Danmarks Nationalbank

Monetary Review 4th Quarter Part 1

2012

DANMARKS NATIONAL BANK 2012

MONETARY REVIEW 4th QUARTER 2012

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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Current Economic and Monetary Trends

SUMMARY

The US economy is in a moderate upswing. Economic growth picked up from the 2nd to the 3rd quarter and the most recent monthly indicators point to continued positive growth in the 4th quarter. In contrast, the euro area as a whole has seen negative or zero growth for the last four quarters and monthly indicators point to negative growth again in the 4th quarter.

The positive development in the financial markets in the 3rd quarter has continued until now, with rising stock indices and narrowing of the southern EU member states' government bond yield spreads to Germany.

The international organisations unanimously predict only gradually higher growth in the world economy in the coming years. The outlook has deteriorated since the spring and forecasts have been adjusted downwards, by more for the euro area than for the USA. Euro area growth is not expected to turn positive until the 2nd quarter of 2013. For the USA, moderate growth in the range of 2 per cent is also expected in 2013.

Activity in the Danish economy rose by 0.1 per cent in the 3rd quarter, following a fall of 0.7 per cent in the 2nd quarter. The weak growth was driven by increased business investment and public consumption. On the other hand, private consumption declined marginally and exports fell, partly because of a temporary reduction in North Sea production.

Recent developments in private consumption should be viewed against the background of a subdued trend in disposable income, virtually unchanged wealth and continued weak confidence. This means that households are still consolidating, as is the corporate sector. For 2012 overall, the gross domestic product, GDP, is expected to shrink by 0.4 per cent. Next year, domestic demand is expected to improve, and GDP growth is expected to be 1.3 per cent, rising to 1.8 per cent in 2014.

The unemployment gap is positive, but small at the moment. This contributes to low wage inflation in Denmark, which is currently improving competitiveness. This situation is deemed to be temporary and will cease when domestic demand recovers and the economy begins to pick up steam. The assessment is that the current level of unemployment

has not led to higher structural unemployment or a permanent reduction in the labour force. In the interests of both competitiveness and long-term public finances it is advisable to maintain the planned fiscal policy stance.

The spare capacity means that there are no strong underlying inflationary pressures. For some time, price inflation has been pushed up by higher indirect taxes, but with the changes that take effect at New Year, the contribution from indirect taxes to consumer prices will be more or less neutral in 2013.

THE INTERNATIONAL ECONOMY AND THE FINANCIAL MARKETS

Economic developments

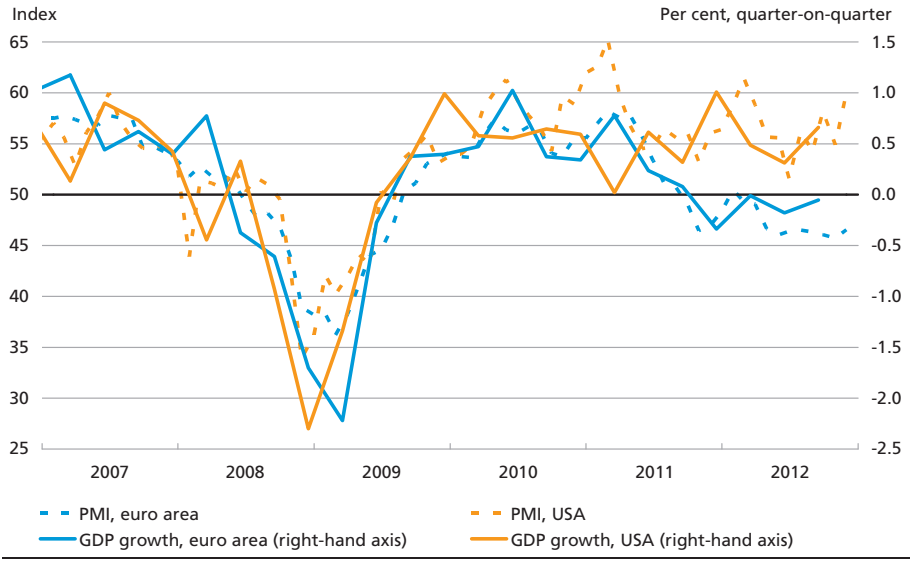
The US economy is in a moderate upswing, with GDP growth of 0.3 per cent in the 2nd quarter and 0.7 per cent in the 3rd quarter. Growth is mainly driven by domestic demand. This should be seen against the backdrop of an improving housing market, with rising house prices and sales, which supports private consumption, among other factors.

The euro area as a whole has now seen negative or zero growth for four consecutive quarters. There are considerable differences across the euro area, with deep recession in the southern member states, while Germany in particular has been less affected by the problems in Southern Europe until now. However, Germany's GDP growth was only 0.2 per cent in the 3rd quarter. France's GDP, like that of the euro area as a whole, has practically not grown since the 3rd quarter of 2011, although weak positive growth was seen in the 3rd quarter. The downturn in the euro area is mainly attributable to a slump in domestic demand, while exports have grown. Since imports have fallen at the same time, reflecting the lower domestic demand, net exports have made a positive contribution to growth in recent quarters.

Growth is higher in the USA than in the euro area not only because of the current cyclical factors, but also as a result of demographic factors. For many years, the working age population has been growing by between 0.5 and 1 percentage point more in the USA than in the euro area. From 2007 to 2011, US GDP grew by approximately 1.5 percentage points more than that of the euro area, but in the same period the working age population grew by approximately 2¼ percentage points more in the USA than in the euro area.

The most recent monthly data releases for the final quarter of the year also signal higher growth in the USA than in the euro area. The composite PMI – which is an indicator of economic activity in both the manufacturing and service sectors – points to continued positive GDP growth

GDP GROWTH AND PMI, USA AND EURO AREA Chart 1



Source: Reuters EcoWin.

in the USA, cf. Chart 1. In contrast, the PMI for the euro area points to negative growth in this quarter.

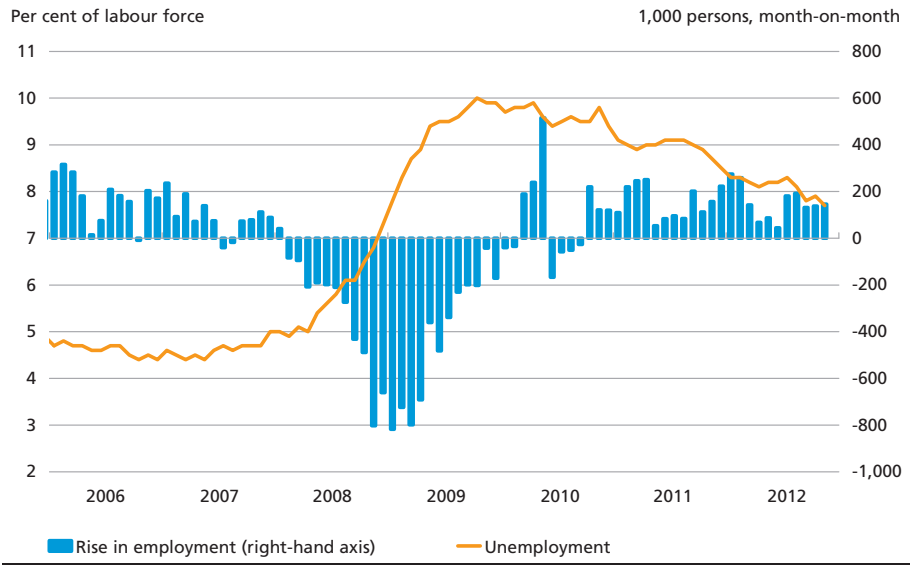
The UK economy grew again in the 3rd quarter, having contracted in the preceding three quarters. However, growth was positively affected by several temporary factors, including increased activity in connection with the London Olympics in August.

The weak global economy has also affected economic activity in the large emerging economies. Growth declined in the 1st half of 2012, but remains well above the level in the advanced economies.

The improved economic situation in the USA is evident from e.g. the labour-market statistics. Since July 2012, employment has grown by 150,000-200,000 a month, which is considerably more than the average for the 2nd quarter. Unemployment also fell from 8.3 per cent in July to 7.7 per cent in November, cf. Chart 2. However, this is attributable not only to higher employment, but also a sharp decline in the participation rate in recent years. One reason is that more people retire as the population ages, but the weak economy may also have led a large number of people to leave the labour force, presumably only temporarily in many cases.

Since the summer of 2011, the euro area as a whole has seen a strong rise in unemployment, to 11.7 per cent of the labour force in October. There are large differences across the euro area, with unemployment standing at around 26 per cent in Spain, but only just above 5 per cent in Germany. France and Italy are close to the euro area average.

NON-FARM EMPLOYMENT AND UNEMPLOYMENT, USA Chart 2

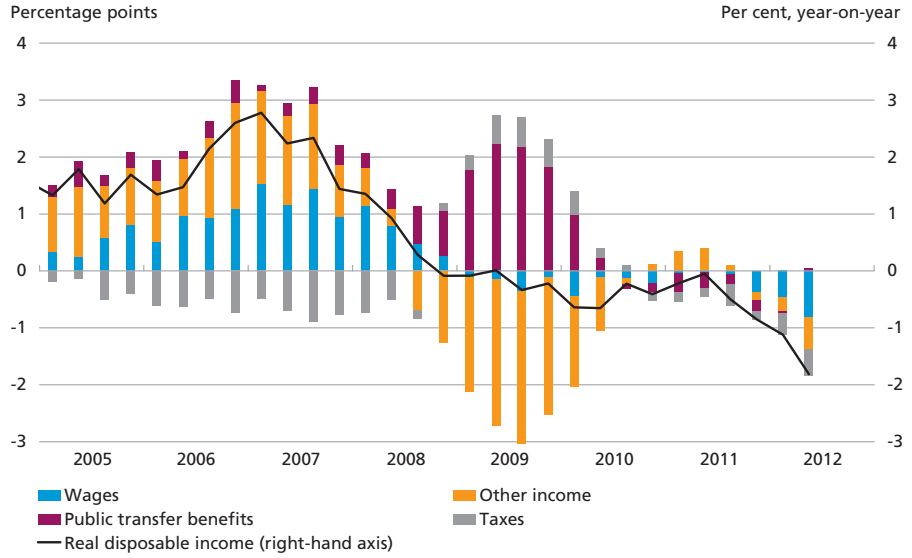


Source: Reuters EcoWin.

