between countries. Sweden has been topping the list of investment countries every year since 2004 and, with the exception of Singapore, the countries have all featured on the top 10 list since 2004.

Denmark's inward FDI

As for outward FDI, Sweden tops the list of inward FDI with a share of 22 per cent. EU member states account for 71 per cent of Denmark's inward FDI, of which Luxembourg and the Netherlands account for 33 per cent. Note that the breakdown by country is for the first counterparty country only; therefore, investments passing through financial holding companies in, say, Luxembourg, may originate in other countries – including non-EU member states[1].

The 10 largest investor countries have also remained very stable, eight in 10 countries featuring on the top 10 list of investor countries since 2004. Japan was new on the list in 2011 following Japanese Takeda's acquisition of the Nycomed Group from its Swedish owners.

FDI AND EMPLOYMENT

When Danish firms establish new firms abroad (greenfield investments), this is reflected in job creation abroad. Conversely, when foreign firms establish new firms in Denmark, this is reflected in job creation in Denmark. This tends to be interpreted as "relocation" of production, but actually production in the owner's home country is not an obvious alternative. A similar firm could be set up with an owner from a different country, or the owner in the home country could choose to forego

[1] According to UNCTAD 2012, in Europe Luxembourg and the Netherlands, in particular, are home countries for financial holding companies, accounting for 93 and 79 per cent, respectively, of inward FDI in the two countries. The high concentration of holding companies in these countries is due to favourable legislation in this field.

production abroad or import goods or services from foreign-owned firms.

However, most FDI are not greenfield investments. This means that, in general, Danish outward FDI do not reflect relocation of production and thus loss of jobs. And the alternative to Danish-owned production abroad is very rarely Danish-owned production in Denmark. Similarly, employment is usually not affected by ownership when it comes to non-greenfield, inward FDI. For instance, an acquisition tends to lead to a change of financial ownership only – i.e. with no real-economic impact. In the aggregate, there is thus no one-to-one relationship between FDI and employment. See Box 3 for further details of deliberations on why firms choose to engage in FDI.

Over the years, the impact of foreign business owners on the Danish labour market has increased. Thus, in 2010, 272,797 staff were employed by Danish-based firms in which non-residents held more than half of the share capital, equivalent to 20 per cent of all private-sector employees.

FDI DELIBERATIONS Box 3

Today, many goods are far more complex than they were a decade or two ago. The production process has become more complex and often goes through several links, requiring more specialised input. Therefore, it is not unusual for firms to split production into multiple cross-border locations, thereby increasing their FDI – this is an integral part of globalisation. Therefore, foreign firms now have a greater impact on the Danish labour market, and at the same time Danish firms have become more active abroad.

In an economy, the size of the labour force determines the potential increase in employment. Periods of strong demand are usually reflected in labour market tightness as evidenced during the Danish boom in the mid-2000s. Some firms had difficulties meeting their needs for labour and foreign labour was therefore imported. An alternative to firms stranded in this situation could be to build up the desired production capacity outside Denmark, e.g. by increasing employment in foreign subsidiaries. That way, considerable domestic capacity pressures may be reflected in increased outward FDI.

Firms, including private equity funds, often invest abroad through acquisitions in order to create added value through corporate governance. Value added may be in the form of efficiency gains from synergies and economies of scale, using specific knowhow. Firms may also acquire foreign firms to gain access to network resources, e.g. by acquiring distribution networks and existing customer bases or intellectual property and patents.

By making FDI in a given country, the firm establishes a commercial presence and is provided with the opportunity to win new market shares or gain a foothold in a new market with a view to local sales. Should the firm choose to produce and sell its products in the respective country, FDI may translate into lower output in its home country than if it had chosen just to set up a distribution and sales unit abroad.

CONTINUED Box 3

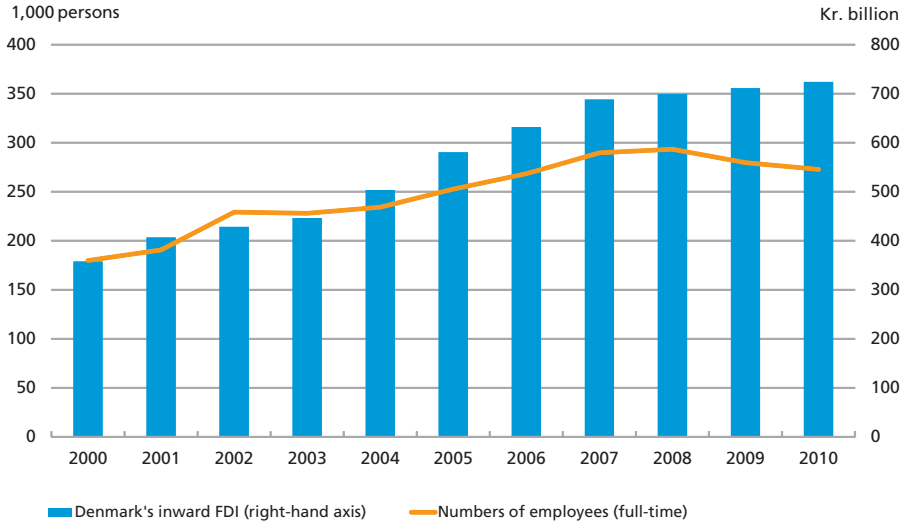
On the other hand, mergers and acquisitions by Danish firms may generate more export orders for Danish firms, and head office staff functions may be expanded. For instance when a Danish firm sets up a sales and distribution unit in a high-growth market to gain direct access to strong demand. Conversely, foreign acquisitions in Denmark could mean increased competition and loss of jobs in firms already operating in Denmark. Moreover, the new owner could seek to create added value through cut-backs or expansions, thereby reducing or increasing the number of employees.

From time to time, the story goes that foreign firms/private equity funds acquire Danish firms to exploit a non-optimal capital-to-labour ratio, causing layoffs in Denmark, and implying that inward FDI reduce employment. However, in general, restructuring of the acquired firms is a natural outcome of production optimisation in a globalised world of free capital flows. And had the foreign firm not implemented the restructuring plan, it was to be expected that, in response to long-term competition, the firm would have been compelled to launch a similar restructuring plan.

Until and including 2008, inward FDI-related employment showed a positive trend, which declined slightly over the period 2008-10, cf. Chart 5.

The negative development during the years 2008-10 should be seen in light of the fall in Danish employment following the general slowdown

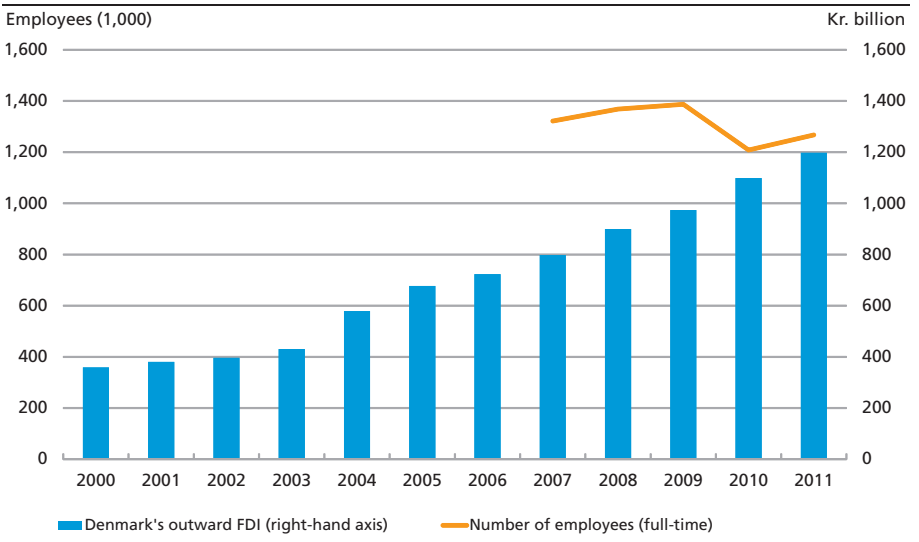
DENMARK'S INWARD FDI AND NUMBER OF EMPLOYEES Chart 5



Note: Excluding pass-through investments. Numbers of employees are from firms with more than 50 per cent foreign ownership, while FDI has been calculated for ownership exceeding 10 per cent. However, the value of FDI below 50 per cent is modest.

Source: Danmarks Nationalbank and Statistics Denmark.

DENMARK'S OUTWARD FDI AND NUMBER OF EMPLOYEES Chart 6



Note: Excluding pass-through investments. Numbers of employees are from firms with more than 50 per cent foreign ownership, while FDI have been calculated for ownership exceeding 10 per cent. However, the value of FDI below 50 per cent is modest.
Source: Danmarks Nationalbank and Statistics Denmark.

in the global and Danish economy. Overall figures do not indicate that foreign ownership has resulted in a reaction different from that of Danish-owned firms.

By comparison, Danish firms employed 1,208,395 staff abroad at end-2010, cf. Chart 6[1]. Over the period 2007-11, employment figures for Danish firms abroad have been relatively stable. It should be mentioned that the high employment figures abroad are attributable extensively to ISS, which employed 513,650 staff abroad in 2010 alone.[2]

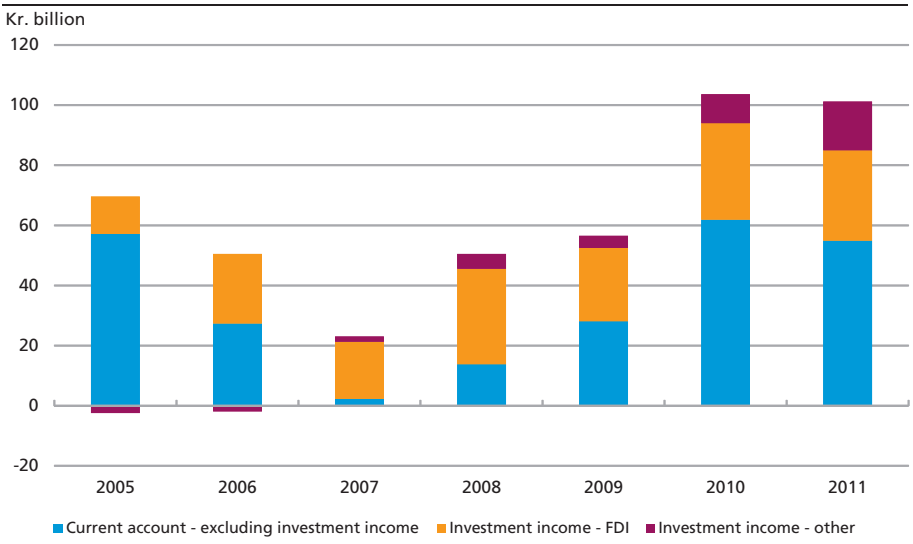
INVESTMENT INCOME FROM FDI

During the period 2005-11, investment income from FDI accounted for a significant portion of the current account surplus, cf. Chart 7. Thus the net return on FDI was kr. 173 billion, or more than one-third of the total current account surplus during the period. Total investment income amounted to kr. 205 billion.

Investment income from inward and outward FDI has been displaying the same pattern in recent years. During years of increasing returns on outward FDI, the return on inward FDI rises, and during years of declining

1 Statistics Denmark has been compiling employment data only from 2007 onwards, so the Chart does not go back any further than that.
2 Cf. Annual report 2010 for ISS.

CURRENT ACCOUNT SURPLUS AND NET INVESTMENT INCOME — Chart 7

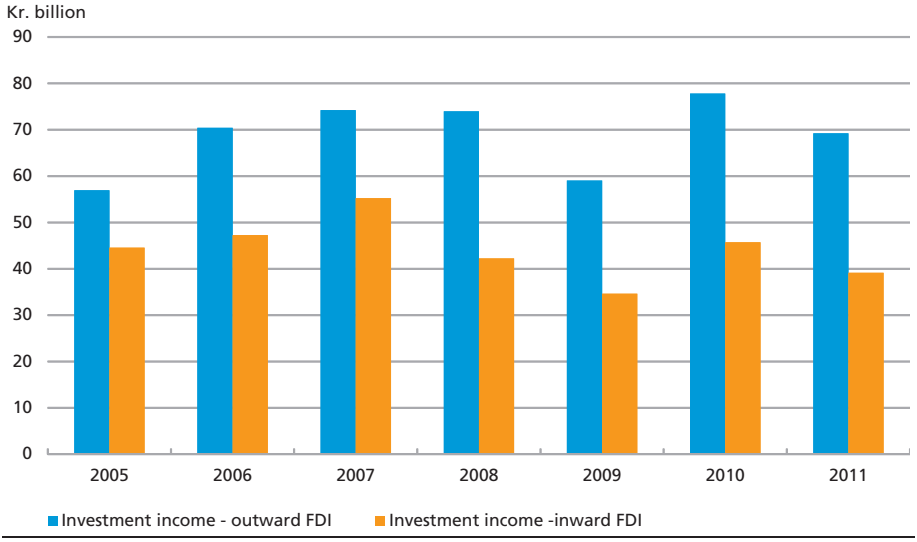


Note: Investment income has been calculated excluding pass-through investment.
Source: Danmarks Nationalbank, Statistics Denmark.

returns on outward FDI, the return on inward FDI also decreases. However, the overall result has been positive net investment income from FDI, cf. Chart 8.

The difference between investment income and investment expenses may be decomposed into a stock component (difference in the size of

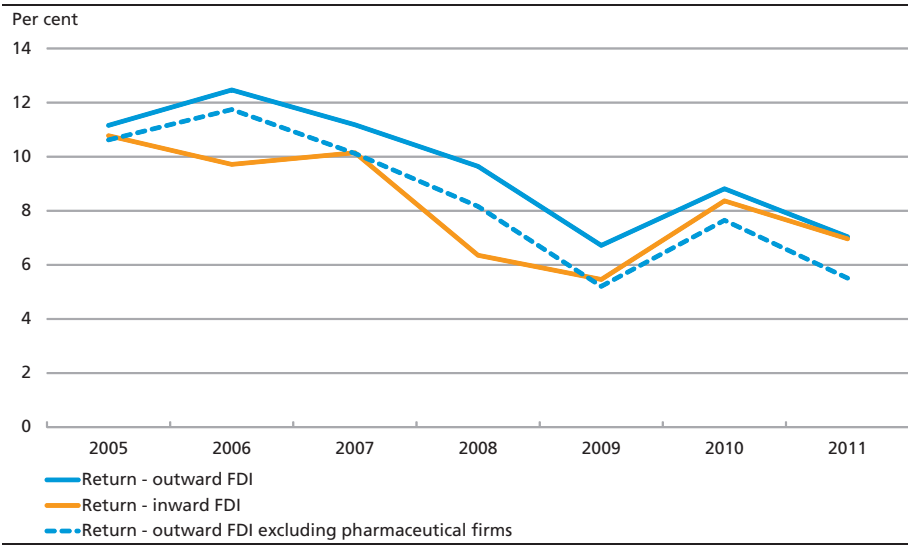
INVESTMENT INCOME FROM OUTWARD AND INWARD FDI — Chart 8



Note: Figures exclude pass-through investments.
Source: Danmarks Nationalbank.

RATES OF RETURN ON EQUITY INVESTMENTS FOR OUTWARD AND INWARD FDI

Chart 9



Note: Excluding pass-through investments and return from the Building and construction item, since it does not have associated stocks.
Source: Danmarks Nationalbank.

outward and inward FDI) and a return component (difference in rate of return on investment)[1]. During the period 2005-11, the rate of return on outward FDI was higher than that on inward FDI, cf. Chart 9. Thus average rates of return were 9.6 per cent on outward FDI and 8.4 per cent on inward FDI.

One of the main reasons why outward FDI generate a higher return than inward FDI is outward FDI made by Danish pharmaceutical firms. The average return on pharmaceutical firms' FDI is 28.7 per cent. Returns of this order can be explained e.g. by the ability of pharmaceutical firms to generate a relatively high ratio of earnings to capital invested in foreign subsidiaries – an ability that is due to patents. Over the period, FDI by pharmaceutical firms accounted for just 5.8 per cent of the investments in equity for outward FDI, but as much as 18 per cent of the associated investment income. As regards inward FDI, the size of inward FDI in Danish pharmaceutical firms is very modest. On the other hand, non-residents have substantial portfolio investments in Danish pharmaceutical firms; for instance, foreign shareholders own more than 50 per cent of Novo Nordisk (B shares) and receive large annual dividend payments.

[1] See Robert Wederkinck, "Foreign investment income", Danmarks Nationalbank, *Monetary Review*, 4th Quarter 2011, Part 1, for details on these components.

If the rate of return on outward FDI is calculated excluding pharmaceutical firms, the average return declines to 8.3 per cent.