Household real disposable income has fallen in the euro area due to lower real wages and tighter fiscal policy, especially in the debt-ridden member states. Disposable income is being eroded by higher direct and indirect taxes as well as lower public transfers and wages, cf. Chart 3. This is reflected in consumer confidence, which has decreased since mid-2011. The subcomponent concerning household expectations of their own financial situation 12 months ahead even fell in November, to the lowest level since the introduction of the survey in 1985.

Private consumption in the euro area has also fallen over the last year, but by less than disposable income. As a result, the consumption ratio has increased and the savings ratio fallen. The consumption ratio is now at the highest level seen for 10 years, cf. Chart 4. So there are no indications that the households overall are increasing savings and thereby reducing their debts. One explanation could be that many people are trying to smooth the effect of lower incomes on consumption by spending some of their savings and wealth. Consumption may react to lower income with a lag. An upward adjustment of the savings ratio without renewed growth in disposable income could dampen private consumption further in the near term. The savings ratio dropped most sharply in Spain, by 7 percentage points from 2009 to 2011 and an estimated 2 percentage points more in 2012, but it should be noted that it had risen almost correspondingly in the preceding years. All the same, the Spanish savings ratio is now below the 10-year average.

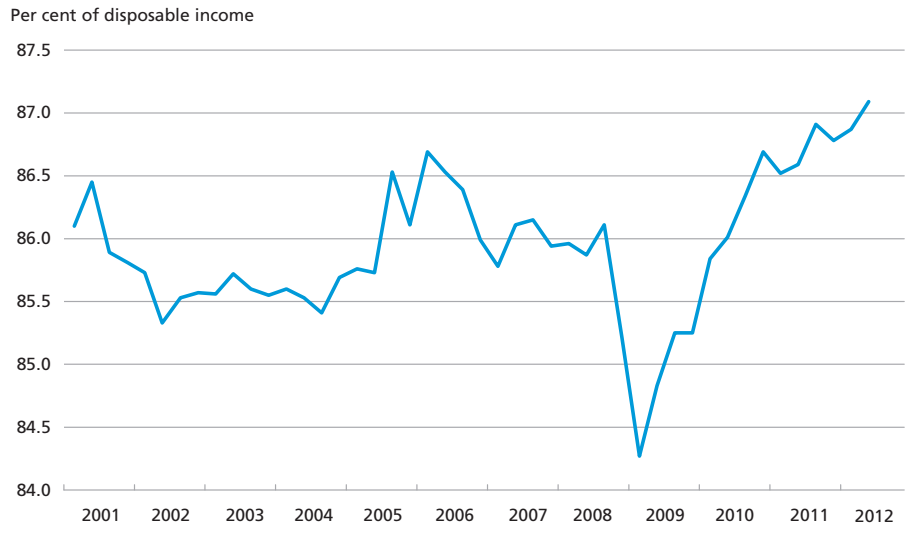
REAL DISPOSABLE INCOME IN THE EURO AREA Chart 3



Note: Disposable income and its subcomponents have been deflated using the deflator for private consumption. Other income comprises interest income and dividend as well as residual income.
Source: Eurostat and Reuters EcoWin.

The GIIPS member states, i.e. Greece, Ireland, Italy, Portugal and Spain, have made progress in terms of implementing structural reforms and fiscal consolidation. But at the same time macroeconomic developments have been weaker than assumed in these member states' stability pro-

CONSUMPTION RATIO, EURO AREA Chart 4

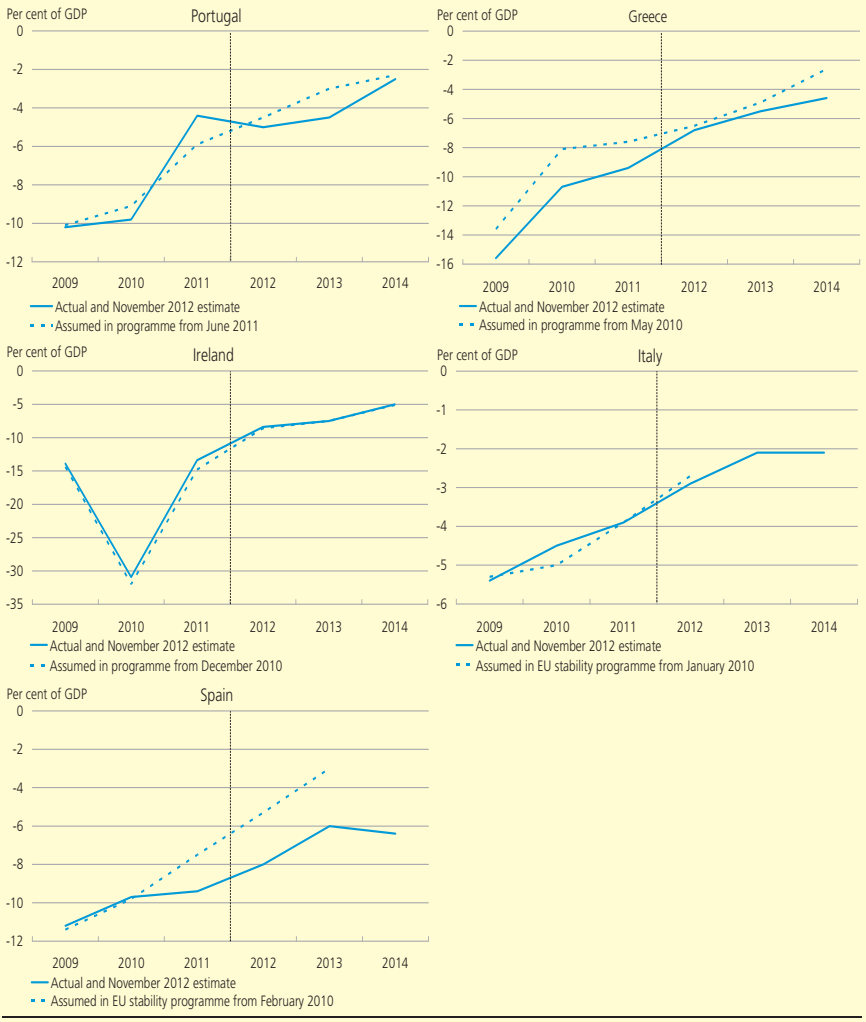


Note: The consumption ratio is private consumption relative to household disposable income.
Source: Reuters EcoWin.

RECOVERY IN THE GIIPS MEMBER STATES — Box 1

This box compares the assumed developments in government budget balances in the economic recovery programmes for the GIIPS member states with actual developments (2009-11) and the European Commission's most recent forecast (2012-14). Consolidation of public finances has generally taken place at a slower pace than assumed in Portugal, Greece and Spain, cf. Chart 5, reflecting a combination of insufficient fiscal consolidation and weaker-than-assumed macroeconomic developments.

GOVERNMENT BUDGET BALANCES IN THE GIIPS MEMBER STATES, ACTUAL AND ASSUMED — Chart 5



Note: Actual figures up to and including 2011, European Commission's estimates for 2012-14. *Assumed in programme* is the assumed development in the assistance programmes for Greece (May 2010), Ireland (December 2010) and Portugal (June 2011). For Italy and Spain, it is the government's own expectations as stated in the stability programmes from January and February 2010, respectively.

Source: European Commission's autumn forecast, November 2012, loan programmes and stability programmes.

CONTINUED Box 1

Portugal actually reduced its deficit faster than planned in 2011 due to one-off revenue from the transfer of pension funds from the banking sector to the central government to the tune of 3.5 per cent of GDP. Disregarding this extraordinary revenue, which was not included in the original Portuguese plan and which will ultimately impose higher pension commitments on the Portuguese government, the deficit would also have been larger than planned in 2011. In 2012-13 the deficit is, once again, expected to exceed the original assumptions. Rising unemployment has impeded the consolidation of public finances, which is one of the reasons why Portugal made an agreement with the troika comprising the IMF, the European Commission and the European Central Bank, ECB, to revise its government deficit target from 4.5 to 5.0 per cent of GDP in 2012. Now the deficit is not expected to fall below 3 per cent of GDP before 2014 (previously 2013).

As early as in November 2010, an audit of the data for *Greece's* government budget deficit in 2009 showed that the deficit was approximately 2 percentage points larger than assumed in the assistance package from May 2010. At the same time, the recession has been deeper than first assumed. So Greece has had difficulty in meeting the requirements of both the May 2010 loan programme and the revised programme from March 2012. For this reason, among others, the programme was updated in November 2012.

Despite increased financial turmoil, *Ireland* has met the requirements of the 2010 loan programme on an ongoing basis, and, as originally planned, the government budget deficit is expected to be less than 3 per cent of GDP in 2015, while a current-account deficit has made way for a surplus. As a result, in July and August Ireland issued government debt for the first time since September 2010.

Since 2009, *Italy* has managed to reduce its deficit at the assumed rate despite weak growth, and a deficit below 3 per cent of GDP in 2012 is just expected to be achievable. This is attributable to factors such as extensive consolidation of public finances with a view to balancing the government budget in 2014.

The development in *Spain's* government budget balance since 2010 has been worse than assumed in 2010, to some extent because economic activity has been weaker than assumed. Since the beginning of 2012, the target deficit for 2012 has been revised several times: from 4.4 to 5.3 per cent of GDP in April, and to 6.3 per cent of GDP in June. The European Commission's most recent forecast operates with a deficit of 8.0 per cent of GDP in 2012.

grammes[1] or loan programmes from the EU and the International Monetary Fund, IMF. As a result, particularly Greece, Portugal and Spain have had difficulty in following the paths set out in their programmes towards reduction of their government budget deficits, cf. Box 1.