When the pharmaceutical returns are taken into account, the rates of return on outward and inward FDI are almost the same during the period. In this context, there are no indications that the return on FDI in Denmark is lower than that on similar investments abroad. In other words, the rates of return do not seem to provide a general incentive for Danish firms to forego investment opportunities in Denmark in order to invest abroad.

OTHER FDI IMPACTS

As discussed above, it is difficult to assess the actual alternatives to Denmark's outward and inward FDI. FDI show that part of a country's output is produced by foreign-owned firms and does not in itself signify the extent to which output and employment in a country are affected by international interaction. But the size of exports and imports does. Exports are derived from output produced in Denmark – regardless of the nationality of the owners of the firm – while imports, on the other hand, are derived from output produced abroad – regardless of whether the owners are foreign or Danish.

As Danish firms have increased their outward FDI, it is relevant to ask whether this has also impacted Denmark's imports and exports. For instance, a firm making FDI in a country will gain access to a foreign market. Such access could lead to more exports to the country in question, but if the firm chooses also to produce its products in the respective country, FDI may substitute trade and be reflected in lower exports to – and potentially more imports from – this country. The overall impact on imports and exports depends on which impact is stronger.

Consequently, parts of the FDI flows are flows with a potential impact on the balance of goods and services. Where outright relocation (or insourcing) of production is concerned, this will necessarily affect the balance of goods and services negatively (positively). However, it is not possible to compile the impact of inward and outward FDI, respectively, on the balance of goods and services. But it cannot be ruled out that Denmark's surplus on the balance of goods and services would have been even greater – and the loss of market shares smaller[1] – in the absence of relocation of production related to parts of outward FDI. However, the impact on output and employment in Denmark would

[1] See Andersen, Christian Helbo, Jacob Isaksen and Morten Spange (2012): Denmark's competitiveness and export performance, Danmarks Nationalbank, *Monetary Review*, 2nd Quarter.

have been the same if the loss of market shares had been to foreign-owned firms abroad rather than to Danishowned firms abroad.

The extent of outward and inward FDI may also impact productivity. FDI may *inter alia* translate into an exchange of knowledge and technology that would otherwise not have been available to the firm in question. By investing abroad, a Danish firm may thus acquire knowledge that may be of use also in its domestic market. Similarly, the presence of foreign firms in Denmark may affect productivity in Danish-owned firms positively through spill-over effects.[1]

[1] However, one of the only empirical studies on productivity effects of Denmark's inward FDI on domestic firms demonstrates negative effects on productivity in several industries at the aggregate level. See WP 72/2011, Jannick Damgaard: Productivity spillovers from FDI: Ownership structures, domestic firm characteristics, and FDI characteristics.

Current Trends in the Greenlandic Economy

Anders Møller Christensen and Carina Moselund Jensen, Economics

Activity in Greenland is declining after a few years of high growth compared with most European countries. The international economic crisis that hit the world economy in 2008 affected Greenland only to a modest extent. According to the preliminary national accounts, which cover the period up to and including 2011, the gross domestic product, GDP, was 8 per cent higher in 2011 than in 2007 in volume terms. This is in contrast to developments in many European countries, including Denmark. The main reasons are strong growth in investment combined with stable fisheries.

However, in 2012 the tide turned due to a decline in fisheries and lower oil exploration activity. In its most recent report[1], which was published in the autumn of 2012, the Chairmanship of the Economic Council in Greenland assessed that GDP would decline by 3 per cent in 2012, followed by zero growth in 2013. There are many indications that this assessment is too optimistic. Fisheries are set to decline further in 2013, and the same seems to be the case for oil and mineral exploration activity. Presumably building and construction activity is also slowing down. With lower volumes in fishery, falling raw material exploration activity and smaller investment budgets, a further decline in overall activity can be expected in 2013.

On the other hand, income has been boosted by further rises in world market prices in the predominant export industry, fisheries, in 2012, and therefore this industry is generally in a good financial position despite falling catches. Finally, the block grant from Denmark and income from agreements with the EU are stable sources of income.

The national accounts

The national accounts show that there has been very strong growth in investment, which reached almost 70 per cent of the gross domestic product, GDP, in 2011, cf. Table 1.

Investment growth is to a large extent attributable to investments in oil and mineral exploration. The strong growth in 2010 and 2011 was pri-

[1] http://naalakkersuisut.gl/~/media/Nanoq/Files/Attached%20Files/Finans/DK/Oekonomisk%20raad/konomisk%20Rds%20rapport%202012.pdf (in Danish)

DEMAND AND SUPPLY, REAL GROWTH Table 1

Per cent	(Share of GDP 2011)	2005	2006	2007	2008	2009	2010	2011
Private consumption	(47.6)	5.2	0.7	0.8	-0.9	0.9	1.8	-0.7
Public consumption	(52.6)	0.5	3.4	8.3	2.2	-1.3	-0.3	0.3
Total gross investment	(68.3)	41.7	-0.6	30.8	46.0	-28.2	85.2	27.0
Excl. investment in raw materials exploration	(24.2)	37.6	1.6	17.7	37.2	-27.5	17.3	-5.3
Exports of goods and services	(32.0)	2.9	-0.5	-3.3	8.1	-8.8	2.1	11.4
Final consumption equal to total addition	(200.5)	7.1	1.1	6.5	10.1	-8.4	16.3	9.6
Imports of goods and services	(100.5)	12.6	-5.4	11.9	22.7	-15.8	33.4	17.2
Gross domestic product	(100.0)	3.7	5.4	3.4	2.1	-2.7	4.9	3.2

Source: Statistics Greenland.

marily related to oil exploration activity in the sea off the west coast of Greenland. Most of these investments were made by foreign companies using foreign labour on foreign drilling and supply vessels and are offset by large imports of services in the national accounts. But contributions from local firms also increased Greenland's GDP, and the activities provided tax revenue for Greenland. In addition, there has been considerable mineral exploration activity in recent years.

More traditional investments have fluctuated somewhat around a high level. There has been considerable construction of housing, student residences and places of education, and hydropower capacity has been expanded. In the course of 2013, hydropower will become the primary source of energy in the largest Greenlandic towns. The strong growth in traditional investments in 2008 and the subsequent fall reflect, *inter alia*, large telecommunications infrastructure investments in the form of submarine cables linking Greenland with both Canada and Iceland.

FACTS ABOUT GREENLAND

Population (number of people, beginning of 2013)	56,370
Of which in Nuuk (capital)	16,456
Population aged 18-66 years	38,383
Employment[1] (2011)	28,599
Unemployment[2] (2011)	2,518
Gross domestic product (kr. billion, 2011)	13.1
Per capita (kr. 1,000)	230.4
Disposable gross national income (kr. billion, 2011)	16.9
Per capita[3] (kr. 1,000)	298.6

Source: Statistics Greenland and own calculations.

[1] Number of people in primary employment, average of monthly data.

[2] Approximated ILO definition, average of monthly data.

[3] By comparison, disposable GNI per capita in Denmark was approximately kr. 322,300 in 2011. Disposable GNI was approximately 0.2 per cent higher than GDP.

In recent years, growth in consumption – not least in the private sector, but since 2008 also the public sector – has been subdued. The sum of public and private consumption matches Greenland's GDP, which is possible because of transfer income from abroad in the form of block grants from the Danish government and agreements with the EU. This means that Greenland's disposable gross national income is 29 per cent larger than its GDP.

Imports of goods and services have risen sharply, largely on account of oil and mineral exploration activities, while exports of goods and services have been stagnant, albeit with a rising tendency in 2010 and 2011. As a result, the deficit on the balance of goods and services has been increasing steadily, from approximately kr. 2 billion p.a. in 2003 and 2004 to almost kr. 9 billion in 2011. To the extent that the deficit reflects imports in connection with oil and mineral exploration activities, it will not be matched by an increase in Greenland's foreign debt. Such imports are financed by the companies in question, and their claim on Greenland consists in the right to extract raw materials on the applicable terms and conditions. The risk is borne by the companies.

Balance-of-payments statistics for Greenland are not yet available, but there can be no doubt that economic growth in the period 2005-11 was loan-financed to a large extent, cf. the section on loans and bank deposits.

Balance of trade

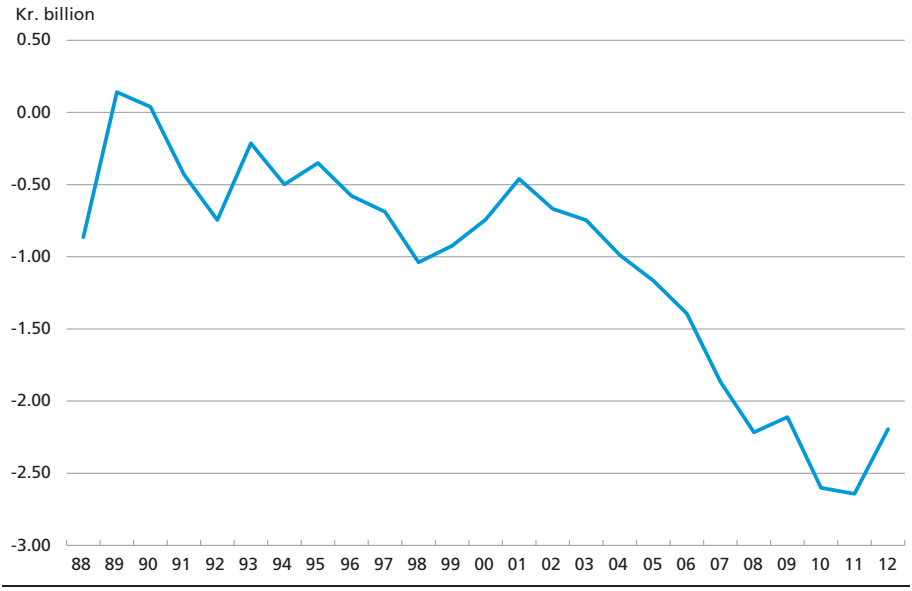
In 2012, Greenland's balance of trade showed a deficit of kr. 2.2 billion, down from kr. 2.6 billion in the preceding two years, cf. Chart 1. Exports of goods totalled kr. 2.8 billion, an increase of kr. 0.2 billion, while imports of goods fell by kr. 0.2 billion to kr. 5.0 billion.

Despite a strong increase in export values since the trough in 2009, cf. Chart 2 (left), it is obvious in a long-term perspective that there is a considerable structural problem in that exports are virtually stagnant with large fluctuations from year to year. Fisheries account for approximately 90 per cent of Greenland's exports of goods.

Export growth is predominantly attributable to favourable price developments for fish and shellfish, cf. Chart 3, which illustrates export prices for the three main exports: frozen whole prawns, frozen peeled prawns and frozen whole Greenland halibut. Since mid-2010, prices have risen by around 50 per cent, while volumes have been decreasing.

Presumably the opportunities to expand this sector are limited. Prawn catches in Greenland naturally fluctuate somewhat, and in accordance with biological advice quotas are at the lowest level for many years, cf. the section on fisheries. It is regarded as uncertain whether climate change will bring other species by way of compensation.

TRADE BALANCE Chart 1

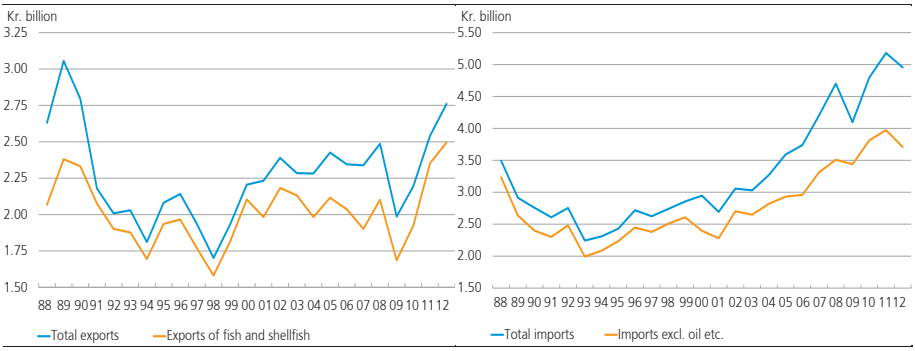


Note: Preliminary data for 2009-12.
Source: Statistics Greenland.

Hence, the lack of development of new export industries is a major problem. Undoubtedly, the greatest opportunities in the near term are offered within mineral extraction, cf. the section on this topic.

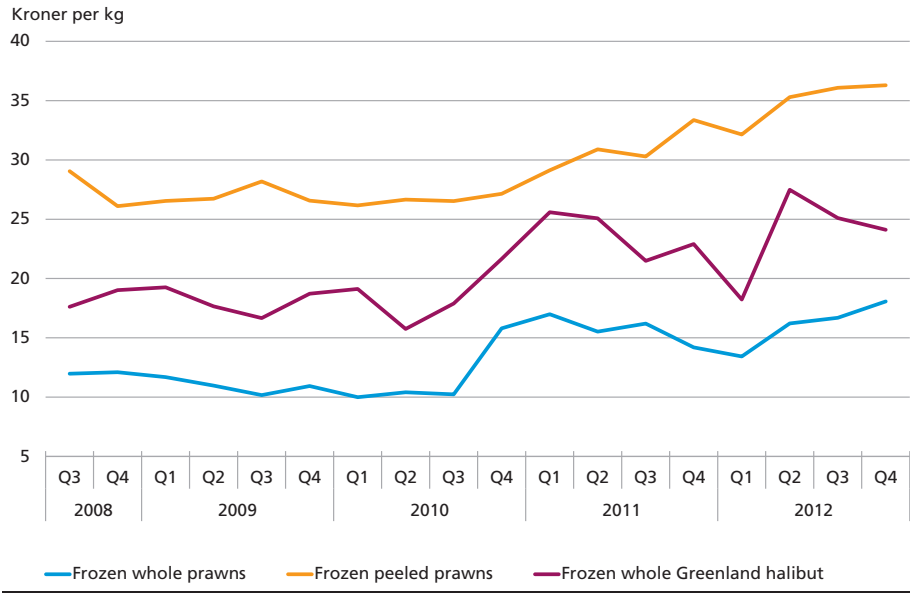
For a number of years, imports of goods rose at a rate that reflected the general trend in activity and prices, cf. Chart 2 (right). Most of the goods used for investment and for private consumption are imported. Imports fell in 2012, the reason being that neither ships nor aircraft were imported, while other imports remained more or less unchanged.

EXPORTS (LEFT) AND IMPORTS (RIGHT) Chart 2



Note: Preliminary data for 2009-12.
Source: Statistics Greenland.

EXPORT PRICES FOR FISH AND SHELLFISH Chart 3



Source: Own calculations based on data from Statistics Greenland.

Private consumption

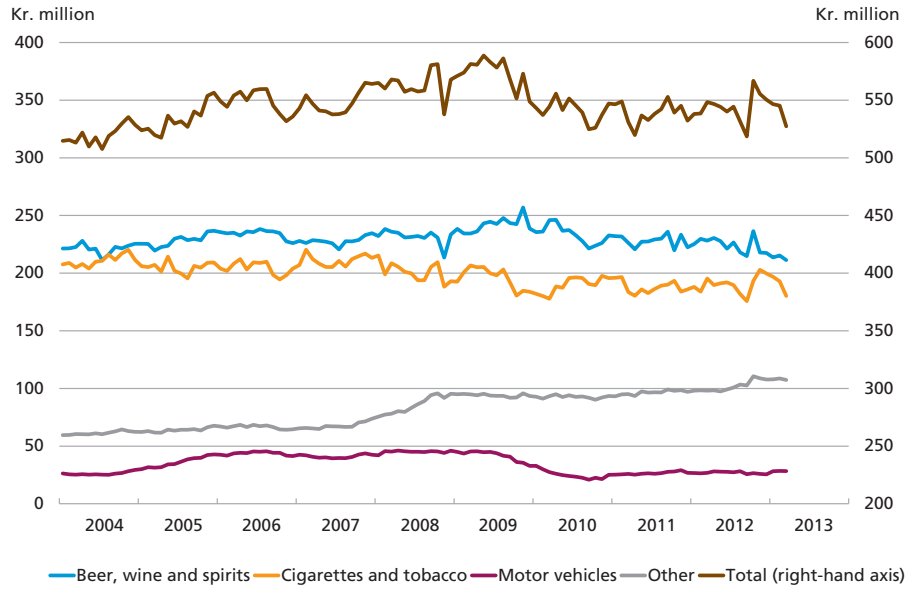
The most important economic indicator of developments in large areas of private consumption is the Greenlandic government's monthly statement of revenue from excise duties.

With one exception – packaging – these duties have been unchanged since the autumn of 2007, so changes in revenue since then reflect changes in private consumption of the relevant categories of goods. As Chart 4 shows, revenue has declined since 2009. This is mainly attributable to lower sales of alcohol and tobacco as well as cars. The fall in revenue from alcohol and tobacco continued in 2012, while revenue from other areas of consumption was more or less unchanged. In this context it should be noted that sales of tax-free tobacco and alcohol before arrival in Greenland were suspended from January 2011 to November 2012, so the development in consumption has been a little weaker than the revenue from taxes indicates.