The European Commission has performed a thorough analysis of the reasons why the forecast estimates of the macroeconomic development

[1] Under the Stability and Growth Pact, all euro area member states prepare annual stability programmes, while non-euro area member states prepare convergence programmes. These programmes outline the individual member states' short- and medium-term budget strategies.

were off the mark and concludes that the deviations are to a large extent attributable to higher-than-expected interest rates, which have curbed growth.[1] Another, albeit less significant, reason for the weaker-than-assumed economic development could be that the fiscal tightening measures have had a stronger negative impact on economic activity than assumed. Finally, factors such as strikes and problems with the implementation of the reforms are also likely to have affected growth.

Progress has also been made in terms of reducing the current-account deficits of the GIIPS member states. Ireland has already achieved a surplus, and Portugal, Greece and Spain have reduced their deficits. The deficits of Spain and Italy are expected to be more or less eliminated over the next couple of years. For the GIIPS member states overall, the current-account deficit has been reduced by approximately 3 per cent of GDP since the peak in 2008. In contrast, the French balance of payments has gradually deteriorated, so that France now has a deficit of around 2.5 per cent of GDP, compared with a surplus of the same size just over 10 years ago, cf. Chart 6.

The reduced GIIPS current-account deficits are to a large extent a result of the weaker economy. Shrinking domestic demand has resulted in lower imports, thereby reducing the current-account deficit. At the same time, high unemployment has contributed to dampening wage inflation, which will improve competitiveness in the slightly longer term. Measured by nominal unit labour costs, the level of wage costs has been reduced moderately in Spain, Greece and Portugal and strongly in Ireland since the end of 2008, cf. Chart 7. In general, the balance of payments has primarily been improved by reducing domestic demand.

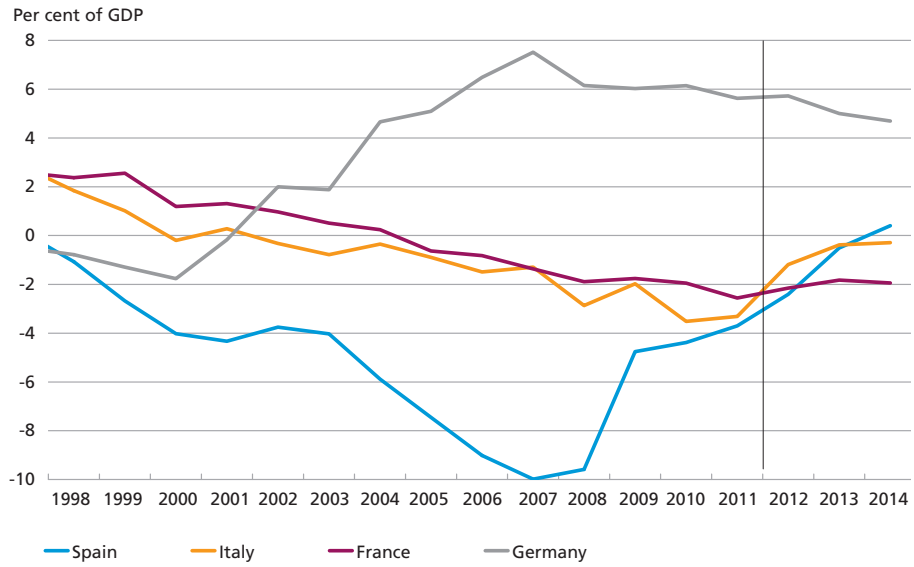
French unit labour costs continued to rise, even after the onset of the financial crisis, and as competitiveness has improved in the GIIPS member states and likewise in Germany over a slightly longer period, it has become increasingly evident that France needs to do the same. This was recently pointed out by the IMF and also by a commission set up by the French government. The government has subsequently tabled a plan comprising 35 initiatives to strengthen France's competitiveness.

Euro area inflation, measured by the increase in the Harmonised Index of Consumer Prices, HICP, was 2.2 per cent in November, mainly buoyed up by rising energy prices and higher indirect taxes. Underlying inflationary pressures are lower due to the weak economy and ample spare capacity. If changes in VAT and other indirect taxes are eliminated, the increase in HICP is around 0.4 percentage point lower than the increase in the overall HICP during 2012 due to tax increases that have already

[1] Cf. Box 1.5 in the European Commission's autumn forecast, November 2012.

BALANCE OF PAYMENTS, CURRENT ACCOUNT, SELECTED EU MEMBER STATES

Chart 6

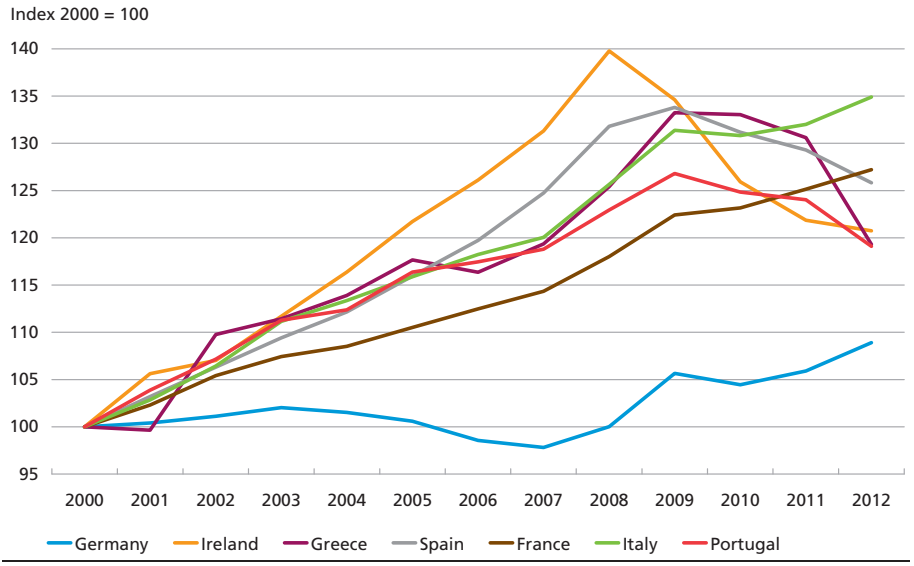


Source: European Commission's autumn forecast, November 2012. Estimates for 2012-14.

been implemented. Several member states have either increased VAT recently or decided to do so. Spain raised its highest VAT rate by 3 percentage points in September, while also extending this rate to a broader range of goods, while the Netherlands raised VAT by 2 percentage

NOMINAL UNIT LABOUR COSTS, SELECTED EU MEMBER STATES

Chart 7



Note: Estimates from the European Commission for 2012.
Source: Ameco.

points in October. Both Finland and Italy have decided to raise VAT by 1 percentage point in 2013. Following the decision to phase out nuclear power in Germany, investments in renewable energy have increased significantly. These investments are financed via an electricity surcharge; viewed in isolation this is expected to increase German consumer prices by 0.2 percentage point in 2013.

Financial conditions

The positive trend in the financial markets in the 3rd quarter has continued so far. Especially the announcement of the ECB's most recent monetary-policy instrument, Outright Monetary Transactions (the OMT programme), in early September caused the European markets to strengthen. The programme enables the purchase in the secondary market of government securities with maturities of 1-3 years from crisis-ridden euro area member states that have entered into a programme with the European Financial Stability Facility, EFSF, and the European Stability Mechanism, ESM, and meet the programme conditionalities.[1]

Spanish and Italian government yields fell in connection with the announcement of the OMT programme, but then remained more or less constant until November, cf. Chart 8.

In the second half of November first the Italian and then the Spanish government spread narrowed further. It may have been the temporary solution to the Greek problems in the form of an updated Greek loan programme that had a positive knock-on effect on Spanish and Italian government bonds.

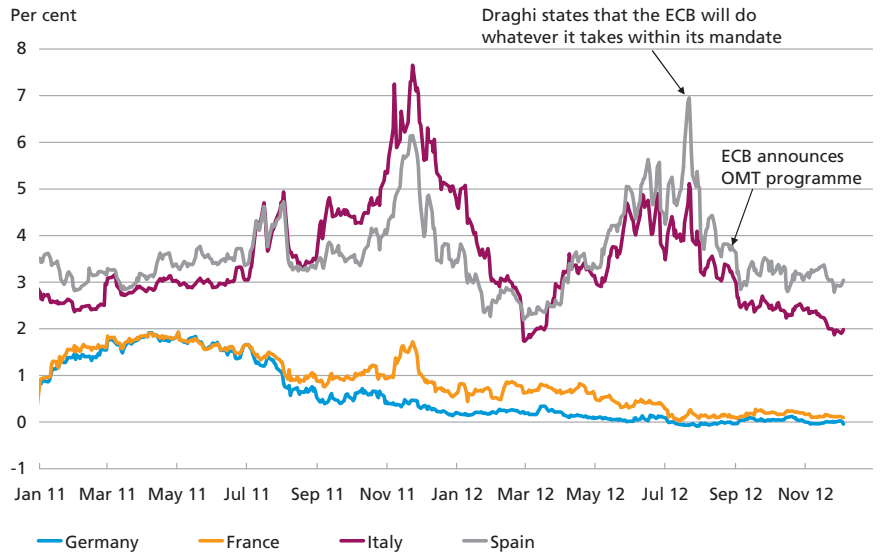
The benchmark stock indices in the key economies rose during the 3rd quarter and have remained more or less stable since then. In the foreign-exchange markets, the euro also strengthened somewhat against the dollar.

Lending to both households and non-financial corporations remains weak in the euro area, and credit growth is negative, cf. Chart 9 (left). The decline reflects subdued demand for loans from households and firms in the current situation with weak economic activity and considerable uncertainty. Moreover, credit supplies in some euro area member states are impeded by poorly functioning financial markets and more difficult funding conditions for banks, at a time when banks are also reducing their balance sheets. The most recent ECB survey of credit conditions indicates that the banks in the 3rd quarter tightened credit conditions further for the corporate sector. At the same time, the

[1] Cf. Box 2 on p. 11 in Danmarks Nationalbank, *Monetary Review*, 3rd Quarter 2012, Part 1.

NOMINAL YIELDS ON 2-YEAR GOVERNMENT BONDS, SELECTED EU MEMBER STATES

Chart 8



Source: Reuters EcoWin.

respondent banks state that demand from firms for loans fell in the 3rd quarter, having risen in the 2nd quarter.

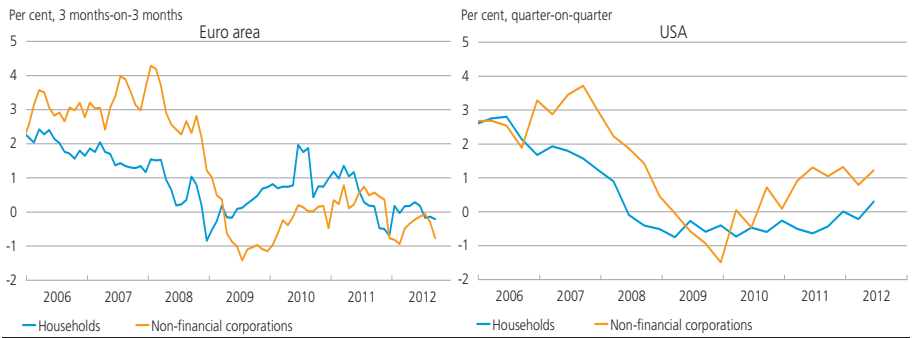
The USA is seeing stronger credit growth. Lending to the corporate sector has grown steadily over the last year, and recently there has also been marginally positive growth in credit extended to households, cf. Chart 9 (right).

Growth outlook

The international organisations unanimously predict only gradually higher growth in the world economy after the weak 1st half of 2012.

CREDIT GROWTH IN THE EURO AREA AND THE USA

Chart 9



Source: Reuters EcoWin.

ESTIMATED GDP GROWTH IN SELECTED ECONOMIES Table 1

Per cent	2011	2012	2013	Change relative to May 2012	
				2012	2013
USA	1.8	2.2	2.0	-0.1	-0.6
Euro area	1.5	-0.4	-0.1	-0.3	-1.0
Germany	3.1	0.9	0.6	-0.3	-1.4
France	1.7	0.2	0.3	-0.4	-0.9
Italy	0.6	-2.2	-1.0	-0.5	-0.6
Spain	0.4	-1.3	-1.4	0.3	-0.6
UK	0.9	-0.1	0.9	-0.6	-1.0
Sweden	3.9	1.2	1.9	0.6	-0.9
Japan	-0.7	1.6	0.7	-0.4	-0.8
China	9.3	7.5	8.5	-0.7	-0.8
India	6.9	4.4	6.5	-2.9	-1.3

Note: Change relative to May 2012 indicates revisions relative to OECD, *Economic Outlook,* No. 91 from May 2012.
Source: OECD, *Economic Outlook,* No. *92*, November 2012.

The outlook has deteriorated since the spring, and forecasts have been adjusted downwards, especially for 2013, and by more for the euro area than for the USA, cf. Table 1.

As regards the euro area, the OECD's most recent forecast operates with negative growth both this year and next year, but with positive quarterly growth from the 2nd quarter of 2013 onwards. For the USA, moderate growth in the range of 2 per cent is expected in 2012 and also in 2013. In both the euro area and the USA, short-term growth is impeded by factors such as fiscal tightening and low confidence among households and firms. Accommodative monetary policies and expectations of a gradual improvement in financial conditions point in the opposite direction.

Despite the current dampening of growth, the emerging and developing economies are still expected to display relatively high GDP growth. In China, for example, there are already signs of increasing growth again. The expectations that these economies will recover more rapidly than the advanced economies are based on e.g. a wider scope to ease economic policy.

Among the international organisations it is broadly accepted that increased growth will not in itself be sufficient to bring about a marked reduction in unemployment, which is expected to remain high in many countries. In the advanced economies, inflation is expected to fall to around 1.75 per cent, primarily due to the ample spare capacity.

The two most significant risks to the forecast are both linked to the economic policy pursued. One risk is an escalation of the euro area sovereign debt crisis. If the crisis is not contained, and if government

FISCAL TIGHTENING IN THE USA, CURRENT LEGISLATION — Table 2

Per cent of GDP

Automatic spending cuts agreed when debt ceiling was raised	0.5
Expiry of extension of unemployment benefits	0.2
Lapse of payroll tax cuts	0.7
Increase of alternative minimum tax	0.6
Lapse of 2003 tax cuts (Bush tax cuts)	1.3
Other	0.9
Total	4.2

Source: IMF, *World Economic Outlook*, October 2012.

bond yield spreads cannot be kept at their current levels, macroeconomic developments will be worse than described above.

The second risk element is the uncertainty surrounding the fiscal negotiations in the USA. The current legislation entails that fiscal policy will automatically be tightened substantially at the turn of the year (the "fiscal cliff"). If all these tightening measures take effect and are not rapidly countered by easing measures, this will lead to fiscal tightening in excess of 4 per cent of GDP in 2013, cf. Table 2. The IMF and the OECD have assumed that fiscal policy will be tightened by only 1.5 per cent or so in 2013 and 2014, as it is expected that agreement will be reached on a short-term solution postponing most of the tightening measures for the time being, especially the automatic spending cuts and most of the tax increases. Such an agreement is currently being negotiated. Presumably it will form the basis for further negotiations in 2013 on a credible medium-term plan for achieving fiscal sustainability, as recommended by the IMF and the OECD, among others. A plan that will ensure a stable economic framework will also strengthen confidence among households and firms, thereby supporting economic activity.

Economic policy

Monetary policy remains accommodative in most economies. In the euro area, the ECB has added the OMT programme to its range of monetary policy instruments, cf. above. In September, the Federal Reserve increased its programme for buying mortgage-backed securities and announced that the pace of its purchases would not be lowered until employment and economic activity showed signs of lasting improvement. In the UK, the asset purchase programme has been increased and supplemented with a facility whereby banks that increase lending to the private non-financial sector are offered funding at a lower cost.

Spain has not applied for an actual loan programme from the European Stability Mechanism, ESM. But the most recent Spanish reform pack-

THE ESM AND RECAPITALISATION OF BANKS Box 2

The euro area member states' permanent support mechanism, the European Stability Mechanism, ESM, entered into force on 8 October 2012, making it possible to use ESM funds for e.g. recapitalisation of banks. The ESM treaty states that the ESM may grant loans to euro area member states with a view to recapitalising financial institutions, but does not mention the possibility of direct recapitalisation. However, the euro area heads of state or government did mention this possibility at their meeting in June, when they decided as follows: "When an effective single supervisory mechanism is established, involving the ECB, for banks in the euro area the ESM could, following a regular decision, have the possibility to recapitalize banks directly."

In some euro area member states this was interpreted to mean that the ESM would be able to provide direct recapitalisation as soon as a single European supervisory mechanism for banks had been established, and that it would be able to help to ease the pressure on government debt from an imminent need for recapitalisation, a case in point being the Spanish financial sector. Subsequently, the European Commission in September tabled its proposals to establish a single European supervisory mechanism for banks anchored in the ECB, including a timeframe for formal establishment of this mechanism from early 2013.

On 25 September, the Ministers of Finance of Germany, the Netherlands and Finland issued a joint declaration outlining their interpretation of the ESM's scope for manoeuvre in relation to direct recapitalisation of banks. They make it clear that direct recapitalisation by the ESM can only take place once the single supervisory mechanism is established and its effectiveness has been determined. Furthermore, direct recapitalisation should be used only to address problems arising after the establishment of an effective single supervisory mechanism, while problems resulting from losses on assets registered and administered under the previous national supervisory authorities should be handled by the national authorities.

After that, the European Council in October decided to ask the Eurogroup to lay down the precise operational criteria for when and how direct recapitalisation may be applied. The final result is not available yet.

Irrespective of whether recapitalisation of credit institutions takes place directly by the ESM or indirectly via ESM loans to a euro area member state, a number of conditions must be met. These must be specified in a Memorandum of Understanding, MoU, between the member state in question and the Commission. This also applies if the ESM is to provide direct recapitalisation, even though the ESM's direct exposure will then be to the financial institution in question, not to the member state where it is located. If ESM assistance is limited to recapitalisation, the conditions in the MoU will address only institution-specific conditions and conditions in the euro area financial sector. These may include, say, supervisory requirements, corporate governance rules or provisions on the handling of distressed banks. In other words, these conditions are of a different nature than those applying in connection with e.g. ESM contributions to general economic adjustment programmes.

Recapitalisation will be subject to observance of the general EU rules banning government subsidies.

The Commission – acting in collaboration with the ECB and the relevant European supervisory authority – will monitor whether the conditions for recapitalisation by the ESM are observed on a current basis.

age from October was prepared in close dialogue with the European Commission so that any further conditionalities in connection with such a request may be limited in extent. On the other hand, Spain has applied to the ESM for a loan of 39.5 billion euro to recapitalise the Spanish banks. The conditions for future direct recapitalisation of banks by the ESM are currently being discussed, cf. Box 2.