Loans and bank deposits

Private individuals, firms and the public sector mainly bank with the two locally represented banks, Grønlandsbanken and BankNordik, but it is not unusual to have a bank account in Denmark. The Danish mortgage banks have also increased their activities in Greenland in recent years. So in order to illustrate developments in the Greenlandic population's deposits and loans it is necessary to include Danish banks and mortgage banks.

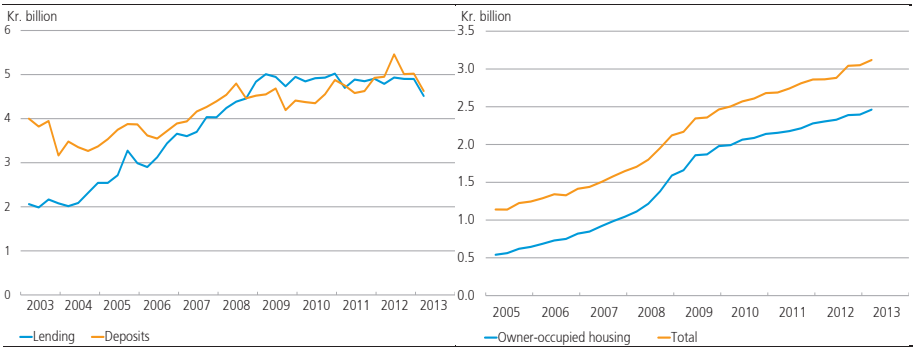
IMPORT DUTIES — Chart 4



Note: 12-month sums. The most recent observations are from March 2013.
Source: Greenlandic government.

Chart 5 (left) shows that residents in Greenland have gone from having a customer funding surplus of approximately kr. 1 billion in 2004 with banks in the Danish currency area – Denmark, the Faroe Islands and Greenland – to having more or less balanced loans and deposits. During the same period, mortgage banks have increased their outstanding loan volume in Greenland from around kr. 1.2 billion to more than kr. 3 billion, cf. Chart 5 (right). This is attributable to a greater prevalence of

BANKS' LENDING TO AND DEPOSITS FROM GREENLAND (LEFT) AND MORTGAGE BANKS' LENDING TO GREENLAND BROKEN DOWN BY PROPERTY CATEGORIES (RIGHT) — Chart 5



Note: The most recent observations are from the 1st quarter of 2013.
Source: Danish Financial Supervisory Authority and Danmarks Nationalbank.

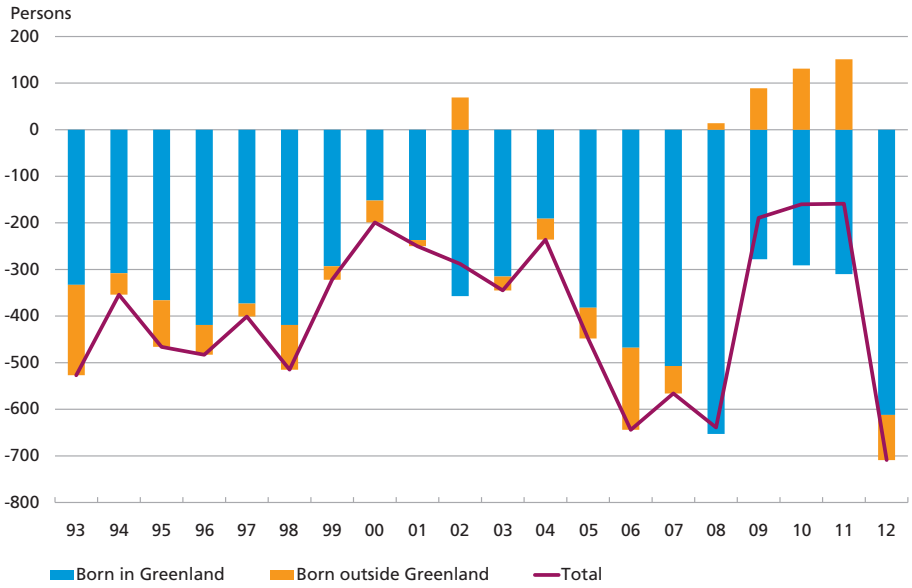
owner-occupied housing, as well as a declining tendency for rental housing to be funded directly by the government and local authorities. All mortgage loans are fixed-rate loans with amortisation, and the collateral must be negotiable on market terms. Hence, mortgage loans are primarily granted in Nuuk and a few other towns. So net lending to Greenland from these sources has risen by approximately kr. 3 billion in seven years. In addition, the Greenlandic government in 2010 and 2012 raised loans totalling kr. 600 million from the Nordic Investment Bank, NIB, for partial financing of two hydroelectric power plants. These loans are not included in the statistics.

The statistics thus support the view that economic growth has been loan-financed in recent years, particularly in relation to construction. The strong growth in lending means that interest-bearing gross debt has also increased notably. Total gross lending now amounts to around 65 per cent of GDP, which is still far lower than in Denmark, where the corresponding figure is around 200 per cent.

Immigration and emigration

Following some years of net immigration of people born outside Greenland, the trend reversed and net emigration was seen in 2012, cf. Chart 6. At the same time, net emigration of people born in Greenland rose, and total net emigration exceeded the excess of births, i.e. the

NET IMMIGRATION Chart 6



Source: Statistics Greenland.

difference between the number of births and deaths. As a result, the population decreased. There is a close link between the Danish and Greenlandic labour markets, so the reversal of the immigration trend is another indicator of lack of economic growth in Greenland in 2012.

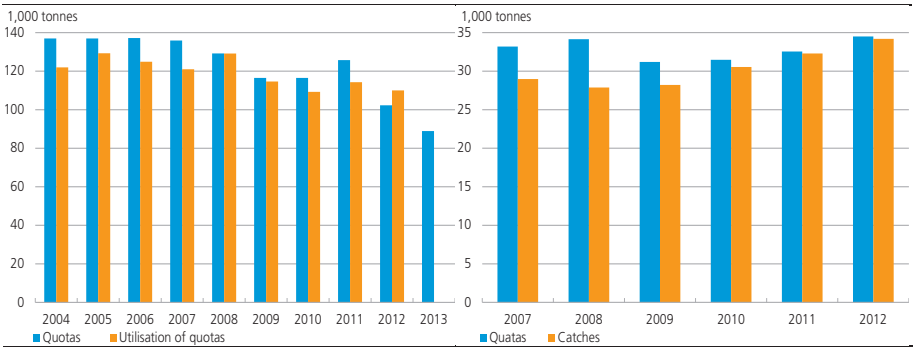
Fisheries

From an economic point of view, prawn fishing is the most important branch of fisheries in Greenland. Quotas fluctuated at around 120,000 tonnes for some years, but were reduced in both 2012 and 2013, to 90,000 tonnes this year, cf. chart 7 (left). As world market prices have been rising since the summer of 2010, this branch of fisheries is doing well, and the largest companies have posted substantial profits despite the decline in volumes. Quotas have been fixed in accordance with biological advice, and in 2012 prawn fishing was certified as sustainable, which may help to boost prices. So the need for smaller quotas is scarcely a result of overfishing. It is more likely to reflect climate change, entailing that prawns are caught still further north. At the same time, increasing numbers of cod, which eat prawns, are seen in the southern parts of the western Greenlandic waters. Until this year, biological advice has been against direct cod fishing, but that has now changed. The biological advice for 2013 is a quota of 8,000 tonnes in coastal waters and no direct fishing at sea, but the Greenlandic government has granted a quota of 5,000 tonnes for the latter – subject to conditions.

As a result of climate change, experimental fishing for mackerel, herring and other schooling fish will take place in eastern Greenlandic waters in 2013.

GREENLANDIC VESSELS' QUOTAS AND UTILISATION OF QUOTAS FOR PRAWNS (LEFT) AND QUOTAS AND CATCHES OF GREENLAND HALIBUT (RIGHT)

Chart 7



Note: Due to the flexible quota system, catches may legally exceed the quotas in some years.
Source: Greenlandic Ministry of Fisheries, Hunting and Agriculture.

Quotas for Greenland halibut, the financially second most important species, have been stable for a number of years, and catches are approaching the quotas, cf. Chart 7 (right). Presumably catches cannot be increased notably if they are to be biologically sustainable.

Extraction of raw materials

Greenland has a strong need to develop other industries than fisheries. However, there are a number of impediments, including a substantial level of costs that is on the high side of the Danish level, a geographically very scattered population with a resultant lack of economies of scale, high transport costs and, not least, a low level of education. Extraction of raw materials is the most realistic supplement to fisheries.

Considerable exploratory activities have taken place in recent years. Costs for oil exploration in the sea off western Greenland totalled approximately kr. 5 billion in 2010 and 2011. Most of these activities are carried out using foreign labour and foreign capital stock. But activity has also increased in the transport sector and other service sectors in the towns where the impact has been strongest. Traces of hydrocarbon have been found, but not in quantities that would provide a basis for extraction. In 2012, there were no offshore exploration activities, but the companies continued to examine seismic data for the seabed subsoil west of Greenland. Presumably that will also be the case this year. Interest in hydrocarbon exploration around Greenland remains considerable, but at present it is uncertain whether, and if so when, this will result in activity. Extraction of hydrocarbon from tar sands and from the subsoil via fracking has reduced the USA's dependence on imported hydrocarbon and also reduced corporate interest in hydrocarbon from areas where exploration and extraction costs are very high, as would be the case for environmentally responsible extraction in Greenlandic waters.

As regards minerals, there has also been considerable exploratory activity in recent years, and one company has now applied for permission to extract iron near the Nuuk Fiord. Other companies have indicated that they will soon be submitting applications for extraction in the areas where they have exploration licences. The applications will include extraction of "rare earth elements" in southern Greenland.

There has been some discussion of the Large-Scale Act passed by the Greenlandic parliament, Inatsisartut, in 2012. The Act concerns the establishment phase for mines and other large-scale projects where the establishment costs exceed kr. 5 billion. The Act permits remuneration of imported labour at Greenlandic minimum wages less board and lodging, etc. during this phase. It should be noted that investments of this

magnitude will always require import of foreign labour as the labour required in the establishment phase for the largest projects exceeds 10 per cent of the current Greenlandic labour force.

Following the election in March 2013 the new government has announced that it will adjust the Large-Scale Act and change the tax rules for extraction of raw materials so that extraction taxes, royalties, will play a larger role and the basis for ordinary corporate taxation will be correspondingly lower. The aim is to bring forward taxation without increasing the total tax payable on profit-making projects.

In economic terms, these issues increase the risk that mineral exploration activities will decline until the terms and conditions for extraction are known.

Combined with lower world market prices for a number of raw materials, this means that exploration activity for both mineral raw materials and hydrocarbon is expected to be low in 2013, which will contribute to a fall in overall economic activity in Greenland.

At present, the only active mine in the country is a gold mine in southern Greenland with some 80 employees; this mine had to suspend payments in the spring of 2013. So despite the often very high expectations in relation to raw materials for a number of years, extraction activity remains modest. Nevertheless, extraction of raw materials is still by far the most important potential export industry as a supplement to fisheries. But it is subject to great uncertainty.

The surest path to economic development in Greenland is to raise the level of education. Job opportunities in connection with extraction of raw materials can make an important contribution, but without a higher level of education this will not lead to a permanent, sustainable improvement of the economy. Nor can the public sector's long-term funding problems be solved without clear rules for how to use the revenue from raw materials. Back in 2008 legislation was passed to establish a raw materials fund, into which the government's raw materials revenue will be paid. However, the Economic Council finds that the framework for use of this revenue is too broad and imprecise, with a resultant risk that future revenue may be used to fund current expenditures, thereby leading to overheating of the economy. Imprudent use of the raw materials revenue may also create problems for future generations when the sources dry up – especially if the raw materials have not been used as a lever to raise the level of education substantially.

To ensure that large-scale raw materials extraction will bring positive developments in both the short and long term, it is important to detail the principles for use of the revenue, although this revenue is currently birds in the bush.

Public finances

In the period 2007-09, the Greenlandic government had a deficit on its current, investment and lending budget, CIL. The budget balanced in 2010, but the accounts for 2011 and the Finance Acts for 2012 and 2013 show new deficits, cf. Table 2. The government accounts for 2012 have not been published, but developments in government liquidity indicate a smaller CIL deficit than budgeted for.

The deficits are in part attributable to lending to the energy supply company Nukissiorfiit for construction of hydroelectric power plants. These investments will not only reduce the consumption of oil, they are also deemed to be profitable on market terms, but they have increased lending expenses by kr. 2-300 million p.a. since 2007. The Finance Act for 2012 operates with a current and investment budget, CI, that just balances, following moderate surpluses in the preceding two years.

MAIN ITEMS OF THE GOVERNMENT ACCOUNTS — Table 2

Kr. million	2006 R[1]	2007 R[1]	2008 R[1]	2009 R[1]	2010 R[1]	2011 R[1]	2012 PL[2]	2013 PL[2]
1. Operational expenses	2,462	2,604	2,787	2,973	3,078	2,777	2,901	2,746
2. Statutory expenses ...	750	788	837	850	852	870	885	1,005
3. Subsidies	1,532	1,530	1,591	2,229	1,534	1,809	1,881	2,034
4. Investment expenses	700	1,003	930	807	719	1,095	946	779
5. Total expenses	5,444	5,925	6,144	6,860	6,184	6,551	6,613	6,564
6. Agreed income[3]	3,485	3,555	3,661	3,799	3,828	3,876	3,936	3,962
7. Direct taxes	780	850	876	828	1,019	1,135	1,004	991
8. Indirect taxes	703	740	792	776	772	800	851	853
9. Other revenue	517	514	496	506	567	579	600	646
10. Total income	5,484	5,659	5,825	5,910	6,185	6,390	6,391	6,451
11. Actual CIL balance: (10)-(5)	40	-267	-318	-950	2	-161	-221	-114
12. CI balance	65	-28	-94	-514	207	49	0	1
13. Net lending to Nukissiorfiit	25	239	223	132	223	278	263	153
14. Increase in unused funds in Construction and Renovation Fund	8	146	88	87	-214	148	-82	-100
15. CIL balance adjusted (11)+(13)+(14)	73	118	-7	-773	52	265	-40	-51

Note: In 2011, block grants to local authorities were increased by kr. 302.6 million as care for the disabled was transferred to local authorities. Hence, this amount is transferred from the Greenlandic government's operational expenses to expenses for subsidies.

Source: Government Accounts, Finance Acts 2012 and 2013.

[1] Realised data.

[2] Preliminary data.

[3] Agreed income mainly comprises the block grant from the Danish government (kr. 3,633 million in 2013) and partnership and fisheries agreements with the EU (kr. 338 million in 2013).

When assessing the impact of public finances on activity, it is also necessary to look at the Construction and Renovation Fund. When a capital expenditure is approved, it is charged to the investment budget, and the amount is transferred to the Fund. When the project is actually carried out and paid for, often in subsequent years, it is financed via disbursements from the Fund. So an increase in the Fund's capital indicates that investment activity has been lower than projected in the CIL balance. In 2011, investment activity was kr. 148 million lower than the capital expenditure of kr. 1,095 million. Public-sector investment activity is set to decline in 2013 and the coming years.

Income is dominated by the category agreed income, of which the block grant from the Danish government constituted just over 90 per cent in 2011. The size of the block grant is specified in the Act on Greenland Self-Government and is indexed by the annual increase in the general price and wage index over the Danish Finance Act. If the Greenlandic government's expenses increase in real terms, a budget-balance requirement means that other sources of income must increase by a higher percentage than expenses if inflation is at the same level in Greenland as in Denmark. Since the same currency is used, this is usually the case. In January 2013, consumer prices were 1.7 per cent higher than in the preceding year.

Pressure on expenses as the population ages in the coming decades combined with the fact that a dominant source of income is frozen in real terms will constitute a major challenge for Greenland, and in its report the Economic Council assesses fiscal policy to be unsustainable in the long term. A fiscal indicator has been calculated which shows that tightening by around kr. 1 billion is required to prevent the government debt from rising up to 2040. This calls for a considerable effort since public operating expenses, including at local level, total around kr. 6 billion.

Greenland has a favourable point of departure in that the government has net financial assets. At end-2012, gross debt was kr. 600 million, corresponding to just under 5 per cent of GDP, while liquid assets in the form of bank deposits and bonds totalled approximately kr. 1 billion. However, liquid assets have shrunk considerably in recent years. At end-2007, the government held liquid assets of more than kr. 2 billion. The government holds a number of other assets which have not been included in this calculation, including housing loans. Many of these loans are without interest and amortisation for a number of years and hence difficult to value. The budgets operate with the government raising further loans of kr. 800 million until 2015.