A precondition for direct recapitalisation by the ESM is that a single European supervisory mechanism for banks is established. This mechanism, together with a single deposit guarantee scheme and a single resolution mechanism, will constitute the elements of a banking union. Intensive negotiations are underway concerning its structure, including terms and conditions for non-euro area member states that opt in. For some time, the aim has been political adoption by the turn of the year and implementation during 2013.[1]

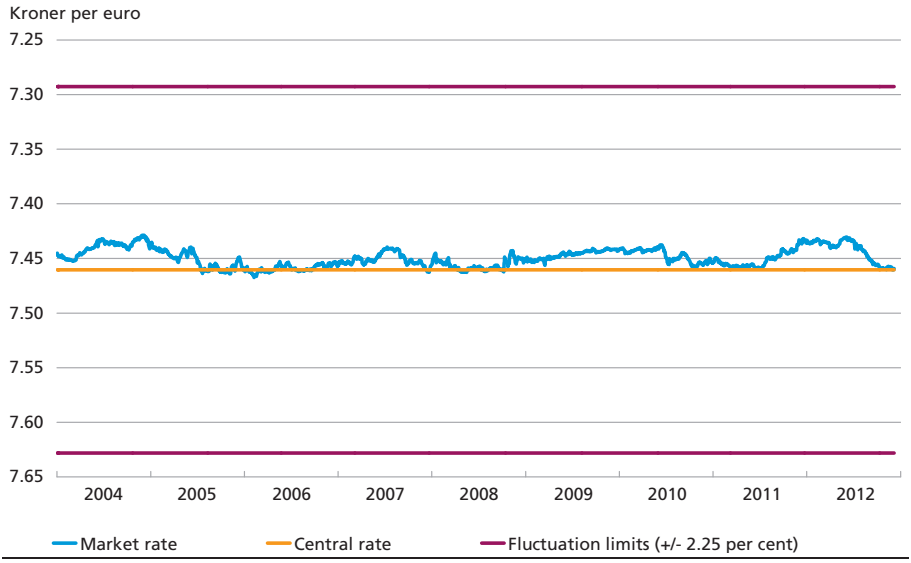
MONETARY AND EXCHANGE-RATE CONDITIONS

In recent months, the krone has weakened a little, from a level 0.1 per cent stronger than its central rate to close to its central rate in ERM 2, cf. Chart 10. This trend began when Danmarks Nationalbank on 5 July 2012 mirrored the ECB's interest-rate reduction and introduced a negative rate of interest on certificates of deposit. Subsequently, confidence in the handling of the debt crisis by a number of euro area member states has improved. As a result, interest rates in these member states have fallen, leading to a general strengthening of the euro. Several other countries receiving capital inflows in the last part of 2011 and the first part of 2012 have also seen their currencies weaken against the euro in recent months.

Like the ECB, Danmarks Nationalbank has not altered its monetary-policy interest rates since early July 2012, when it mirrored the ECB's interest-rate reduction. The spread between collateralised money-market interest rates in Denmark and the euro area – the Cita and Eonia swap rates, respectively – has narrowed since then. Collateralised money-market interest rates are an expression of the expected overnight interest rates in Denmark and the euro area, respectively. Turnover in overnight loans in the Danish money market is maintained after the introduction of the negative rate of interest on certificates of deposit, cf. the article "The Danish Money Market at Low Interest Rates" in this

[1] For further details about the closer economic cooperation in the euro area and the single European supervisory mechanism for banks, see Box 4 on p. 14 in Danmarks Nationalbank, *Monetary Review*, 3rd Quarter 2012, Part 1.

EXCHANGE RATE OF THE KRONE VIS-À-VIS THE EURO Chart 10



Note: Reverse scale. The most recent observation is from 6 December 2012.
Source: Danmarks Nationalbank.

Monetary Review. The circulation of banknotes has not been affected by the negative rate of interest on certificates of deposit.

The foreign-exchange reserve was kept at a high level from August to November 2012. At end-November it was kr. 512.1 billion, following modest interventions totalling just over kr. 2.6 billion from September to November. The decline in the foreign-exchange reserve reflects net sales of foreign exchange for kr. 1.7 billion by Danmarks Nationalbank, as well as the Danish government's net repayment of foreign-exchange loans totalling kr. 0.6 billion in this period.

On 28 September 2012, Danmarks Nationalbank offered its monetary-policy counterparties 3-year loans. Loans totalling kr. 37 billion were raised, bringing the outstanding volume of 3-year loans to kr. 53 billion after repayments.

On 5 October 2012, Danmarks Nationalbank raised the limit for the monetary-policy counterparties' current-account deposits by an amount corresponding to the increase in the 3-year loans, so that the overall current-account limit was just under kr. 105 billion. The reason was that, viewed in isolation, the increase in the 3-year loans entails an equivalent increase in the counterparties' holdings of certificates of deposit at the negative rate of interest, and that the counterparties' holdings already ensured a sufficient pass-through from the rate of interest on certificates of deposit to money-market interest rates before the most recent 3-year loans were offered.

Developments in the money and capital markets

In early December 2012, the rates of interest in the money and capital markets remained historically low.

The collateralised Danish money-market interest rate, given by the 3-month Cita swap rate, has risen slightly since mid-September 2012, to -0.05 per cent at the beginning of December, cf. Chart 11. In the same period, the uncollateralised Danish money-market interest rate, measured by the 3-month Cibor, fell a little, to 0.3 per cent in early December. This means that the spread between the uncollateralised and collateralised money-market rates narrowed from September to December 2012 and is now closer to zero. In recent months, the euro area interest-rate spread has also narrowed, the reason being that the uncollateralised interest rate has fallen while the collateralised interest rate has been more or less constant.

In late September 2012, the Danish Ministry of Business and Growth published an account of Cibor, the Danish reference rate for uncollateralised lending in kroner. The Ministry found, "… that the system for the fixing of Cibor has a number of weaknesses, and that the banks' own controls and procedures have been insufficient".[1] In order to restore confidence in the reference rate system, the Minister for Business and Growth has taken three initiatives. An agreement has been concluded with the financial organisations so that from 1 January 2013 the Danish Bankers Association will introduce a market-based supplementary reference rate based on the Cita swap rate. In addition, the Minister has tabled two bills to establish supervision of the reference rate under the auspices of the Danish Financial Supervisory Authority, and to give the Danish Financial Supervisory Authority, in its capacity as supervisory authority, access to the banks' internal documents concerning Cibor fixing.

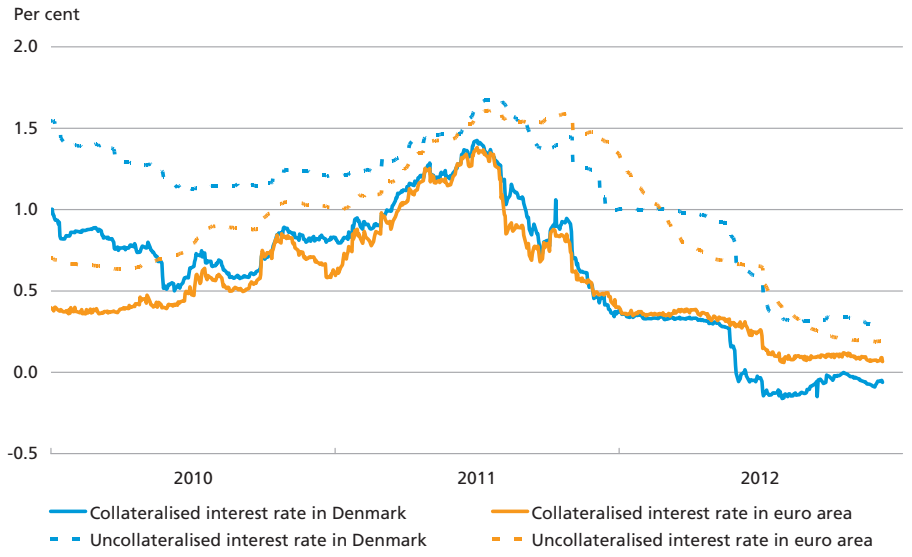
On 29 November 2012, an auction was held of 3-, 6- and 9-month T-bills. Sales at the auction totalled kr. 11.9 billion at rates of interest of -0.39, -0.30 and -0.25 per cent, respectively. Rates of interest in the T-bill auctions have been negative since late May 2012.

The 10-year government bond yield was more or less unchanged from mid-September to early December 2012, when it was 1.2 per cent, cf. Chart 12. In early December 2012, the yield on Danish government securities was negative for maturities of up to 3.5 years.

In early September 2012, a new 10-year Danish government bond was issued with the same maturity as the inflation-linked government bond

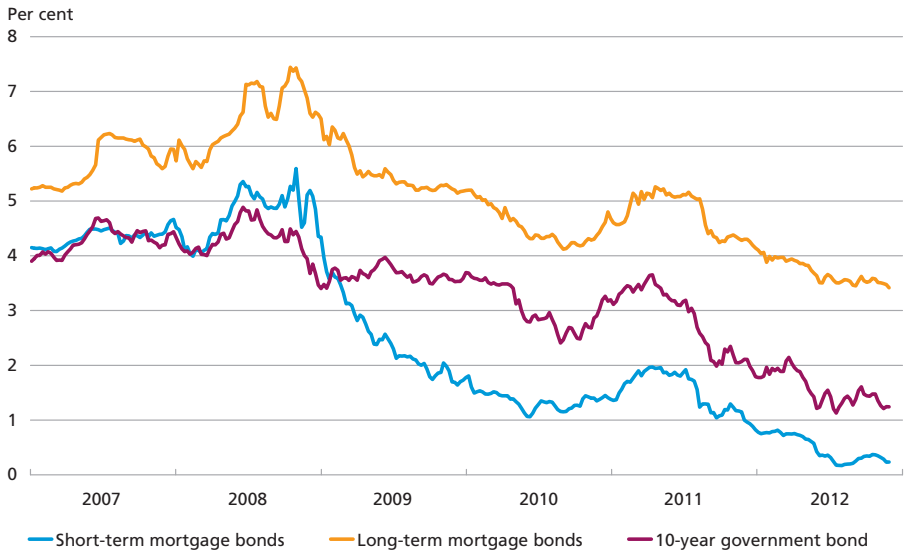
[1] Cf. the press release "Redegørelse om Cibor" (Account of Cibor – in Danish only) from the Ministry of Business and Growth, 27 September 2012.

COLLATERALISED AND UNCOLLATERALISED MONEY-MARKET INTEREST RATES IN DENMARK AND THE EURO AREA — Chart 11



Note: The collateralised interest rates in Denmark and the euro area are given by the 3-month Cita swap rate and Eonia swap rate, respectively. The uncollateralised interest rates in Denmark and the euro area are given by the 3-month Cibor and Euribor, respectively. The most recent observations are from 6 December 2012.
Source: Danmarks Nationalbank.