In 2012, a Debt and Investment Strategy was presented, requiring public investments to be profitable and contribute to fiscal sustainability. One of the reasons is that a large number of infrastructure projects are looming on the horizon. The Transport Commission, which was set up after the transition to self-government in the summer of 2009, submitted a report in the winter of 2011. The calculated capital requirements for new or improved airports and extended port facilities amount to at least kr. 2-3 billion. Further investment wishes may be added to the list if private-sector companies want to invest in extraction of raw materials. So it will be necessary to prioritise the proposals according to their importance to the economy.

Speech by Lars Rohde at the annual meeting of the Danish Mortgage Banks' Federation, 9 April 2013

Since the autumn, the financial markets have seen positive development. Above all, tensions related to Southern European countries have eased, which has been reflected in falling interest rates and inflows of privatesector capital into these countries. Most recently, the turmoil in connection with Cyprus and Italy has had little effect on other EU member states. This shows that the financial markets have become more resilient. However, the positive trend is not yet reflected in the real economy of the euro area, which remains weak. At the same time, the USA and the rest of the world are in a moderate upswing.

Growth has been negative in the euro area since late 2011, and a further decline is expected in the first part of this year. Unemployment is rising, but with considerable variation between the member states. The Southern European countries are burdened by high unemployment, including high youth and long-term unemployment. In fact, the situation is so bad that it has triggered social and political unrest. That gives cause for concern. Moreover, there is a risk of reform fatigue in these member states, which will make it more difficult to implement reforms e.g. in the labour market, even though there is not really any alternative.

The negative growth in the euro area over the last year reflects falls in both investment and private consumption. Firms are consolidating rather than investing. This also applies to the financial enterprises, many of which presumably want to build up buffers against potential shocks. At the same time, credit conditions for households and the corporate sector have been tightened. The stricter regulatory requirements imposed by the authorities are likely to have a similar effect initially, but calculations by the ECB and others indicate that a more robust financial sector benefits society overall. At any rate, it is necessary to build up larger buffers in all parts of the economy in the wake of the financial crisis and the sovereign debt crisis.

The USA is struggling with its own budget problems, and there is political disagreement on how to tackle them. Lack of will to compromise will result in relatively strong fiscal tightening this year as automatic tax rises and cutbacks come into force. But perhaps this is not the worst that

thing could happen in a long-term perspective. There is an urgent need to balance revenue and expenses, even if it results in a remporary reduction of growth; otherwise there is a risk that confidence in government finances weakens considerably. This could have drastic implications.

On the bright side, consumer price inflation remains low and stable in the advanced economies. Although the central banks are pumping out liquidity, there are apparently no immediate inflationary pressures. But there is a risk that the very low nominal interest rates continue for too long. This could lead to inappropriate risk behaviour in an attempt to achieve higher returns. Uncertainty about the growth outlook for the global economy has diminished as the euro area turmoil has abated. The European Commission, among others, expects that the euro area economy will still be characterized by weak domestic demand in 2013, partly due to the ongoing necessary fiscal consolidation in a number of member states. As a result, growth is likely to be negative this year and only moderately positive next year. On the other hand, US economic growth is expected to accelerate over the coming years and will be close to its potential level by the end of 2014 despite the current budget problems. Conversely, the German economy, which has performed well for some time, slowed down towards the end of 2012. According to the European Commission's forecast, growth will be lower in Germany than in Denmark this year.

The Danish economy underperformed last year. Output fell by 0.5 per cent and is expected to pick up only slightly this year. Throughout 2012, households reduced consumption and investment. Danish households have high gross debt relative to disposable income, but the ratio stabilised in 2012. That is positive. They also hold considerable assets in the form of pension savings and free financial wealth, besides their homes.

Price inflation in Denmark has declined sharply in recent months, and Danmarks Nationalbank expects inflation to land at 1.3 per cent for 2013 overall. That is below the expected rate of wage increase. So despite low wage increases, the vast majority of wage earners are likely to see a small increase in real wages. Combined with the low interest rates, this will boost disposable income and hence also consumption. However, no strong recovery is expected. A flat trend in employment and a still vulnerable housing market will put a damper on growth. Private consumption and GDP are estimated to grow by only 0.7 per cent and 0.8 per cent respectively this year.

Unemployment has been virtually flat since 2010 at a level somewhat below that seen prior to the overheating of the economy in 2006-08. Danmarks Nationalbank expects unemployment to rise a little towards the summer of 2014, after which it will decline as the economy picks up.

At approximately 9 per cent of GDP in 2012, the financial savings surplus of Danish firms and households is very high. It is normal for the private sector savings surplus to reflect cyclical fluctuations, but this time around the pattern has been more pronounced than during previous recessions, also when compared with the situation in Denmark's neighbouring countries.

One of the reasons for the high savings surplus of Danish firms is the low investment activity, but has the situation evolved into an actual "investment crisis"? I think that would be an overstatement. Business investment plunged during the crisis in 2008-09, and since then its share of gross value added has been below the average for the last couple of decades. But this is purely attributable to building and construction investment. The investment ratio for plant and equipment has risen over the last couple of years and by the end of 2012 it was close to the average since the mid-1990s. This is not the first time investment in plant and equipment responds to the early signs of an upswing, while building investment follows suit at a later stage. So in Danmarks Nationalbank's opinion the current low level of investment is to a large extent a natural cyclical phenomenon, not an indication of a structural investment crisis.

In contrast, corporate savings are substantially higher than usual, also in a cyclical context. At some point, when confidence is restored, this could boost investment. The change could be swifter than expected. On the other hand, there is also a risk that foreign growth falls below expectations, with negative implications for the Danish economy.

Obviously, some sectors are struggling more than others, but that is unavoidable in a constantly changing world. Focus should be on creating attractive framework conditions for output in Denmark.

Viewed in isolation, weak wage increases improved competitiveness in 2012. The recent strengthening of the effective krone rate has had the opposite effect, but nevertheless, the deterioration of Denmark's competitiveness which occurred during the overheating in the 2000s is being rolled back by the market forces. With unemployment only slightly above its structural level, wage inflation has declined notably, and perhaps more than anyone had believed it would. This underscores the value of a well-functioning Danish labour market and contrasts with the situation in the debt-ridden Southern European countries, where unemployment reached a very high level before wage inflation could be reduced.

In other words, the Danish economy is adjusting to the situation and no political interference is required. Denmark is positioned for growth and demand is likely to normalise as the output gap gradually closes in the coming years.

The negative sentiment in the housing market has curbed economic growth in Denmark for some time. But now we are seeing the first budding signs of improvement. Prices have stabilised over the last year and have begun to rise in some market segments – particularly owner-occupied flats in the cities, notably in Greater Copenhagen. Although the milder winds may also blow across other parts of the market, there are bound to be areas that will not feel them and where prices will continue their downward trend. The housing market is becoming polarised. This is to a large extent due to migration within Denmark, with parts of the country experiencing negative population growth and economic decline, while e.g. the Copenhagen area is prospering.

In Danmarks Nationalbank's assessment, house prices are below the level to be expected – based on historical evidence – given the current levels of income, taxation and interest rates. On the basis of these underlying conditions it is estimated that house prices will rise slightly for Denmark overall in the coming years. This estimate is subject to considerable uncertainty. The difficult, not to say impossible, part is to predict exactly when the mood changes, irrespective of the underlying conditions.

The Danish mortgage credit system is unique. No doubt about it. The system has proved its worth during the financial crisis and the subsequent sovereign debt crisis, and these have been genuine stress tests. In spite of the odds, it has been possible to expand lending to households and corporates and sell bonds in the market – increasingly to investors abroad.

All along, investors have had confidence in the credit ratings of the bonds and the high liquidity in the mortgage credit market. Pension funds are large investors in mortgage bonds, and banks to a large degree use short-term mortgage bonds for liquidity management.

Hence it is hardly surprising that the Committee on Systemically Important Financial Institutions has identified the market for Danish mortgage bonds as systemically important. Actually, the Danish Mortgage Credit Act already provides for SIFI legislation in relation to mortgage credit. The Act lays down stringent rules for the relationship between lending by mortgage banks and the issuance of bonds to finance the loans. The aim is as far as possible to prevent mortgage banks from incurring other risks than the credit risk on the borrower.

The mortgage credit system is a natural part of owning a home in Denmark. The various loan types on offer are familiar to homeowners, and conversion of loans has become a favourite pastime. As homeowners we have got usedto a highly efficient lending system under which we pay a low marketinterest rate plus a fairly modest margin. We have be-

come used to a choiceof options – with or without amortisation, adjustable or fixed rates.

In principle, freedom of choice is a good thing for the individual citizen, but it is up to you to ensure that this does not jeopardise financial stability. I am inclined to say that your loan types have been a little too accommodative to customers. For example, it has been possible to mortgage up to 80 per cent of the value of the home for an adjustable-rate loan with deferred amortisation. This has been very attractive to customers, but has increased the risks incurred by the mortgage banks.

Firstly, the extensive use of adjustable-rate loans has introduced a refinancing risk which did not exist under the old mortgage-credit model since all loans were "prefinanced". If a mortgage bank which has issued fixed-rate loans only becomes distressed, it can stop new lending and avoid having to go to the market for financing. With adjustable-rate loans, the mortgage bank must go to the market regularly, "come hell or high water".

So as a result of the long-term adjustable-rate loans financed via bonds with much shorter maturities, the mortgage banks' balance sheets now have a bank-like characteristic which they did not use to have. The mortgage bank might experience a situation resembling a "run". This type of risk did not exist previously.

The sector has worked actively with this issue, e.g. by spreading auctions. Whereas all adjustable-rate loans were previously refinanced at the same time, auctions now take place several times a year. Around half of the refinancing now takes place in other months than December. As far as I know, you are also working actively to move customers further along the yield curve, e.g. via changed price structures and advisory services. This is good news and will reduce the immediate risk of a doomsday scenario.

But there is another potentially destabilising mechanism. If higher interest rates on adjustable-rate loans undermine the borrowers' ability to pay, rising interest rates may hit the mortgage banks like a boomerang by way of increased losses which could ultimately jeopardise their solvency.

Danmarks Nationalbank's analyses show that households would currently be resilient to fairly large interest-rate rises without any threat to financial stability.

Nevertheless, the combination of credit risk and considerable refinancing risk can be toxic, given the popularity of adjustable-rate loans. A negative spiral may arise if there is the slightest doubt about the mortgage banks' ability to meet their obligations to investors.

In other words, the widespread use of adjustable-rate loans makes it necessary to structure the mortgage-credit business with a view to retaining investor confidence. This can be achieved by strengthening the robustness of the mortgage banks to losses by reducing loan-to-value ratios, increasing earnings – i.e. administration margins – or boosting capitalisation. In my opinion, reduction of the loan-to-value – LTV – ratio for adjustable-rate loans to, say, 60 per cent would be a good and simple way to address this challenge. And no legislation is required; it can be achieved completely voluntarily.

Secondly, issuance of covered bonds and covered mortgage bonds has introduced a new risk type, since the LTV ratio must be kept at 80 per cent or less throughout the maturity of the loan. If that is not the case, you must pledge top-up collateral. In this way the bonds become more collateralized as the LTV ratios must always be observed. That is positive – also in relation to refinancing risk. But the extra collateral must be financed, and it may turn out to be quite expensive.

The solution is not to introduce the possibility of opting in or out of the obligations relating to covered bonds or to be more complacent about meeting the top-up requirements when housing prices fall. That could dent the credibility of the system. If doubts arise as to a mortgage bank's willingness and ability to defend the status of a capital centre issuing covered bonds, investors will perceive this as an increase in the credit risk on not only that capital centre, but also the rest of the mortgage bank. And to make things worse, the lack of confidence is likely to spread to the other mortgage banks too, thereby jeopardising financial stability.

If a mortgage bank chooses to issue covered bonds, it must take on the responsibility linked to ensuring the robustness of its business, even if housing prices fall. It is possible to ensure this robustness within the existing legislative framework, e.g. by introducing lower LTV ratios for loans based on covered bonds or by ensuring a sufficient buffer of capital well in advance.

Thirdly, the first deferred-amortisation loans, which were introduced about 10 years ago, are due to expire soon. The 10-year limit was introduced to ensure that mortgage banks took the value of the underlying collateral into account. And that is indeed relevant today.

A deferred-amortisation loan may be the right choice for the individual homeowner. But since mortgage banks granted deferred-amortisation loans right up to the LTV ratio of 80 per cent in the boom years with soaring housing prices, it is hardly surprising that some homeowners now find that their properties cannot sustain the loans.

This has triggered a debate on whether it is necessary to take steps to expand the existing framework for prolonging deferred-amortisation

loans. I cannot recommend that. It would not support the robustness of the Danish mortgage credit system if homeowners do not reduce at least the peak of the loan that exceeds 80 per cent, especially since the rate of interest is currently close to zero – much lower than it was when these loans were raised. And according to Danmarks Nationalbank's calculations most homeowners are able to meet the extra costs of financing the remainder via a more expensive bank loan with amortisation.

So all in all, I think you are able to address these challenges yourselves if you take a slightly more conservative approach to lending. Avoid going right to the limits – that will increase robustness.

The first meeting of the Systemic Risk Council was held yesterday. The Council discussed the current situation and risks to financial stability in Denmark.

I am pleased that the Council is now in operation. An important lesson from the financial crisis has been that it is necessary to focus on systemic risk. The Council is to contribute to preventing and addressing future systemic financial risks, thereby shielding the real economy and the financial system against a new financial crisis. Obviously we cannot avoid normal cyclical fluctuations. The Council will regularly monitor risk developments and issue observations, warnings and recommendations to the relevant authorities.

We have a considerable task ahead of us and there are many important issues that I look forward to discussing – and learning more about. I have taken on the task of chairman with a great degree of humility.

Thank you for your attention.

Press Releases

2 MAY 2013: INTEREST RATE REDUCTION

Effective from 3 May 2013, Danmarks Nationalbank's lending rate is reduced by 0.10 percentage point. The interest rate on certificates of deposit, the current account rate and the discount rate are unchanged.

The interest rate reduction is a consequence of the reduction by the European Central Bank of its rate on the main refinancing operations by 0.25 percentage point. The European Central Bank has kept the rate on the marginal deposit facility unchanged. The low monetary policy rates leave a limited leeway for a reduction of Danmarks Nationalbank's lending rate.

In the current situation where the monetary policy counterparties have a large need to place funds at Danmarks Nationalbank, the monetary deposit rates determine the money market rates and the exchange rate.

Effective from the above date, Danmarks Nationalbank's interest rates are:

Lending rate: 0.20 per cent
Certificates of deposit: -0.10 per cent
Current account: 0.0 per cent
Discount rate: 0.0 per cent

Tables

SYMBOLS AND SOURCES

0 Magnitude nil or less than one half of unit employed.
… Data not available or of negligible interest.

Some of the most recent statistics may be provisional. Due to rounding-off there may be small differences between the sum of the individual figures and the totals stated.

The Tables section of this publication is closed on 4 June 2013.

Danmarks Nationalbank is the source for Tables 1-17, 19-21 and 26-27, while the Nasdaq OMX Copenhagen is the source for series of bond yields and the share-price index in Table 2. Statistics Denmark is the source for Tables 18 and 22-25. The calculations in Tables 23 and 27 have been made by Danmarks Nationalbank on the basis of data from Statistics Denmark and OECD.

INTEREST RATES — Table 1

Effective end-of-year/from	Danmarks Nationalbank's interest rates				The ECB's interest rate
	Lending	Certificates of deposit	Current account deposits	Discount rate	Main refinancing operations, fixed rate[1]
	Per cent per annum				
2008	3.75	3.75	3.50	3.50	2.50
2009	1.20	0.95	0.85	1.00	1.00
2010	1.05	0.70	0.60	0.75	1.00
2011	0.70	0.30	0.25	0.75	1.00
2012	0.20	-0.20	0.00	0.00	0.75
2011 26 Aug	1.55	1.10	1.00	1.25	1.50
16 Sep	1.55	1.00	0.90	1.25	1.50
4 Nov	1.20	0.65	0.55	1.00	1.25
9 Dec	0.80	0.40	0.30	0.75	1.00
16 Dec	0.70	0.30	0.25	0.75	1.00
2012 25 May	0.60	0.20	0.15	0.75	1.00
1 Jun	0.45	0.05	0.00	0.25	1.00
6 Jul	0.20	-0.20	0.00	0.00	0.75
2013 25 Jan	0.30	-0.10	0.00	0.00	0.75
3 May	0.20	-0.10	0.00	0.00	0.50
4 Jun	0.20	-0.10	0.00	0.00	0.50

[1] Until 7 October 2008 minimum bid rate.

INTEREST RATES AND SHARE-PRICE INDEX — Table 2

Average	Inter-bank interest rate, 3-months CIBOR	Yield to maturity		Share-price index OMXC20 (prev.KFX), end of period
		10-year central-government bond	30-year mortgage bond	
	Per cent per annum			3.7.89=100
2008	5.28	4.28	6.08	247.72
2009	2.48	3.59	5.53	336.69
2010	1.25	2.93	4.68	457.58
2011	1.38	2.73	4.72	389.95
2012	0.62	1.40	3.74	496.16
May 12	0.90	1.37	3.94	432.26
Jun 12	0.62	1.26	3.61	446.04
Jul 12	0.41	1.10	3.58	484.14
Aug 12	0.31	1.15	3.55	490.06
Sep 12	0.32	1.31	3.60	493.22
Oct 12	0.33	1.29	3.59	485.28
Nov 12	0.30	1.11	3.52	490.93
Dec 12	0.28	1.07	3.45	496.16
Jan 13	0.31	1.61	3.50	535.73
Feb 13	0.33	1.73	3.34	546.55
Mar 13	0.27	1.59	3.26	534.47
Apr 13	0.26	1.42	3.14	539.28
May 13	0.24	1.45	3.10	535.37

SELECTED ITEMS FROM DANMARKS NATIONALBANK'S BALANCE SHEET — Table 3

End of period	The foreign-exchange reserve (net)	Notes and coin in circulation	The central government's account with Danmarks Nationalbank	The banks' and the mortgage banks' net position with Danmarks Nationalbank			
				Certificates of deposit	Deposits (current account)	Loans	Total net position
	Kr. billion						
2008	211.7	61.3	262.8	118.5	9.7	240.9	-112.7
2009	394.5	60.8	212.4	166.2	22.1	104.2	84.1
2010	428.7	62.5	179.4	132.5	14.5	9.3	137.8
2011	491.9	62.4	225.8	150.0	23.2	24.0	149.1
2012	501.6	65.8	163.7	184.1	102.6	66.4	220.3
Apr 12	482.0	61.7	208.5	166.2	16.2	20.0	162.4
May 12	502.4	63.3	217.7	180.1	13.8	20.0	173.9
Jun 12	511.6	63.4	215.1	188.1	18.8	22.2	184.7
Jul 12	514.4	63.8	194.3	157.7	66.9	19.1	205.5
Aug 12	514.4	63.2	213.8	151.1	55.2	19.5	186.7
Sep 12	513.5	63.2	205.2	181.5	65.2	53.2	193.5
Oct 12	513.4	62.8	209.7	141.6	98.7	53.6	186.6
Nov 12	512.1	63.8	205.5	143.4	99.4	53.6	189.2
Dec 12	504.0	65.8	162.0	184.1	102.6	66.4	220.3
Jan 13	495.6	62.7	171.4	161.7	94.3	53.2	202.8
Feb 13	483.2	62.0	205.9	128.2	80.0	53.4	154.8
Mar 13	481.9	64.0	174.2	147.0	94.4	52.1	189.4
Apr 13	491.7	63.3	182.0	157.1	82.8	50.3	189.6

FACTORS AFFECTING THE BANKS' AND THE MORTGAGE BANKS' NET POSITION WITH DANMARKS NATIONALBANK

Table 4

	Central-government finance			Net purchase of foreign exchange by Danmarks Nationalbank			Net purchase of bonds by Danmarks Nationalbank	Other factors	The banks' and the mortgage banks' net position with Danmarks Nationalbank	
	Domestic gross financing requirement	Sales of domestic central-government securities, etc.	Liquidity effect	Interventions to purchase foreign exchange, net	Other	Total			Change in net position	End of period
	Kr. billion									
2008	-11.9	99.6	-111.5	-19.9	0.1	-19.8	0.6	24.9	-105.8	-112.7
2009	178.6	123.8	54.8	153.6	17.1	170.7	6.5	-35.3	196.8	84.1
2010	169.6	160.7	8.8	45.7	4.3	50.0	-0.4	-4.7	53.7	137.8
2011	93.9	143.8	-49.9	53.3	2.5	55.8	0.9	2.7	11.4	149.1
2012	146.7	105.4	41.3	31.7	2.4	34.1	0.9	-4.5	71.1	220.3
Apr 12	24.4	19.2	5.3	0.0	-0.4	-0.4	-0.1	-2.1	2.6	162.4
May 12	4.4	22.1	-17.7	29.6	-0.5	29.1	0.5	-0.4	11.5	173.9
Jun 12	11.5	5.5	6.0	7.3	-0.1	7.2	-0.6	-0.5	10.8	184.7
Jul 12	39.3	17.7	21.6	0.0	2.1	2.1	0.6	-3.6	20.8	205.5
Aug 12	-10.4	9.0	-19.5	0.0	0.0	0.0	0.3	0.4	-18.8	186.7
Sep 12	8.3	0.8	7.5	-0.6	0.8	0.2	-0.1	-0.9	6.8	193.5
Oct 12	12.3	16.2	-3.8	-0.5	-0.1	-0.6	0.1	-2.5	-6.9	186.6
Nov 12	15.2	11.8	3.4	-1.5	0.2	-1.3	0.2	-0.6	2.6	189.2
Dec 12	25.6	-15.3	40.9	-2.6	-2.8	-5.4	-0.3	-4.2	31.1	220.3
Jan 13	4.8	11.8	-7.0	-11.9	3.5	-8.4	-0.4	-1.7	-17.5	202.8
Feb 13	-39.6	15.5	-55.1	0.0	8.2	8.2	0.5	-1.7	-48.0	154.8
Mar 13	14.4	-17.2	31.6	0.0	-1.0	-1.0	0.1	3.9	34.5	189.4
Apr 13	15.2	14.1	1.0	0.0	1.0	1.0	0.0	-1.8	0.3	189.6

SELECTED ITEMS FROM THE CONSOLIDATED BALANCE SHEET OF THE MFI SECTOR

Table 5

End of period	Total balance	Assets				Liabilities		Foreign assets, net[1]
		Domestic lending		Domestic securities		Domestic deposits	Bonds, etc. issued	
		Public sector	Private sector	Bonds, etc.	Shares, etc.			
	Kr. billion							
2008	6,286.4	129.1	3,724.3	40.6	56.7	1,487.5	1,508.4	-407.9
2009	5,968.5	135.9	3,647.9	78.2	65.5	1,442.8	1,650.9	-417.6
2010	6,159.1	146.6	3,696.6	41.8	87.9	1,410.1	1,660.4	-397.6
2011	6,310.3	148.8	3,640.2	45.1	82.4	1,430.5	1,740.0	-330.9
2012	6,139.1	157.4	3,637.5	42.6	98.8	1,419.0	1,796.6	-376.8
Apr 12	6,374.7	148.5	3,704.5	55.5	86.3	1,449.7	1,818.9	-263.6
May 12	6,705.5	149.5	3,695.3	58.4	86.1	1,465.5	1,829.7	-268.1
Jun 12	6,585.3	151.7	3,712.7	40.2	94.4	1,465.9	1,815.4	-243.5
Jul 12	6,581.6	152.4	3,690.7	42.1	96.7	1,458.9	1,819.7	-337.8
Aug 12	6,618.6	146.9	3,685.5	47.7	96.9	1,480.9	1,836.5	-308.7
Sep 12	6,532.3	148.3	3,689.6	33.4	98.4	1,461.9	1,836.4	-320.8
Oct 12	6,442.5	149.2	3,666.5	36.6	99.2	1,474.7	1,814.8	-294.5
Nov 12	6,507.5	154.5	3,650.4	44.8	97.9	1,459.4	1,829.4	-333.8
Dec 12	6,139.1	157.4	3,637.5	42.6	98.8	1,419.0	1,796.6	-376.8
Jan 13	6,139.0	153.2	3,619.5	53.1	99.7	1,451.5	1,810.5	-281.9
Feb 13	6,177.6	149.2	3,622.2	63.4	100.3	1,456.2	1,841.7	-268.1
Mar 13	6,264.2	149.6	3,638.7	54.4	100.3	1,439.6	1,849.9	-258.6
Apr 13	6,205.1	149.8	3,647.3	49.3	98.0	1,457.3	1,866.6	-224.9
	Change compared with previous year, per cent							
2008	…	9.8	11.0	-6.1	-10.7	21.5	0.2	…
2009	…	5.3	-2.1	92.4	15.5	-3.0	9.4	…
2010	…	7.9	1.3	-46.6	34.3	-2.3	0.6	…
2011	…	1.5	-1.5	7.9	-6.3	1.4	4.8	…
2012	…	5.8	-0.1	-5.5	19.9	-0.8	3.3	…
Apr 12	…	2.1	1.2	11.2	-6.3	-0.9	8.0	…
May 12	…	4.1	1.6	-0.3	-2.3	0.0	6.9	…
Jun 12	…	2.9	1.7	-33.0	8.0	0.5	5.9	…
Jul 12	…	2.6	1.6	-27.1	10.9	-0.3	5.2	…
Aug 12	…	3.0	1.5	-29.0	15.9	-0.4	5.8	…
Sep 12	…	3.5	0.9	-51.8	23.3	-3.3	5.8	…
Oct 12	…	3.2	0.5	-49.8	21.9	-2.3	5.1	…
Nov 12	…	6.5	0.5	-13.0	18.3	0.0	4.1	…
Dec 12	…	5.8	-0.1	-5.5	19.9	-0.8	3.3	…
Jan 13	…	3.3	-1.4	26.6	16.2	0.2	0.7	…
Feb 13	…	2.2	-1.2	-15.1	15.2	-2.2	1.6	…
Mar 13	…	1.5	-1.3	-5.9	16.8	1.8	1.7	…
Apr 13	…	0.9	-1.5	-11.1	13.5	0.5	2.6	…

Note: The MFI sector includes Danish monetary financial institutions, i.e. banks and mortgage banks, other credit institutions, money-market funds and Danmarks Nationalbank.

[1] The net foreign assets of the MFI sector has been compiled as the difference between all assets and liabilities vis-a-vis non-residents.

MONEY STOCK Table 6

End of period	Bank-notes and coin in circula-tion[1]	Deposits on demand	M1	Time deposits with original maturity =<2 years	Deposits at notice with original maturity =< 3 months	M2	Repu-rchase agree-ments	Bonds, etc. issued with original maturity =< 2 years	M3
	Kr. billion								
2008	50.4	702.8	753.2	286.4	18.4	1,058.0	4.0	57.0	1,119.1
2009	48.5	744.6	793.1	203.0	19.6	1,015.7	10.9	143.0	1,169.7
2010	52.6	747.8	800.4	143.9	18.0	962.3	58.2	241.0	1,261.8
2011	52.5	727.2	779.7	134.1	17.2	931.0	59.1	196.5	1,186.9
2012	54.6	796.8	851.4	115.7	19.1	986.2	43.2	181.6	1,211.1
Apr 12	53.5	752.7	806.3	133.3	20.0	959.6	64.0	302.2	1,326.0
May 12	54.0	760.1	814.1	135.7	20.0	969.8	63.2	283.7	1,316.9
Jun 12	53.7	765.7	819.4	132.8	20.1	972.4	62.8	288.3	1,323.6
Jul 12	53.4	781.9	835.4	129.7	20.4	985.4	61.9	275.8	1,323.4
Aug 12	53.5	787.9	841.4	128.8	19.9	990.1	59.7	279.9	1,329.9
Sep 12	53.5	785.6	839.1	121.0	19.8	979.9	60.2	275.3	1,315.6
Oct 12	53.5	797.8	851.3	126.3	18.6	996.2	52.9	220.3	1,269.6
Nov 12	54.1	797.6	851.7	119.8	18.7	990.2	48.7	181.4	1,220.5
Dec 12	54.6	796.8	851.4	115.7	19.1	986.2	43.2	181.6	1,211.1
Jan 13	53.6	809.4	863.0	132.1	19.3	1,014.3	37.9	118.5	1,170.8
Feb 13	53.5	794.8	848.3	124.6	19.4	992.3	27.8	114.9	1,135.2
Mar 13	53.3	799.2	852.5	125.3	19.8	997.6	34.1	104.1	1,136.0
Apr 13	54.2	818.5	872.6	121.6	20.1	1,014.4	33.0	46.0	1,093.6
	Change compared with previous year, per cent								
2008	…	…	-0.2	…	…	8.2	…	…	7.0
2009	…	…	5.3	…	…	-4.0	…	…	4.5
2010	…	…	0.9	…	…	-5.3	…	…	7.9
2011	…	…	-2.6	…	…	-3.3	…	…	-5.9
2012	…	…	9.2	…	…	5.9	…	…	2.0
Apr 12	…	…	0.0	…	…	-0.2	…	…	19.7
May 12	…	…	0.7	…	…	0.3	…	…	17.4
Jun 12	…	…	4.1	…	…	2.8	…	…	18.6
Jul 12	…	…	4.2	…	…	2.1	…	…	14.3
Aug 12	…	…	7.0	…	…	4.9	…	…	16.4
Sep 12	…	…	7.3	…	…	4.4	…	…	11.3
Oct 12	…	…	8.5	…	…	6.2	…	…	10.9
Nov 12	…	…	9.3	…	…	6.2	…	…	4.2
Dec 12	…	…	9.2	…	…	5.9	…	…	2.0
Jan 13	…	…	10.3	…	…	7.2	…	…	-9.8
Feb 13	…	…	9.0	…	…	5.4	…	…	-12.2
Mar 13	…	…	10.1	…	…	7.6	…	…	-14.6
Apr 13	…	…	8.2	…	…	5.7	…	…	-17.5

[1] Notes and coin in circulation, excluding the banks' holdings.

SELECTED ITEMS FROM THE BALANCE SHEET OF THE BANKS — Table 7

End of period	Total balance	Assets					Liabilities	
		Lending to MFIs	Domestic lending			Holdings of securities	Loans from MFIs	Deposits
			Total	of which: Households, etc.	of which: Non-financial companies			
	Kr. billion							
2008	4,568.5	974.6	1,546.3	586.8	603.3	1,092.1	1,444.2	1,424.2
2009	4,147.6	876.1	1,359.1	575.7	529.7	1,203.5	1,168.8	1,427.4
2010	4,197.4	902.7	1,334.6	570.2	494.7	1,157.1	1,118.3	1,489.7
2011	4,234.7	841.3	1,230.0	562.0	434.1	1,151.6	1,052.5	1,483.6
2012	4,168.6	835.1	1,169.8	538.4	390.0	1,233.7	1,139.7	1,496.1
Apr 12	4,246.7	800.8	1,277.3	547.6	445.5	1,138.9	1,096.9	1,451.3
May 12	4,534.0	808.2	1,263.0	542.6	435.6	1,155.2	1,148.7	1,452.6
Jun 12	4,448.2	881.6	1,272.9	552.6	442.2	1,161.7	1,237.1	1,500.4
Jul 12	4,491.4	875.1	1,247.4	544.0	426.9	1,151.6	1,161.1	1,504.9
Aug 12	4,517.3	878.8	1,231.7	540.1	417.5	1,169.0	1,175.0	1,512.1
Sep 12	4,533.5	848.4	1,233.0	545.7	414.2	1,204.3	1,201.4	1,506.3
Oct 12	4,412.5	833.6	1,206.4	536.4	404.3	1,175.1	1,142.7	1,499.6
Nov 12	4,460.7	880.2	1,187.1	532.4	403.9	1,174.8	1,204.9	1,471.6
Dec 12	4,168.6	835.1	1,169.8	538.4	390.0	1,233.7	1,139.7	1,496.1
Jan 13	4,097.1	776.1	1,150.8	527.9	382.1	1,226.8	1,083.0	1,496.0
Feb 13	4,058.5	794.2	1,143.6	524.8	387.6	1,200.5	1,052.4	1,510.6
Mar 13	4,181.2	878.0	1,157.5	529.5	389.1	1,185.3	1,146.0	1,551.2
Apr 13	4,103.9	795.7	1,164.3	522.0	387.1	1,174.4	1,082.5	1,546.2
	Change compared with previous year, per cent							
2008	…	5.4	15.9	5.3	9.3	2.5	0.7	5.2
2009	…	-10.1	-12.1	-1.9	-12.2	10.2	-19.1	0.2
2010	…	3.0	-1.8	-1.0	-6.6	-3.9	-4.3	4.4
2011	…	-6.8	-7.8	-1.4	-12.3	-0.5	-5.9	-0.4
2012	…	-0.7	-4.9	-4.2	-10.2	7.1	8.3	0.8
Apr 12	…	10.0	-0.7	-2.2	-6.9	1.0	21.5	0.5
May 12	…	9.2	0.4	-2.4	-5.7	3.8	38.1	-2.9
Jun 12	…	20.6	0.0	-2.1	-4.6	2.7	30.3	2.7
Jul 12	…	21.0	-0.5	-2.9	-5.0	0.4	23.8	0.8
Aug 12	…	19.9	-0.5	-3.5	-6.5	2.6	23.2	2.4
Sep 12	…	11.8	-2.5	-3.7	-8.7	7.5	21.5	1.3
Oct 12	…	13.5	-3.7	-4.5	-9.7	4.7	16.8	3.2
Nov 12	…	17.8	-3.4	-4.4	-9.6	5.0	23.3	0.6
Dec 12	…	-0.7	-4.9	-4.2	-10.2	7.1	8.3	0.8
Jan 13	…	1.7	-8.5	-4.7	-11.4	4.9	3.0	0.3
Feb 13	…	-1.0	-8.1	-4.7	-10.2	4.9	-3.6	5.1
Mar 13	…	4.1	-8.3	-5.2	-11.1	-0.6	-3.9	8.0
Apr 13	…	-0.6	-8.8	-4.7	-13.1	3.1	-1.3	6.5

Note: Excluding Danish banks' units abroad.