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 based on 30-year fixed-rate callable mortgage bonds. The most recent observations are from calendar week 48.
Source: Nordea Analytics, Association of Danish Mortgage Banks and Danmarks Nationalbank.

issued in May 2012. The outstanding volume in the inflation-linked government bond was about kr. 10 billion at the beginning of December 2012. Based on the yields on these two bonds, it is possible to calculate the implied market-based inflation expectations. They have mirrored the corresponding German expectations and stood at 1.7 per cent in early December 2012, cf. Box 3.

The yields on short- and long-term mortgage bonds were 0.2 and 3.4 per cent, respectively, at the beginning of December 2012, which is around the same level as in mid-September 2012, cf. Chart 12. In the period July-September 2012, the mortgage banks increased their administration margins for loans to both households and non-financial corporations slightly. The mortgage banks have announced that the highest increases in administration margins will apply to adjustable-rate loans, deferred-amortisation loans and loans with high loan-to-value ratios.

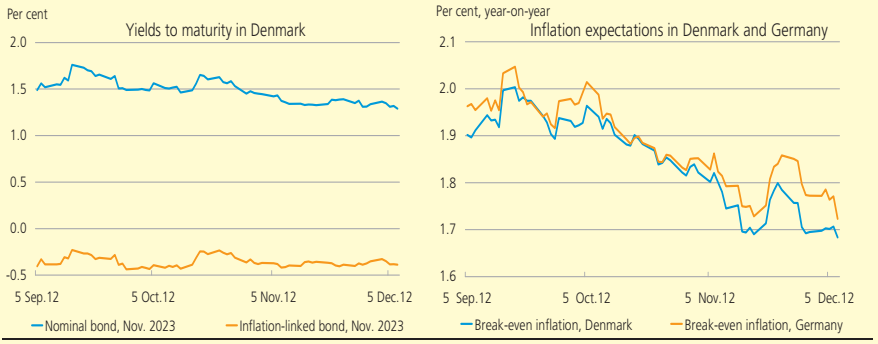
In November and December the mortgage banks conducted refinancing auctions for the bonds underlying adjustable-rate loans. It was expected beforehand that the total refinancing requirement would be kr. 420 billion, i.e. some kr. 70 billion lower than in the 2011 auction. One of the reasons for the decline is the shift of some kr. 40-50 billion from very short-term bonds to 3- and 5-year bonds and fixed-rate loans relative to last year. Furthermore, the mortgage banks have continued to spread the auctions over the year, which helps to reduce the refinancing pressure up to the turn of the year. The rate of interest on 1-year loans averaged 0.26 per cent.

The banks' interest rates on outstanding loans to both households and non-financial corporations fell from May to October 2012. For the households, lending rates have mainly fallen for housing loans. The banks operate with differentiated interest rates across customer segments, based on e.g. the collateral pledged. This is reflected in the average rates of interest for new small and large loans to non-financial corporations, which were 1.3 and 5.5 per cent, respectively, in late October 2012. The difference in interest rates should be viewed in the light of the firms' sizes and the collateral pledged, as well as the costs of administering the loan. In addition, small firms generally have a higher probability of default than larger firms. The rates of interest on fairly well-collateralised loans have mirrored money-market interest rates more closely than the rates of interest on loans with lower quality collateral. The banks' deposit rates also fell, but not to the same extent as the lending rates. This is because the banks have not been able to lower deposit rates further since the rates of interest on most ordinary current accounts were already zero or close to zero. Overall, this means

MARKET EXPECTATIONS OF INFLATION IN DENMARK — Box 3

In May 2012, the Danish government issued a 10-year inflation-linked bond maturing in November 2023. The nominal coupon rate on the inflation-linked government bond is fixed, while the principal is regularly indexed to the development in the consumer price index, CPI. Interest payments and repayments are based on the indexed principal. The inflation-linked bond makes it possible to calculate a market-based indicator of expectations of average inflation in Denmark over the maturity of the bond, i.e. "break-even inflation". Break-even inflation is the level of inflation at which the yield on the inflation-linked government bond matches the yield on a corresponding nominal government bond. Break-even inflation can be calculated by subtracting the yield to maturity on the inflation-linked bond from the yield to maturity on a nominal government bond with the same maturity. The opening of a new nominal Danish government bond in September 2012 with exactly the same maturity as the inflation-linked bond makes it possible to calculate break-even inflation in Denmark directly on the basis of the yields on these two bonds.

GOVERNMENT BOND YIELDS AND INFLATION EXPECTATIONS — Chart 13



Note: The most recent observations are from 7 December 2012.
Source: Bloomberg.

The yield to maturity on the inflation-linked and nominal government bonds, respectively, have moved in parallel since September, cf. Chart 13 (left). Break-even inflation in Denmark has been on the low side of 2 per cent, but has declined slightly over the period, cf. Chart 13 (right). This means that the market expects average annual inflation in Denmark to be under 2 per cent towards 2023.

However, there are a number of methodological problems associated with interpreting the calculated break-even inflation purely as expectations of inflation in Denmark. Firstly, the yield spread between the nominal and inflation-linked government bonds includes an inflation risk premium. This is the excess yield required by market participants in return for being exposed to fluctuations in the purchasing power of payments on the nominal bond, which entails that break-even inflation deviates from inflation expectations. Secondly, the yield spread may include a liquidity premium due to lower liquidity in the inflation-linked government bond than in the nominal government bond. Such a liquidity premium entails that break-even inflation is lower than the inflation expectations. Thirdly, the yield spread is sensitive to temporary price distortions between the nominal and inflation-linked government bonds. The turmoil in the euro area may have generated excessive demand for the nominal Danish government bond, which reduces the yield on this bond. This could explain why break-even inflation is marginally lower in Denmark than in Germany, cf. Chart 13 (right).

that interest-rate margins have narrowed in recent months, cf. the article "The Banks' Interest Rates" in this Monetary Review.

At the end of November 2012, Union Bank of Switzerland, UBS, withdrew as a reporter for the Danish T/N interest rate, which is an uncollateralised overnight interest rate for money-market loans running from the 1st to the 2nd banking day after the transaction date. Subsequently eight Danish and foreign banks report for the T/N interest rate.

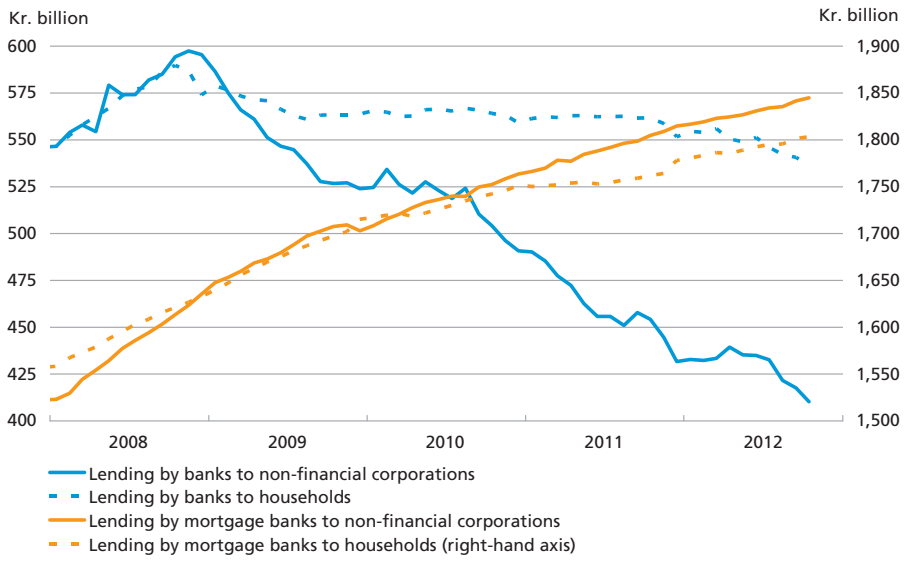
In connection with Bank Rescue Package 2, the banks and mortgage banks were able to issue loans with individual government guarantees and maturities of up to three years. The outstanding government-guaranteed debt matures between 2011 and 2013. At end-October 2012, the debt totalled kr. 74 billion, which was kr. 120 billion lower than the original outstanding debt at the end of 2010. The institutions have repaid the debt as planned and in some cases even prematurely.

In November 2012, the Minister for Business and Growth presented a bill to establish a Systemic Risk Council. According to the bill, the Council's tasks will be to prevent and reduce systemic financial risks. The Council is to monitor and identify financial risks in Denmark and to issue observations, warnings and recommendations. Warnings and recommendations may be issued to the Danish Financial Supervisory Authority and – if they relate to legislation – to the government. If a recommendation is not observed, the recipient must justify this decision. The Council will comprise one representative from each of the Ministries of Business and Growth, Finance, and Economic Affairs and the Interior, two from the Danish Financial Supervisory Authority, two from Danmarks Nationalbank and three independent experts. It is proposed that Danmarks Nationalbank chair the Council and provide secretariat services. The Danish Financial Supervisory Authority and the Ministries of Business and Growth, Finance, and Economic Affairs and the Interior will participate in the secretariat.

Lending by banks and mortgage banks

Total seasonally adjusted lending by banks and mortgage banks has been more or less constant since the beginning of 2010. Lending by banks to non-financial corporations declined by around kr. 22 billion from end-July, to around kr. 410 billion at end-October 2012, cf. Chart 14, one reason being that corporate loans for almost kr. 10 billion from FIH Erhvervsbank have been transferred to the Financial Stability Company. Since the latter does not have a banking licence and therefore is not included in Danmarks Nationalbank's lending statistics, this makes a weighty contribution to the decline in lending. In the same period,

THE BANKS' AND MORTGAGE BANKS' SEASONALLY ADJUSTED LENDING TO HOUSEHOLDS AND NON-FINANCIAL CORPORATIONS Chart 14



Note: Seasonally adjusted data. Outstanding volumes from banks and mortgage banks located in Denmark. The most recent observations are from October 2012.
Source: Danmarks Nationalbank.

lending to non-financial corporations by mortgage banks rose by just over kr. 5 billion, to kr. 572 billion. Total lending to households was virtually unchanged in this period, standing at kr. 2,339 billion at end-October 2012, cf. Chart 14. However, this masks a slight shift in lending from banks to mortgage banks, which has been a general trend in recent years.