SELECTED ITEMS FROM THE BALANCE SHEET OF THE MORTGAGE BANKS Table 8

End of period	Assets						Liabilities	
			Domestic lending					
				of which:				
	Total balance	Lending to MFIs	Total	Households, etc.	Non-financial companies	Holdings of securities	Loans from MFIs	Bonds, etc. issued
	Kr. billion							
2008	3,322.7	428.5	2,164.6	1,629.6	466.7	633.5	474.4	2,582.3
2009	3,827.1	512.2	2,278.8	1,712.2	501.0	927.6	539.3	3,048.3
2010	4,009.6	572.6	2,347.1	1,749.2	532.0	976.9	632.1	3,139.3
2011	3,996.4	602.9	2,396.2	1,775.5	558.1	869.9	660.9	3,135.3
2012	4,175.0	673.6	2,454.0	1,811.9	577.9	902.2	657.8	3,301.7
Apr 12	3,397.1	553.6	2,408.6	1,783.2	562.3	321.7	578.2	2,641.0
May 12	3,440.9	548.4	2,414.3	1,787.5	564.0	354.6	580.0	2,685.8
Jun 12	3,611.3	630.3	2,424.0	1,794.2	565.8	434.6	628.5	2,772.2
Jul 12	3,557.0	616.2	2,427.0	1,797.1	566.5	382.4	630.6	2,735.3
Aug 12	3,734.3	669.0	2,432.6	1,800.8	567.4	489.4	680.7	2,855.4
Sep 12	3,843.8	713.8	2,437.1	1,802.5	570.2	561.1	693.2	2,939.0
Oct 12	3,552.9	626.4	2,441.4	1,805.2	571.9	350.0	615.9	2,734.3
Nov 12	3,830.2	637.8	2,448.0	1,808.3	575.7	599.0	662.6	2,969.7
Dec 12	4,175.0	673.6	2,454.0	1,811.9	577.9	902.2	657.8	3,301.7
Jan 13	3,506.9	595.2	2,450.5	1,814.5	579.2	318.4	591.3	2,710.4
Feb 13	3,580.4	618.0	2,455.1	1,817.1	580.6	356.8	594.4	2,780.0
Mar 13	3,847.4	692.7	2,456.7	1,819.6	578.7	553.1	649.8	2,984.5
Apr 13	3,483.9	605.2	2,457.4	1,821.4	577.5	297.0	593.5	2,718.0
	Change compared with previous year, per cent							
2008	…	18.1	7.4	5.2	15.5	-2.4	37.8	3.5
2009	…	19.5	5.3	5.1	7.4	46.4	13.7	18.0
2010	…	11.8	3.0	2.2	6.2	5.3	17.2	3.0
2011	…	5.3	2.1	1.5	4.9	-11.0	4.6	-0.1
2012	…	11.7	2.4	2.1	3.6	3.7	-0.5	5.3
Apr 12	…	22.6	2.2	1.8	4.3	8.2	14.1	6.4
May 12	…	20.9	2.2	1.9	3.9	16.0	12.6	7.3
Jun 12	…	24.0	2.5	2.3	4.0	47.0	18.9	10.5
Jul 12	…	27.9	2.5	2.3	3.9	27.1	18.8	8.7
Aug 12	…	35.6	2.4	2.2	3.5	50.4	24.5	11.5
Sep 12	…	24.3	2.6	2.4	3.9	29.3	16.0	9.1
Oct 12	…	22.7	2.6	2.4	3.6	3.9	11.2	5.6
Nov 12	…	23.2	2.6	2.3	3.9	43.4	19.4	10.4
Dec 12	…	11.7	2.4	2.1	3.6	3.7	-0.5	5.3
Jan 13	…	9.5	2.2	2.1	3.7	-1.0	3.9	2.8
Feb 13	…	7.9	2.2	2.0	3.8	-4.6	0.5	3.1
Mar 13	…	2.8	2.0	2.1	3.0	3.4	0.8	3.3
Apr 13	…	9.3	2.0	2.1	2.7	-7.7	2.6	2.9

LENDING TO RESIDENTS BY THE BANKS AND THE MORTGAGE BANKS Table 9

End of period	Total lending			The banks' lending			The mortgage banks' lending		
	Total	Households, etc.	Business, etc.	Total	Households, etc.	Business, etc.	Total	Households, etc.	Business, etc.
	Kr. billion								
2008	3,787.5	2,216.4	1,456.4	1,622.9	586.8	978.3	2,164.6	1,629.6	478.1
2009	3,682.4	2,287.9	1,283.8	1,403.6	575.7	770.0	2,278.8	1,712.2	513.8
2010	3,704.3	2,319.4	1,281.8	1,357.2	570.2	738.6	2,347.1	1,749.2	543.1
2011	3,644.8	2,337.5	1,216.5	1,248.6	562.0	646.3	2,396.2	1,775.5	570.1
2012	3,630.8	2,350.4	1,187.3	1,176.8	538.4	598.1	2,454.0	1,811.9	589.2
Apr 12	3,693.6	2,330.8	1,274.1	1,285.0	547.6	698.7	2,408.6	1,783.2	575.4
May 12	3,685.0	2,330.1	1,264.5	1,270.8	542.6	688.0	2,414.3	1,787.5	576.5
Jun 12	3,704.7	2,346.8	1,265.3	1,280.6	552.6	686.8	2,424.0	1,794.2	578.5
Jul 12	3,684.3	2,341.1	1,250.2	1,257.2	544.0	671.0	2,427.0	1,797.1	579.3
Aug 12	3,674.1	2,340.9	1,245.5	1,241.5	540.1	665.3	2,432.6	1,800.8	580.2
Sep 12	3,679.9	2,348.2	1,242.1	1,242.8	545.7	659.6	2,437.1	1,802.5	582.5
Oct 12	3,654.8	2,341.6	1,223.1	1,213.4	536.4	639.0	2,441.4	1,805.2	584.1
Nov 12	3,642.1	2,340.7	1,210.8	1,194.2	532.4	623.2	2,448.0	1,808.3	587.6
Dec 12	3,630.8	2,350.4	1,187.3	1,176.8	538.4	598.1	2,454.0	1,811.9	589.2
Jan 13	3,610.0	2,342.3	1,178.0	1,159.4	527.9	587.3	2,450.5	1,814.5	590.7
Feb 13	3,607.3	2,342.0	1,179.7	1,152.2	524.8	587.5	2,455.1	1,817.1	592.2
Mar 13	3,622.8	2,349.0	1,187.6	1,166.1	529.5	597.3	2,456.7	1,819.6	590.4
Apr 13	3,630.3	2,343.4	1,201.7	1,172.9	522.0	612.2	2,457.4	1,821.4	589.5
	Change compared with previous year, per cent								
2008	11.8	5.2	24.2	18.3	5.3	28.6	7.4	5.2	15.9
2009	-2.8	3.2	-11.9	-13.5	-1.9	-21.3	5.3	5.1	7.5
2010	0.6	1.4	-0.2	-3.3	-1.0	-4.1	3.0	2.2	5.7
2011	-1.6	0.8	-5.1	-8.0	-1.4	-12.5	2.1	1.5	5.0
2012	-0.4	0.5	-2.4	-5.7	-4.2	-7.5	2.4	2.1	3.3
Apr 12	0.9	0.8	1.5	-1.5	-2.2	-0.8	2.2	1.8	4.6
May 12	1.3	0.8	2.4	-0.4	-2.4	1.1	2.2	1.9	4.0
Jun 12	1.3	1.2	2.3	-0.8	-2.1	0.8	2.5	2.3	4.0
Jul 12	1.2	1.1	2.1	-1.2	-2.9	0.6	2.5	2.3	4.0
Aug 12	1.1	0.8	2.1	-1.2	-3.5	0.8	2.4	2.2	3.6
Sep 12	0.6	0.9	0.2	-3.1	-3.7	-2.8	2.6	2.4	3.8
Oct 12	0.1	0.7	-0.9	-4.5	-4.5	-4.7	2.6	2.4	3.6
Nov 12	0.2	0.7	-0.6	-4.3	-4.4	-4.5	2.6	2.3	3.8
Dec 12	-0.4	0.5	-2.4	-5.7	-4.2	-7.5	2.4	2.1	3.3
Jan 13	-1.7	0.5	-6.0	-9.1	-4.7	-14.0	2.2	2.1	3.6
Feb 13	-1.6	0.4	-5.3	-8.7	-4.7	-12.9	2.2	2.0	3.5
Mar 13	-1.8	0.4	-5.6	-8.9	-5.2	-12.7	2.0	2.1	2.7
Apr 13	-1.7	0.5	-5.7	-8.7	-4.7	-12.4	2.0	2.1	2.4

Note: Including lending in Danish banks' units abroad. The category "Business etc." includes non-financial companies, pension and insurance companies, other financial intermediaries (except banks and mortgage banks) and unknown sector.

THE MORTGAGE BANKS' LENDING BROKEN DOWN BY TYPE Table 10

End of period	Index-linked lending	Fixed-rate lending	Adjustable-rate lending		Total	of which:	
			Total	of which =<1 year		Lending in foreign currency	Instalment-free lending[1]
	Kr. billion						
2008	72.4	915.9	1,177.1	900.3	2,165.4	155.3	626.4
2009	68.3	752.6	1,460.3	1,106.6	2,281.2	211.4	695.1
2010	63.9	656.8	1,628.3	1,190.5	2,349.0	232.3	740.6
2011	59.8	619.2	1,715.3	1,229.5	2,394.4	219.0	780.2
2012	56.3	616.3	1,783.3	1,246.9	2,455.9	195.8	805.3
Apr 12	60.7	596.6	1,752.8	1,275.0	2,410.1	208.9	789.5
May 12	60.6	598.5	1,757.4	1,275.8	2,416.5	208.2	792.8
Jun 12	58.9	599.9	1,768.3	1,276.4	2,427.0	208.1	798.3
Jul 12	58.8	601.8	1,768.5	1,273.7	2,429.1	206.8	800.1
Aug 12	58.7	605.5	1,770.5	1,274.2	2,434.7	206.6	801.5
Sep 12	58.7	605.5	1,774.4	1,266.2	2,438.5	206.0	802.5
Oct 12	58.6	606.3	1,778.0	1,247.9	2,443.0	205.0	805.0
Nov 12	58.2	610.3	1,782.5	1,248.0	2,450.9	205.2	807.9
Dec 12	56.3	616.3	1,783.3	1,246.9	2,455.9	195.8	805.3
Jan 13	56.4	614.3	1,781.2	1,204.6	2,451.9	193.6	799.9
Feb 13	56.5	616.8	1,783.3	1,208.7	2,456.7	193.0	803.2
Mar 13	56.7	620.8	1,780.6	1,191.1	2,458.0	191.2	803.2
Apr 13	56.8	620.9	1,780.9	1,174.4	2,458.7	189.9	804.2

Note: The Table includes the mortgage-credit lending to residents only, whereas Tables 8 and 9 include the institutes' total lending to residents.

[1] The mortgage banks' instalment-free lending to owner-occupied dwellings.

THE BANKS' EFFECTIVE INTEREST RATES Table 11

	Lending				Deposits			
	All sectors	House-holds, etc.	Non-financial compa-nies	Financial compa-nies	All sectors	House-holds, etc.	Non-financial compa-nies	Financial compa-nies
	Per cent, per annum							
Q1 08	6.2	7.5	6.1	4.5	3.7	3.5	3.8	4.2
Q2 08	6.5	7.7	6.3	4.6	3.8	3.6	3.9	4.2
Q3 08	6.6	7.8	6.5	4.9	4.0	3.6	4.1	4.5
Q4 08	7.0	8.4	7.1	5.2	4.4	3.9	4.5	5.0
Q1 09	6.0	7.4	6.3	4.0	3.3	2.8	3.2	4.1
Q2 09	5.1	6.4	5.4	2.7	2.2	2.0	2.0	2.6
Q3 09	4.6	6.0	5.0	2.1	1.7	1.7	1.5	1.9
Q4 09	4.1	5.6	4.6	1.7	1.4	1.5	1.1	1.5
Q1 10	3.9	5.5	4.4	1.5	1.2	1.4	0.9	1.3
Q2 10	3.6	5.3	4.2	1.3	1.0	1.2	0.7	1.0
Q3 10	3.5	5.1	4.1	1.2	0.9	1.1	0.6	0.8
Q4 10	3.6	5.1	4.2	1.2	0.9	1.1	0.6	0.9
Q1 11	3.8	5.2	4.2	1.3	1.0	1.1	0.7	0.9
Q2 11	4.0	5.3	4.3	1.6	1.1	1.2	0.8	1.1
Q3 11	4.2	5.6	4.6	1.7	1.2	1.3	0.9	1.3
Q4 11	4.1	5.6	4.6	1.5	1.1	1.3	0.8	1.0
Q1 12	3.8	5.6	4.5	1.0	0.9	1.2	0.6	0.6
Q2 12	3.8	5.7	4.5	1.0	0.9	1.1	0.5	0.5
Q3 12	3.5	5.5	4.2	0.6	0.7	1.1	0.4	0.2
Q4 12	3.5	5.6	4.1	0.5	0.7	1.1	0.4	0.2
Q1 13	3.5	5.5	4.1	0.6	0.7	1.1	0.3	0.2
Q2 13	...	...	...	...	...	...	...	...
Apr 12	3.8	5.8	4.6	1.1	0.9	1.2	0.5	0.5
May 12	3.8	5.7	4.5	1.0	0.9	1.2	0.5	0.6
Jun 12	3.6	5.5	4.4	0.9	0.8	1.1	0.5	0.5
Jul 12	3.5	5.5	4.3	0.7	0.8	1.1	0.4	0.3
Aug 12	3.5	5.5	4.2	0.6	0.7	1.1	0.4	0.2
Sep 12	3.5	5.5	4.1	0.5	0.7	1.1	0.4	0.2
Oct 12	3.5	5.6	4.1	0.5	0.7	1.1	0.4	0.1
Nov 12	3.6	5.6	4.2	0.5	0.7	1.1	0.4	0.2
Dec 12	3.4	5.5	4.0	0.5	0.7	1.1	0.4	0.3
Jan 13	3.5	5.6	4.1	0.6	0.7	1.1	0.3	0.2
Feb 13	3.6	5.6	4.1	0.6	0.7	1.1	0.3	0.2
Mar 13	3.6	5.5	4.1	0.7	0.7	1.1	0.4	0.2
Apr 13	3.4	5.4	3.9	0.6	0.7	1.0	0.3	0.2

LENDING SURVEY, BANKS — Table 12

	Changes in banks' credit policies			
	Corporate lending		Lending to households	
	Development in current quarter	Expectations for the coming quarter	Development in current quarter	Expectations for the coming quarter
	Net balance			
Q2 10	1.6	2.3	0.0	0.6
Q3 10	3.1	-0.2	-1.0	0.1
Q4 10	-3.2	1.6	0.0	0.5
Q1 11	-7.4	-0.5	-0.5	-21.4
Q2 11	4.4	-6.9	0.0	-16.6
Q3 11	-2.5	-1.1	-26.3	1.0
Q4 11	-21.9	-1.0	-22.5	-22.5
Q1 12	-16.5	3.5	-1.3	-0.6
Q2 12	-15.3	-1.0	0.1	-23.7
Q3 12	-2.9	-0.5	-19.7	0.0
Q4 12	-2.9	0.3	-6.1	0.0
Q1 13	-0.6	-0.1	-0.6	1.6

Note: A negative net balance indicates that, overall, the institutions have tightened their credit policies, thus making it more difficult to obtain loans, while a positive net balance indicates an overall easing of credit policies. The net balance indicates the institutions' assessment of quarter-on-quarter changes and not absolute changes. For a detailed presentation of the lending survey, see Carina Moselund Jensen and Tania Al-Zagheer Sass, Danmarks Nationalbank's Lending Survey – New Statistics for Changes in Banks' and Mortgage-Credit Institutes' Credit Policies, Danmarks Nationalbank, *Monetary Review*, 1st Quarter 2009.