The decline in lending to non-financial corporations by the mortgage banks should also be viewed against the backdrop of an increasing tendency for Danish companies to issue bonds to raise capital. Since the beginning of 2010, net issues have totalled kr. 42 billion nominally. The total circulating volume of corporate bonds has been rising steadily and had reached kr. 167 billion by end-October 2012, corresponding to around 40 per cent of the banks' lending to the corporate sector. All the same, it is still limited in relation to total corporate lending by banks and mortgage banks, which is kr. 983 billion. It is estimated that the average yield to maturity on outstanding corporate bonds was in the range of 3-4 per cent at end-October 2012.

In Danmarks Nationalbank's lending survey in the 3rd quarter of 2012, the banks and mortgage banks stated that they had tightened their credit standards and raised the price of loans to households. They also stated that the price of loans to non-financial corporations had been

raised. According to the credit institutions, the tightening was mainly attributable to higher funding costs. The credit institutions did not indicate any significant changes in credit policies in the 4th quarter.

Under the auspices of the Ministry of Business and Growth, a committee has been set up to consider corporate bonds as a source of funding for small and medium-sized enterprises. Members of the committee included representatives from the financial sector, industry associations, ministries and Danmarks Nationalbank. The committee reported to the Minister for Business and Growth on 22 November 2012, making a number of recommendations. One recommendation is to introduce a legal basis for establishing a trustee system in Denmark as seen in e.g. Norway.[1] The system facilitates the process in connection with the issuance of corporate bonds and means that the trustee steps in as the representative of the owners in the event of default on the loan. Another recommendation is to allow banks to issue bonds or other securities against a specified pool of loans to small and medium-sized enterprises as collateral, i.e. securitisation.

Danmarks Nationalbank supports the work to improve the framework conditions for corporate funding. However, it is important that new funding opportunities are offered on market terms and do not include government guarantees or subsidies. A government-guaranteed product is fundamentally different from a product without a government guarantee, and hence it will not be a "catalyst". Government guarantees will not remove the actual barriers, but may remove the incentives to find market-based solutions. Moreover, government guarantees for corporate bonds will mean that intermediaries and investors lose the incentive to credit rate the loan as the guarantee eliminates the risk. A market built up around government guarantees will distort competition, and it will give the government potentially large contingent liabilities. Experience also shows that it can be difficult for the government to withdraw again.

In November 2012, a majority in the Folketing (Danish parliament) concluded an agreement on a series of new funding opportunities for Vækstfonden and Eksport Kredit Fonden aimed at small and medium-sized enterprises. Among other things, the agreement means that the limit for subordinated loans and growth guarantees offered by Vækstfonden is increased, and that Eksport Kredit Fonden will be able to offer guarantees for investment loans for exporters' production facilities in Denmark. In the agreement it is assessed that these initiatives will form the basis for a kr. 12 billion increase in lending over the next three years.

[1] A trustee acts as an intermediary between the issuer of the bond and the investor.

THE DANISH ECONOMY

Activity rose by 0.1 per cent in the 3rd quarter, following a decline of 0.7 per cent in the preceding quarter, cf. Table 3. The weak growth was driven by increased business investment and public consumption, while private consumption had a downward impact. Exports also fell after a sharp rise in the 2nd quarter, while import growth was positive, but somewhat lower than in the preceding quarters.

Private consumption fell marginally after a modest increase in the first two quarters of the year. This should be viewed in the light of the weak development in disposable income and virtually unchanged wealth. The small decline in consumption was caused by a continued fall in retail turnover, while there was a notable increase in car sales. Besides consumption, household investments, predominantly consisting of residential investments, have fallen in the last couple of quarters.

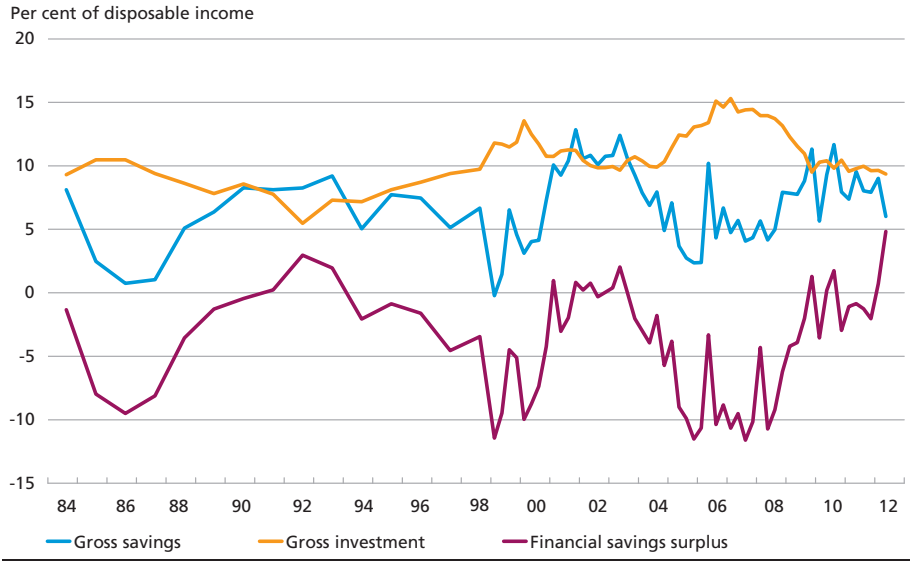
Seen in relation to household disposable income, neither consumption nor investment are particularly low, but both are a little below their average for the last nearly 30 years. The disbursement of early retire-

KEY ECONOMIC VARIABLES — Table 3

Real growth on preceding period, per cent	2011	2012	2013	2014	2012 Q1	2012 Q2	2012 Q3
GDP	1.1	-0.4	1.3	1.8	0.1	-0.7	0.1
Private consumption	-0.5	1.0	1.2	1.8	0.2	0.2	-0.1
Public consumption	-1.5	0.1	1.2	0.8	0.3	0.5	0.2
Residential investment	14.6	-9.2	1.7	3.7	-8.5	-4.0	-0.8
Public investment	4.2	4.0	-6.9	-1.0	-5.8	7.6	-1.8
Business investment	-1.8	6.6	4.6	3.1	6.0	-3.9	4.3
Inventory investment[1]	0.5	-0.7	0.0	0.2	0.6	-1.3	0.3
Exports	6.5	1.9	2.7	3.6	0.1	2.4	-0.8
Industrial exports	7.7	2.3	3.8	5.1	1.7	2.1	1.7
Imports	5.6	3.2	2.9	3.8	1.8	0.9	0.3
Employment, 1,000 persons	2,767	2,753	2,742	2,753	2,760	2,754	2,752
Gross unemployment, 1,000 persons	162	165	171	165	161	162	165
Net unemployment, 1,000 persons	109	121	136	134	110	117	124
Balance of payments, per cent of GDP	5.7	5.5	4.8	4.8	4.3	7.8	5.2
Government balance, per cent of GDP	-2.0	-3.9	-2.8	-2.8	-1.6	-6.4	-4.6
House prices, per cent year-on-year	-2.8	-3.8	2.0	3.8	-5.5	-5.8	-3.2
Consumer prices, per cent year-on-year	2.7	2.4	1.7	1.8	2.7	2.2	2.4
Hourly wages, per cent year-on-year	2.3	1.8	2.0	2.3	2.1	2.0	1.6

[1] Contribution to GDP growth.

HOUSEHOLD SAVINGS AND INVESTMENT Chart 15



Note: Annual observations until 1998, seasonally adjusted quarterly observations from then on. Gross savings are disposable income less consumption. The financial savings surplus is gross savings less gross investment and adjusted for capital transfers, including disbursement of early retirement contributions from the 2nd quarter of 2012. The most recent observations are from the 2nd quarter of 2012.
Source: Statistics Denmark and own calculations.

ment contributions has had only a limited impact on private consumption. Instead, it led to a significant boost in the households' financial savings surplus in the 2nd quarter, cf. Chart 15. Since 2009, the financial savings surplus has been a little higher than its long-term average, and hence households are still consolidating. It should be borne in mind that debt is high, and that the renewed fall in house prices has increased the loan-to-value ratio for owner-occupied homes.

Household disposable income is currently supported by extremely low interest rates. But the high debt level relative to disposable incomes makes households very vulnerable to interest-rate changes and has led to more prudence. In connection with the December mortgage-credit auctions, households have moved towards loans with longer fixed-interest periods. This to some extent dampens the uncertainty about future interest expenses.

The subdued development in wages is expected to continue in the coming years. As a result, consumption is predicted to rise moderately, by 1.2 per cent in 2013 and 1.8 per cent in 2014. This estimate is also supported by consumer confidence, which has been more or less neutral in recent months. On the one hand, a majority of households expect the situation to improve over the next year, especially in terms of their own finances, but also for the economy overall; on the other hand, the

assessment of the current economic situation compared with the situation a year ago is less favourable.

Total business investment rose by 4.3 per cent in the 3rd quarter, having fallen by almost 4 per cent in the 2nd quarter and risen by 6 per cent in the 1st quarter. Taking into account the large quarterly fluctuations, business investment has been virtually unchanged since mid-2009. Building and construction investment continued to fall and was very low, also in a longer-term perspective. On the other hand, investment in machinery, transport equipment, software etc. picked up relative to the 2nd quarter. Investment in equipment is expected to increase somewhat next year, partly due to the fact that the capital stock is small compared with output and its size is below the long-term average. Hence, the investment ratio, i.e. investments in equipment relative to gross value added, will rise to a level close to its average in 2013.

The overall financial savings surplus of households and firms has been very high since 2009. This year it is expected to be around 9.5 per cent of GDP, which is the highest level since the data series started in 1971. The savings surplus usually fluctuates with the business cycle, but in an international comparison the increase in recent years has been greater than the cyclical position would normally warrant, cf. the article "Corporate Saving and Investment" in this Monetary Review. Part of the very large savings surplus is attributable to a high level of savings in the financial sector, reflecting the need and requirement for increased solvency in the banking sector. Non-financial corporations also make a substantial contribution. Irrespective of higher investment, the firms' large savings surplus is not projected to decline notably in the coming years.