LENDING SURVEY, MORTGAGE BANKS — Table 13

	Changes in mortgage banks' credit policies			
	Corporate lending		Lending to households	
	Development in current quarter	Expectations for the coming quarter	Development in current quarter	Expectations for the coming quarter
	Net balance			
Q2 10	0.0	0.0	0.0	6.2
Q3 10	0.0	0.0	0.0	6.2
Q4 10	15.2	15.2	0.0	0.0
Q1 11	0.0	5.0	6.2	0.0
Q2 11	-15.1	4.9	0.0	0.0
Q3 11	-30.1	-2.3	-22.2	0.0
Q4 11	4.9	-15.1	0.0	-22.2
Q1 12	0.0	-4.9	-33.6	0.0
Q2 12	-15.3	0.0	-21.8	-11.5
Q3 12	-15.3	-4.7	-32.4	-10.5
Q4 12	-4.7	-4.7	-10.5	-5.3
Q1 13	0.0	-10.6	-10.5	-5.3

Note: A negative net balance indicates that, overall, the institutions have tightened their credit policies, thus making it more difficult to obtain loans, while a positive net balance indicates an overall easing of credit policies. The net balance indicates the institutions' assessment of quarter-on-quarter changes and not absolute changes. For a detailed presentation of the lending survey, see Carina Moselund Jensen and Tania Al-Zagheer Sass, Danmarks Nationalbank's Lending Survey – New Statistics for Changes in Banks' and Mortgage-Credit Institutes' Credit Policies, Danmarks Nationalbank, *Monetary Review*, 1st Quarter 2009.

SELECTED ITEMS FROM THE BALANCE SHEET OF INVESTMENT FUNDS Table 14

		Assets		Liabilities			
		Holdings of securities		Investment fund shares/units broken down by sector			
End of period	Total balance	Bonds, etc.	Shares, etc.	House-holds	Insurance compa-nies and pension funds	Other	Abroad
	Kr. billion						
2008	773.2	425.3	222.5	211.4	266.9	238.1	14.6
2009	865.4	487.5	301.4	252.7	357.8	184.9	22.7
2010	1,287.6	768.3	387.8	298.7	654.9	235.5	23.9
2011	1,424.5	874.5	357.3	300.0	682.5	316.5	25.6
2012	1,675.5	995.2	449.9	344.3	812.2	375.5	33.0
Apr 12	1,531.1	910.8	392.3	317.3	711.2	346.7	27.7
May 12	1,539.8	947.0	359.3	315.1	712.1	344.4	27.7
Jun 12	1,548.5	918.7	393.2	318.8	713.6	346.4	29.2
Jul 12	1,609.2	947.4	409.0	329.5	748.1	359.0	30.6
Aug 12	1,627.2	952.4	413.3	330.5	759.3	367.0	30.4
Sep 12	1,717.7	964.9	424.1	333.9	772.2	370.2	30.5
Oct 12	1,727.3	972.3	424.6	335.6	779.3	370.1	30.9
Nov 12	1,755.1	987.7	433.2	340.4	797.5	373.7	32.1
Dec 12	1,675.5	995.2	449.9	344.4	812.2	375.5	33.0
Jan 13	1,681.2	980.6	465.7	347.0	817.0	371.1	35.7
Feb 13	1,706.0	986.6	481.7	350.7	832.2	378.5	34.2
Mar 13	1,781.5	993.3	498.4	354.1	850.5	382.2	36.6
Apr 13	1,804.5	1,007.5	503.5	354.4	865.8	385.3	40.9

SECURITIES ISSUED BY RESIDENTS BY OWNER'S HOME COUNTRY Table 15

End of period	Bonds, etc.						Shares	
	Total		of which:					
			Central-government securities		Mortgage bonds			
	Denmark	Abroad	Denmark	Abroad	Denmark	Abroad	Denmark	Abroad
	Market value, kr. billion							
2008	2,981.3	405.0	363.1	158.5	2,419.4	227.4	529.9	244.4
2009	3,424.2	422.4	394.2	159.8	2,812.0	242.7	641.0	347.5
2010	3,552.5	541.0	474.3	172.7	2,844.6	342.8	786.2	545.5
2011	3,539.0	647.9	513.6	263.3	2,828.7	368.6	601.6	471.9
2012	3,549.9	752.4	525.9	290.7	2,854.3	449.6	722.0	609.2
Mar 12	3,213.9	630.3	517.8	238.1	2,515.8	378.6	695.3	535.4
Apr 12	2,975.3	629.4	530.8	244.4	2,264.7	371.9	697.4	548.6
May 12	3,049.5	658.4	557.1	273.9	2,314.7	371.5	651.9	528.1
Jun 12	3,091.7	699.6	516.9	289.7	2,398.1	396.9	655.9	541.2
Jul 12	3,053.9	710.2	528.2	312.1	2,353.4	386.9	697.3	589.1
Aug 12	3,161.3	726.1	529.7	315.2	2,459.6	399.8	700.5	595.5
Sep 12	3,244.5	738.7	519.3	318.1	2,555.7	409.6	714.0	600.4
Oct 12	3,080.9	770.6	529.7	320.6	2,383.0	437.6	709.3	597.4
Nov 12	3,336.6	758.7	536.8	293.0	2,631.7	452.5	715.9	601.2
Dec 12	3,549.9	752.4	525.9	290.7	2,854.3	449.6	722.0	609.2
Jan 13	2,905.3	783.5	530.6	277.3	2,212.5	494.9	759.9	661.9
Feb 13	2,976.7	804.9	533.9	295.1	2,281.2	500.1	780.4	668.8
Mar 13	3,189.4	795.7	530.9	282.5	2,497.2	504.5	777.9	660.1

Note: Comprise quoted and unquoted securities registered with the VP Securities Services (VP).

HOUSEHOLDS' FINANCIAL ASSETS AND LIABILITIES — Table 16

	Assets					Liabilities		
End of period	Currency and bank deposits, etc.	Bonds, etc.	Shares and certificates issued by investment funds, etc.	Life-insurance and pension-scheme savings, etc.	Total	Loans, etc.	Net financial assets	Total
	Kr. billion							
2008	905	173	794	1,786	3,659	2,418	1,241	3,659
2009	934	165	1,001	1,924	4,023	2,518	1,506	4,024
2010	964	148	1,218	2,128	4,458	2,632	1,826	4,458
2011	950	136	1,116	2,379	4,581	2,698	1,883	4,581
2012	984	108	1,247	2,587	4,927	2,782	2,145	4,927
Q4 11	950	136	1,116	2,379	4,581	2,698	1,883	4,581
Q1 12	943	137	1,249	2,428	4,758	2,719	2,039	4,758
Q2 12	976	123	1,159	2,492	4,751	2,743	2,007	4,750
Q3 12	972	115	1,208	2,558	4,852	2,751	2,100	4,851
Q4 12	984	108	1,247	2,587	4,927	2,782	2,145	4,927

COMPANIES' FINANCIAL ASSETS AND LIABILITIES — Table 17

	Assets				Liabilities				
					Debt				
End of period	Currency, bank deposits and granted credits, etc.	Bonds, etc.	Shares and certificates issued by investment funds, etc.	Total	Loans, etc.	Bonds, etc. issued	Shares, etc. issued	Net financial assets	Total
	Kr. billion								
2008	1,052	110	1,788	2,950	1,970	108	2,518	-1,645	2,950
2009	1,017	108	2,260	3,385	1,921	136	3,065	-1,737	3,385
2010	1,047	124	2,912	4,083	1,888	143	3,983	-1,932	4,083
2011	1,140	110	2,684	3,935	1,859	159	3,549	-1,632	3,935
2012	1,137	123	2,932	4,191	1,817	196	3,885	-1,707	4,191
Q4 11	1,140	110	2,684	3,935	1,859	159	3,549	-1,632	3,935
Q1 12	1,111	128	3,062	4,301	1,858	175	4,066	-1,798	4,301
Q2 12	1,116	115	2,822	4,053	1,871	166	3,721	-1,705	4,053
Q3 12	1,123	122	2,872	4,116	1,835	185	3,807	-1,711	4,116
Q4 12	1,137	123	2,932	4,191	1,817	196	3,885	-1,707	4,191

Note: Companies are defined as non-financial companies.

CURRENT ACCOUNT OF THE BALANCE OF PAYMENTS (NET REVENUES) Table 18

	Goods (fob)	Services	Goods and services	Wages and property income	Current transfers	Total current account
	Kr. billion					
2008	4.2	52.1	56.3	23.0	-28.7	50.5
2009	47.4	20.8	68.1	17.3	-28.9	56.5
2010	53.4	48.9	102.3	33.0	-31.7	103.6
2011	55.3	40.9	96.2	36.6	-31.6	101.2
2012	47.2	40.6	87.8	47.5	-34.9	100.3
Apr 11 - Mar 12	48.8	37.5	86.3	35.6	-33.1	88.7
Apr 12 - Mar 13	42.9	41.6	84.5	49.1	-34.8	98.8
Mar 12	4.2	0.8	4.9	-1.8	-3.6	-0.5
Apr 12	2.9	3.4	6.3	2.9	-2.4	6.9
May 12	4.1	2.9	7.1	5.5	-2.4	10.1
Jun 12	6.2	4.6	10.8	5.9	-2.4	14.3
Jul 12	7.2	2.8	9.9	4.6	-2.5	12.0
Aug 12	4.2	6.4	10.6	3.5	-2.6	11.6
Sep 12	3.5	4.6	8.2	5.0	-2.6	10.5
Oct 12	5.0	4.4	9.3	5.2	-2.8	11.7
Nov 12	5.6	2.9	8.5	4.8	-2.8	10.5
Dec 12	-2.1	4.0	1.9	5.5	-2.6	4.8
Jan 13	2.7	1.8	4.5	4.5	-3.9	5.2
Feb 13	0.8	2.0	2.8	3.7	-4.0	2.5
Mar 13	2.8	1.7	4.6	-2.1	-3.8	-1.3

FINANCIAL ACCOUNT OF THE BALANCE OF PAYMENTS
(NET PAYMENTS FROM ABROAD) Table 19

	Current account and capital account, etc., total[1]	Capital import				Other[3]	Danmarks Nationalbank's transactions with abroad[4]
		Direct investments		Portfolio investments[2]	Other capital import		
		Danish abroad	Foreign in Denmark				
	Kr. billion						
2008	50.9	-67.6	9.3	52.7	-49.5	-67.1	-71.4
2009	56.3	-33.9	21.1	69.7	193.3	-18.5	288.0
2010	104.1	0.6	-64.9	-11.9	102.5	-103.8	26.5
2011	105.9	-71.5	68.1	21.3	-49.4	-18.3	56.1
2012	101.4	-31.2	7.6	-91.2	20.4	4.1	11.1
Apr 11 - Mar 12	93.4	-81.1	69.5	-45.8	5.6	-19.2	22.8
Apr 12 - Mar 13	99.7	-29.2	14.6	-24.9	-83	21.5	-1.3
Mar 12	-0.4	0.6	-5.1	-33.2	24.5	0.0	-13.6
Apr 12	7.0	1.6	-4.1	-10.0	-50.1	54.2	-1.5
May 12	10.2	-18.2	3.3	-38.3	75.1	-11.9	20.2
Jun 12	14.3	13.9	6.4	-24.5	17.6	-20.3	7.4
Jul 12	12.1	-6.3	9.3	2.9	-11.7	-7.9	-1.6
Aug 12	11.6	-0.4	-6.3	2.6	5.1	-13.0	-0.4
Sep 12	10.6	1.4	-1.4	9.1	-23.2	3.2	-0.2
Oct 12	11.8	-5.0	3.8	22.7	-35.2	3.6	1.8
Nov 12	10.6	-10.6	0.4	-32.8	7.4	24.7	-0.3
Dec 12	4.9	9.8	8.9	4.7	12.1	-48.4	-8.0
Jan 13	5.2	-17.1	2.1	41.3	-51.9	15.2	-5.2
Feb 13	2.6	-0.4	-4.5	22.1	-27.5	-4.8	-12.5
Mar 13	-1.2	2.1	-3.3	-24.7	-0.7	26.9	-1.0

[1] Including total current account and capital transfers, etc.
[2] This item may differ from the total of Table 18, as portfolio investments are published 1-2 weeks earlier than the rest of the balance of payments.
[3] Including errors and omissions.
[4] Including transactions on *all* Danmarks Nationalbank's accounts with abroad and not only transactions on accounts included by compilation of the foreign-exchange reserve. The latter is published by press release on the 2nd banking day of each month and included in Table 2 of this section.

PORTFOLIO INVESTMENTS OF THE BALANCE OF PAYMENTS
(NET PAYMENTS FROM ABROAD) Table 20

	Danish securities			Foreign securities		
	Krone-denominated bonds, etc.	Foreign currency denominated bonds, etc.	Shares	Bonds, etc.	Shares	Total[1]
	Kr. billion					
2008	-59.8	142.1	11.3	-91.0	50.1	52.7
2009	-4.3	162.3	38.0	-82.5	-43.8	69.7
2010	66.5	-35.5	48.9	-65.9	-26.0	-11.9
2011	83.0	-70.5	-11.7	31.0	-10.6	21.3
2012	87.1	-53.9	27.4	-82.6	-69.2	-91.2
Mar 12	-15.5	0.1	5.8	-10.8	-12.8	-33.2
Apr 12	-8.9	5.9	-6.8	1.9	-2.2	-10.0
May 12	25.4	-45.0	3.5	-15.8	-6.4	-38.3
Jun 12	43.0	-55.3	-1.4	-11.7	0.9	-24.5
Jul 12	10.6	3.1	2.6	-10.8	-2.6	2.9
Aug 12	14.9	6.1	-0.1	-12.4	-5.8	2.6
Sep 12	21.4	0.1	1.0	-6.0	-7.4	9.1
Oct 12	32.8	3.8	1.1	-4.0	-11.1	22.7
Nov 12	-25.9	22.5	7.4	-34.3	-2.5	-32.8
Dec 12	-14.0	-3.2	6.0	29.4	-13.4	4.7
Jan 13	28.6	20.5	2.8	6.6	-17.3	41.3
Feb 13	21.6	-10.2	8.9	4.4	-2.6	22.1
Mar 13	-4.3	-23.5	5.7	12.8	-15.4	-24.7

Note: A negative sign (-) indicates residents' net purchase of foreign securities, or non-residents' net sale of Danish securities.

[1] This item may differ from "Portfolio investments" in Table 19, as the rest of the balance of payments is published 1-2 weeks later.

DENMARK'S EXTERNAL ASSETS AND LIABILITIES — Table 21

End of period	Direct investments		Portfolio investments		Financial derivatives, net	Other investments			Danmarks Nationalbank	Total
	Equity	Inter-company debt, etc.	Shares, etc.	Bonds, etc.		Trade credits	Loans and deposits	Other		
	Kr. billion									
Assets										
2008	650	380	449	784	83	45	1,101	37	226	3,754
2009	730	376	612	926	21	38	927	32	400	4,061
2010	822	407	762	1,057	37	47	997	33	432	4,594
2011	842	474	733	1,041	120	50	938	35	492	4,724
2012	937	431	898	1,157	128	58	936	36	512	5,093
Q4 11	842	474	733	1,041	120	50	938	35	492	4,724
Q1 12	892	462	794	1,061	121	52	999	34	487	4,903
Q2 12	924	455	792	1,087	134	56	1,050	35	519	5,052
Q3 12	935	445	847	1,140	127	55	995	36	522	5,102
Q4 12	937	431	898	1,157	128	58	936	36	512	5,093
Liabilities										
2008	511	292	241	1,198	•	41	1,398	40	121	3,843
2009	497	303	348	1,362	•	34	1,402	38	5	3,988
2010	492	293	521	1,436	•	41	1,539	40	5	4,367
2011	504	302	451	1,467	•	43	1,422	44	5	4,238
2012	522	296	609	1,524	•	37	1,418	45	5	4,457
Q4 11	504	302	451	1,467	•	43	1,422	44	5	4,238
Q1 12	508	298	531	1,458	•	42	1,515	45	2	4,399
Q2 12	529	303	538	1,455	•	40	1,604	46	4	4,518
Q3 12	531	298	593	1,514	•	40	1,494	48	2	4,521
Q4 12	522	296	609	1,524	•	37	1,418	45	5	4,457
Net assets										
2008	139	87	208	-415	83	4	-297	-3	105	-89
2009	233	73	264	-436	21	3	-475	-6	395	73
2010	330	113	241	-379	37	6	-542	-7	428	227
2011	338	172	282	-426	120	7	-484	-9	487	486
2012	415	135	289	-367	128	21	-482	-9	507	636
Q4 11	338	172	282	-426	120	7	-484	-9	487	486
Q1 12	383	165	263	-397	121	10	-517	-11	485	503
Q2 12	395	153	253	-368	134	16	-554	-11	515	534
Q3 12	404	147	254	-374	127	15	-498	-12	520	581
Q4 12	415	135	289	-367	128	21	-482	-9	507	636

Note: As a key principle, the market value has been used for the compilation.

GDP BY TYPE OF EXPENDITURE Table 22

	GDP	Final domestic demand					Exports of goods and services	Imports of goods and services
		Private consumption	General-government consumption	Gross fixed capital formation	Change in inventories	Total		
	Kr. billion							
2008	1,753.2	840.0	465.4	371.7	20.4	1,697.5	959.6	904.0
2009	1,664.8	822.1	495.9	303.5	-21.7	1,599.8	793.1	728.2
2010	1,761.1	857.6	509.8	300.1	-4.7	1,662.8	887.0	788.7
2011	1,791.5	874.5	508.1	311.7	3.6	1,698.0	956.8	863.3
2012	1,820.2	900.6	520.1	315.7	-4.0	1,732.4	992.5	904.6
Q1 12	442.1	221.4	125.7	75.0	4.8	426.9	238.3	223.0
Q2 12	455.8	225.1	128.9	79.3	-1.5	431.8	251.8	227.7
Q3 12	456.8	220.0	130.2	76.4	1.1	427.6	255.0	225.8
Q4 12	465.6	234.1	135.3	85.1	-8.3	446.1	247.5	228.1
Q1 13	445.5	224.6	126.5	75.4	8.0	434.5	235.0	224.0
	Real growth compared with previous year, per cent							
2008	-0.8	-0.3	1.9	-4.1	...	-0.9	3.3	3.3
2009	-5.7	-3.6	2.1	-15.9	...	-7.0	-9.5	-12.3
2010	1.6	1.7	0.4	-2.4	...	1.6	3.0	3.2
2011	1.1	-0.5	-1.5	2.8	...	0.3	6.5	5.6
2012	-0.5	0.6	0.2	0.0	...	-0.1	0.9	1.8
Q1 12	0.0	0.7	-1.5	3.9	...	1.2	0.5	2.9
Q2 12	-1.3	0.5	-1.4	-1.2	...	-1.5	3.1	3.1
Q3 12	0.0	0.9	0.9	-2.3	...	-0.3	1.5	0.9
Q4 12	-0.6	0.1	2.6	0.1	...	0.3	-1.4	0.3
Q1 13	-0.8	0.4	0.0	0.5	...	1.0	-1.9	1.3
	Real growth compared with previous quarter (seasonally adjusted), per cent							
Q1 12	0.3	-0.1	0.3	-0.6	...	0.1	0.1	0.7
Q2 12	-0.9	0.0	0.3	-1.4	...	-1.0	1.7	0.8
Q3 12	0.8	0.0	1.0	-0.4	...	0.5	-0.9	-0.4
Q4 12	-0.9	-0.1	0.9	2.5	...	0.5	-2.1	-0.8
Q1 13	0.2	0.1	-2.1	-0.6	...	0.6	-0.4	1.6

EU-HARMONIZED INDEX OF CONSUMER PRICES (HICP) AND UNDERLYING INFLATION (IMI) Table 23

	HICP							Index of net retail prices[1]		
		Subcomponents:								
					Administered prices		HICP excl. energy, food and administered prices[3]	Index of net retail prices excl. energy, food and administered prices[3]	Split into[4]:	
	Total	Energy	Food	Core inflation[2]	Rent	Public services			Import content[5]	IMI[6]
	Weights, per cent									
	100	10.3	18.4	71.3	8.5	4.1	58.7	53.4	16.2	37.2
	Year-on-year growth, per cent									
2008	3.6	7.7	6.7	2.1	2.8	3.5	1.9	2.1	4.0	1.1
2009	1.1	-4.0	0.5	2.0	3.1	4.8	1.7	1.9	-4.3	5.1
2010	2.2	9.2	2.1	1.2	2.8	3.9	0.8	0.9	1.7	0.5
2011	2.7	8.9	4.0	1.4	3.0	2.4	1.1	0.9	4.8	-0.9
2012	2.4	2.9	5.1	1.6	2.6	2.3	1.4	1.2	1.1	1.2
Q1 10	1.9	8.9	0.0	1.4	2.9	3.7	1.0	1.2	-1.3	2.3
Q2 10	2.0	10.1	0.8	1.1	2.8	3.9	0.7	0.7	1.0	0.6
Q3 10	2.3	8.8	3.2	1.1	2.5	4.0	0.8	0.9	3.2	-0.2
Q4 10	2.5	9.1	4.5	1.1	2.9	4.0	0.7	0.8	3.8	-0.6
Q1 11	2.6	9.3	3.4	1.4	2.9	3.7	1.0	0.8	5.4	-1.3
Q2 11	2.9	9.0	4.9	1.5	2.8	2.0	1.3	1.3	6.0	-0.9
Q3 11	2.6	9.3	3.3	1.4	3.2	1.9	1.1	0.9	4.2	-0.7
Q4 11	2.5	8.2	4.4	1.2	3.0	2.1	0.9	0.6	3.5	-0.7
Q1 12	2.8	5.3	5.5	1.7	2.8	1.9	1.5	1.4	1.9	1.2
Q2 12	2.2	1.6	5.1	1.6	2.7	2.5	1.4	1.0	0.5	1.2
Q3 12	2.4	3.0	5.4	1.6	2.2	2.5	1.4	1.1	0.9	1.2
Q4 12	2.1	1.6	4.4	1.6	2.6	2.4	1.5	1.2	1.1	1.2
Q1 13	0.9	0.5	2.6	0.6	2.3	2.7	0.2	0.1	0.1	0.2

Note: The weights reflect the weighting basis as of January 2013.

[1] Prices in the index of net retail prices are compiled excluding indirect taxes and subsidies.

[2] Core inflation is defined as the increase in HICP excluding energy and food.

[3] Goods and services excluding energy. food and administered prices constitute 58.7 per cent of HICP's weight basis and 53.4 per cent of the index of net retail prices. The difference reflects that the same goods and services do not count equally in the two indices. and does not express the indirect taxation content of the consumer prices.

[4] The division of the index of net retail prices into import and IMI is based on Statistics Denmark's input-output table.

[5] The indirect energy content is included in the import content.

[6] IMI expresses the domestic market-determined inflation. For a detailed presentation of IMI. see Bo William Hansen and Dan Knudsen. Domestic Market-Determined Inflation. Danmarks Nationalbank. *Monetary Review*. 4th Quarter 2005.

SELECTED MONTHLY ECONOMIC INDICATORS — Table 24

	Unemployment, Per cent of labour force		Quantity index		Forced sales of real property	New passenger car registrations	Consumer confidence indicator	Composite cyclical Indicator for		
			Manufacturing industry[2]	Retail trade				Manufacturing industry	Building and construction	Service
	Gross[1]	Net	2005=100	2005=100	Number		Balance per cent			
2008	2.7	1.9	106.7	105.3	2,840	150,664	-7.7	-7	-16	3
2009	4.8	3.6	88.2	101.5	4,140	112,249	-5.0	-14	-44	-13
2010	6.1	4.3	90.6	100.0	5,222	153,614	1.8	3	-35	4
2011	6.0	4.1	94.9	97.6	5,025	169,793	-1.9	4	-20	4
2012	6.1	4.5	95.7	95.3	5,130	168,867	-2.4	2	-18	-5
Seasonally adjusted										
May 12	6.1	4.4	93.9	95.4	415	13,419	-2.6	0	-22	-6
Jun 12	6.1	4.5	95.3	95.0	437	11,895	-2.5	0	-21	-9
Jul 12	6.2	4.6	99.3	94.8	445	17,327	-1.7	5	-24	-6
Aug 12	6.1	4.6	99.1	94.5	443	13,641	-1.5	0	-19	-6
Sep 12	6.1	4.6	94.7	95.1	410	14,161	-2.3	0	-19	-7
Oct 12	6.1	4.6	95.6	94.4	414	14,435	-3.4	-6	-14	-6
Nov 12	6.1	4.6	96.1	94.7	447	15,231	-1.1	2	-14	-4
Dec 12	6.1	4.7	93.1	94.6	352	12,634	-1.0	-1	-16	-3
Jan 13	6.0	4.6	99.2	93.9	414	14,254	-2.2	5	-19	-3
Feb 13	5.9	4.6	95.2	94.1	360	14,312	-1.5	2	-22	-7
Mar 12	5.8	4.4	95.9	93.5	413	13,699	-1.3	4	-20	-6
Apr 13	5.9	4.5	...	93.1	402	15,434	-5.1	-4	-21	-9
May 13	...	...	...	...	...	...	-5.0	-6	-19	-7

[1] Including persons in activation programmes.
[2] Excluding shipbuilding.

SELECTED QUARTERLY ECONOMIC INDICATORS — Table 25

	Employment		Hourly earnings			Property prices (purchase sum, one-family dwellings)
	Total	Private	All sectors in Denmark, total	Manufacturing industry in Denmark	Manufacturing industry abroad	As a percentage of property value 2006
	1,000 persons		1996=100			
2008	2,952	2,114	158.1	158.5	142.5	100.1
2009	2,883	2,024	162.9	163.2	144.6	88.1
2010	2,817	1,948	166.6	167.4	148.8	90.5
2011	2,806	1,949	169.6	171.3	152.5	88.0
2012	2,798	1,952	172.3	174.4	156.3	85.1
			Seasonally adjusted			
Q1 12	2,798	1,950	171.6	173.5	154.8	84.5
Q2 12	2,794	1,948	171.8	174.2	156.1	85.3
Q3 12	2,803	1,958	172.5	174.8	156.8	85.5
Q4 12	2,795	1,951	173.2	176.0	157.5	85.1
Q1 13	2,788	1,945	...	176.1	158.1	...
			Change compared with previous year, per cent			
2008	1.7	2.6	4.4	4.2	3.3	-4.5
2009	-2.3	-4.2	3.0	2.9	1.5	-12.0
2010	-2.3	-3.7	2.3	2.6	2.9	2.8
2011	-0.4	0.1	1.8	2.3	2.4	-2.8
2012	-0.3	0.1	1.6	1.8	2.5	-3.3
Q1 12	-0.3	0.3	1.8	2.0	2.4	-5.5
Q2 12	-0.6	-0.2	1.6	2.0	2.7	-5.4
Q3 12	-0.1	0.3	1.5	1.6	2.6	-2.3
Q4 12	-0.2	0.0	1.4	1.7	2.4	0.4
Q1 13	-0.4	-0.3	...	1.5	2.1	...

EXCHANGE RATES Table 26

	EUR	USD	GBP	SEK	NOK	CHF	JPY
	Kroner per 100 units						
	Average						
2008	745.60	509.86	939.73	77.73	91.02	469.90	4.9494
2009	744.63	535.51	836.26	70.18	85.39	493.17	5.7296
2010	744.74	562.57	869.02	78.15	93.02	540.60	6.4299
2011	745.05	536.22	859.05	82.52	95.61	605.74	6.7378
2012	744.38	579.72	918.37	85.62	99.62	617.57	7.2793
May 12	743.37	580.21	924.26	82.79	98.26	618.86	7.2792
Jun 12	743.26	593.16	922.65	83.81	98.61	618.83	7.4813
Jul 12	743.84	605.39	943.74	87.06	99.74	619.32	7.6655
Aug 12	744.54	600.49	943.87	89.92	101.66	619.88	7.6309
Sep 12	745.39	579.91	933.86	87.77	100.81	616.61	7.4185
Oct 12	745.82	574.87	924.61	86.58	100.69	616.50	7.2791
Nov 12	745.87	581.48	927.85	86.65	101.66	618.89	7.1791
Dec 12	746.03	569.13	918.95	86.19	101.51	616.89	6.8249
Jan 13	746.14	561.59	896.36	86.55	101.08	607.31	6.3089
Feb 13	745.98	558.49	864.95	87.68	100.50	606.61	5.9982
Mar 13	745.53	574.74	866.26	89.32	99.61	607.64	6.0575
Apr 13	745.53	572.31	875.78	88.35	98.88	611.34	5.8504
May 13	745.37	573.73	877.15	86.95	98.53	600.48	5.6910

EFFECTIVE KRONE RATE — Table 27

Average	Nominal effective krone rate	Consumer-price indices: Denmark	Consumer-price indices: Abroad	Real effective krone rate based on consumer prices	Real effective krone rate based on hourly earnings	Consumer-price index in the euro area
	1980=100					2005=100
2008	105.8	259.0	246.9	111.1	117.1	107.8
2009	107.8	262.4	247.4	114.8	121.5	108.1
2010	104.0	268.4	251.6	111.6	117.0	109.8
2011	103.6	275.8	258.4	111.1	116.3	112.8
2012	100.6	282.5	263.7	109.0	112.9	115.7
May 12	101.1	282.8	263.9	109.7	...	115.9
Jun 12	100.5	282.4	263.4	109.2	113.3	115.8
Jul 12	99.3	282.4	263.3	107.9	...	115.1
Aug 12	98.9	283.3	264.1	107.3	...	115.6
Sep 12	99.9	283.9	264.9	108.3	111.3	116.4
Oct 12	100.3	283.7	265.3	108.4	...	116.7
Nov 12	100.0	283.5	264.9	108.3	...	116.5
Dec 12	100.7	282.6	265.3	108.4	112.6	116.9
Jan 13	101.5	281.5	264.7	109.1	...	115.7
Feb 13	102.1	284.8	265.9	110.4	...	116.1
Mar 13	101.3	285.5	267.0	109.7	113.6	117.5
Apr 13	101.6	285.0	266.9	109.8	...	117.4
May 13	101.8	...	...	...	...	...
	Change compared with previous year, per cent					
2008	2.5	3.4	3.4	2.6	3.5	3.3
2009	1.9	1.3	0.2	3.4	3.7	0.3
2010	-3.6	2.3	1.7	-2.8	-3.7	1.6
2011	-0.3	2.8	2.7	-0.4	-0.6	2.7
2012	-2.9	2.4	2.1	-1.9	-2.9	2.5
May 12	-3.0	2.1	2.0	-1.9	...	2.4
Jun 12	-3.8	2.2	1.9	-2.4	-3.0	2.4
Jul 12	-4.6	2.3	1.9	-3.2	...	2.4
Aug 12	-5.1	2.6	2.0	-3.6	...	2.6
Sep 12	-3.4	2.5	2.0	-2.5	-4.5	2.6
Oct 12	-3.1	2.3	2.1	-2.5	...	2.5
Nov 12	-3.2	2.3	1.8	-2.4	...	2.2
Dec 12	-1.7	2.0	1.8	-1.5	-3.1	2.2
Jan 13	0.1	1.3	1.6	-0.3	...	2.0
Feb 13	0.3	1.2	1.5	0.0	...	1.8
Mar 13	-0.6	0.9	1.4	-0.7	-0.6	1.7
Apr 13	-0.1	0.8	1.1	-0.2	...	1.2
May 13	0.7	...	...	...	...	...

Note: The nominal effective krone rate index is a geometric weighting of the development in the Danish krone rate against currencies of Denmark's 27 most important trading partners. However, only 25 countries are included in the calculation of consumer prices abroad and the real effective krone rate based on consumer prices and hourly earnings, respectively.

As from April 2010 the weights are based on trade in manufactured goods in 2009 and earlier on trade in manufactured goods in 2002.

An increase in the index reflects a nominal or a real appreciation of the krone.

Danmarks Nationalbank's Statistical Publications

Periodical electronic publications
Danmarks Nationalbank releases new financial statistics to the public in electronic publications composed of 2 elements:

- **"Nyt" (News)** describing the key development trends.
- **Tabeltillæg (Tables Supplement)** containing tables with as detailed specifications as possible.

"Nyt" is available in Danish only, whereas the tables supplement and the corresponding sources and methodologies also are available in English.

Statistics databank
The above publications are supplemented by a statistics database comprising all time series which are updated concurrent with a release. The time series include data as far back in time as possible. The statistical data from Danmarks Nationalbank are published through Statistics Denmark's "StatBank Denmark". Danmarks Nationalbank's part of the "StatBank Denmark" is available directly via:
nationalbanken.statbank.dk

Special Reports
Special Reports deal with statistics of a thematic character and are not prepared on a regular basis.

Release calendar
A release calendar for the statistical publications, covering the current month and the following quarter, is available on:
www.nationalbanken.dk (see Statistics > Release calendar).