Exports fell in the 3rd quarter due to a temporary decline in fuel exports in connection with the maintenance of a North Sea production field. In the first nine months of 2012, the Danish industrial sector has increased its market share in volume terms. Wage inflation is slightly lower in Denmark than abroad, and Danish industrial exports are generally less cyclically sensitive than those of other countries. In the forecast period, the market share declines slightly. The current-account surplus is expected to diminish a little in the coming years as domestic demand in Denmark is expected to partly close the gap to abroad which has arisen as a result of the weak development in Denmark in recent years.

GDP is projected to contract by 0.4 per cent this year, but then to grow by 1.3 per cent in 2013 and 1.8 per cent in 2014. Growth in the next two years will primarily be attributable to higher contributions from private consumption and from investment. The expected growth in GDP in 2013 and 2014 is stronger than the development in potential output. This will contribute to a gradual narrowing of the output gap. As the economy

picks up, the labour market is expected to improve during the 2nd half of 2013.

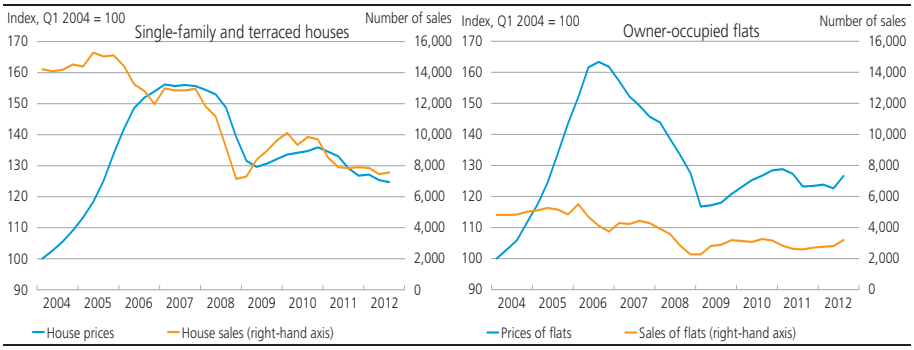
In the projection, the Southern European sovereign debt crisis is a significant negative risk. This has a direct impact on exports, but could also indirectly affect domestic demand by weakening household and business confidence. Another uncertainty factor is linked to private-sector consolidation. If confidence is restored soon, the level of investment and private consumption may rise more rapidly and strongly than assumed in the forecast.

The housing market

There are signs that prices in the housing market have stabilised following a weakening trend in 2011 that brought them back to the 2005 level. House prices have been virtually flat over the last half year. There was a fall in September, but it should be borne in mind that the most recent monthly figures, which are based on approximately 70 per cent of all trades, are usually adjusted upwards subsequently. The prices of owner-occupied flats have begun to rise in recent months, cf. Chart 16. Both short- and long-term interest rates are very low, which is supporting the market. At the current low level of interest rates, house prices are assessed to be below their equilibrium level and therefore it is estimated that they will rise moderately in 2013 and 2014.

The number of homes for sale has declined during 2012. From late 2011 to October 2012, the seasonally adjusted supply of houses fell by 10 per cent, to 41,200. For flats, the number has been reduced by more than a quarter, to 7,200. The main reason is that homes are taken off

PRICES OF HOUSES AND OWNER-OCCUPIED FLATS AND NUMBER OF SALES Chart 16



Note: Seasonally adjusted observations. The most recent observations are from the 3rd quarter of 2012, for which Statistics Denmark's monthly figures for July to September have been applied, while other observations are from the quarterly statistics. The number of officially registered sales is adjusted upwards with a lag as transactions are registered, which takes place when the home is taken into possession. It is therefore expected that the number of sales in the 3rd quarter will be adjusted upwards.

Source: Statistics Denmark and own calculations.

the market, as the number of sales has not risen. According to Statistics Denmark, sales of 2,500 houses and 1,000 flats were officially registered in September. Both figures are well below the historical average. The monthly figures cannot be broken down by geographical area, but according to quarterly data, sales of owner-occupied flats in the Copenhagen area rose in the 1st half of 2012. At the same time, the supply of flats has fallen relatively more in this area than in the rest of Denmark. The market for owner-occupied flats in Copenhagen is interesting as it has previously been the first market to respond to changes.

Although the supply of homes has fallen at the national level, this has not affected time on market, which remains long – just over 10 months for single-family and terraced houses and seven months for owner-occupied flats. There is a considerable geographical spread, the time on market being shortest in Copenhagen.

Foreign trade and balance of payments

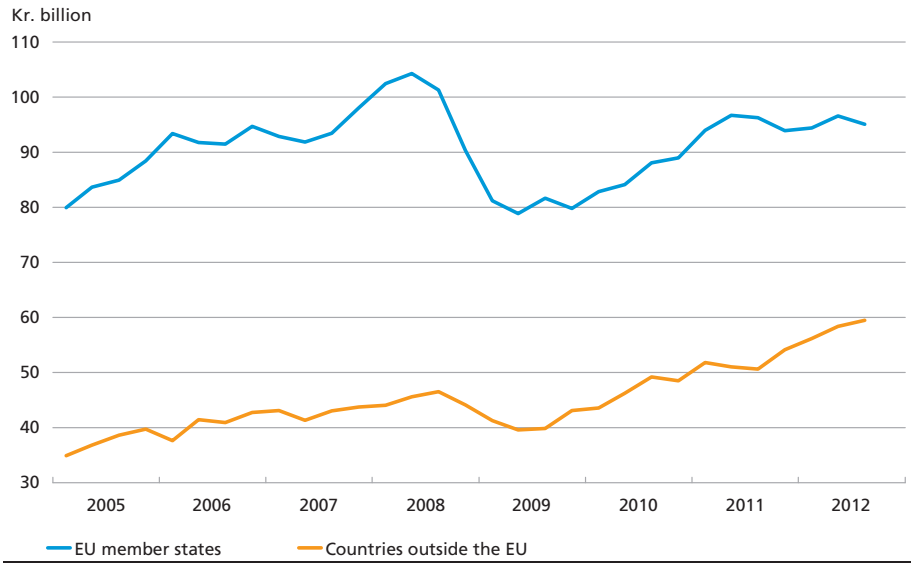
Seasonally adjusted export volumes fell by 0.8 per cent in the 3rd quarter. There was a strong reduction in energy exports due to lower North Sea production in connection with the maintenance of a large production field. This decline was temporary, and in October oil and gas production had resumed its normal level. The lower value of energy exports was to some extent offset by higher export values for chemicals and chemical products as well as agricultural produce. Import volumes grew by 0.3 per cent in the 3rd quarter. Imports of finished goods for consumption rose, while imports for the corporate sector declined. The seasonally adjusted trade surplus, excluding aircraft and ships, was kr. 22 billion in the 3rd quarter, which is in line with the level since mid-2009.

The weak international economy has dampened export growth since 2011, as the value of exports to EU member states has been virtually flat, cf. Chart 17. On the other hand, countries outside the EU, especially the USA and China, have purchased more Danish goods. This reflects higher growth in these countries, not rising market shares for Danish exporters.

In the forecast period, the market share for Danish industrial goods declines slightly. Combined with expectations that growth in the export markets will gradually begin to recover from a low level, this means that export volumes are estimated to grow by 1.9 per cent this year, rising to 3.6 per cent in 2014.

In the 12 months up to and including September 2012, the current-account surplus was kr. 103.9 billion, corresponding to 5.8 per cent of GDP. This is kr. 1.4 billion less than in the preceding 12-month period and is attributable to a higher surplus from investment income, while the surplus from trade in goods, and to a lesser extent also services, has

DANISH EXPORTS OF GOODS EXCLUDING SHIPS AND AIRCRAFT Chart 17



Note: Quarterly, seasonally adjusted observations.
Source: Statistics Denmark.

decreased. There was also a larger deficit from current transfers, which include e.g. aid to developing countries and net contributions to the EU.

Public finances

Real public consumption is estimated to grow by 0.1 per cent this year, which is somewhat below the budget for 2012. Consumption growth in 2011 was also significantly lower than planned. The lower-than-expected public consumption in both years is attributable to the efficient sanctions regime introduced in relation to local government budget overruns. Moreover, local government finance management has been tightened, and six-month interim accounts must now be prepared and be approved by the local council in September. This means that budget deviations can be addressed within the same year. In 2013 and 2014 public consumption is expected to rise by 1.2 and 0.8 per cent, respectively.

Not only public consumption, but also public investment has been lower than planned in the first three quarters of 2012. There are no indications that the planned increase this year will be realised, although some catching-up may be seen in the 4th quarter. A rising level of investment at the end of 2012 could make it difficult to slow down again in 2013.

The general government budget deficit is estimated to be kr. 71 billion this year, equivalent to 3.9 per cent of GDP. Of this, just under kr. 29

billion is attributable to one-off reimbursements of early retirement contributions. This year – as in the last two years – revenue from pension yield tax is expected to be significantly above the normal level. However, this item is subject to considerable uncertainty. The reason why it is particularly difficult to predict income from pension yield tax is that this tax is calculated on the basis of a mark-to-market principle so that tax is paid on both realised and unrealised capital gains during the calendar year. Consequently, taxes are determined by developments in the financial markets, notably developments in interest rates.

The tax agreement adopted in September 2012 provides for tax savings in 2013 by paying the tax on existing capital pensions now rather than when the money is disbursed. According to the government, this will give extraordinary revenue of just over kr. 5 billion, which is also assumed in this forecast for computational reasons. By doing so, the government budget deficit is expected to be 2.8 per cent of GDP in 2013. This revenue may turn out to be much higher and the deficit correspondingly smaller.

In structural terms, i.e. net of the effect of cyclical and temporary factors, budget balance will be achieved in 2013 according to the government This means that Denmark will just observe the EU recommendation to improve the structural budget balance by 1.5 per cent of GDP in the period 2010-13.

Labour market and capacity

Seasonally adjusted employment fell by 0.1 per cent from the 2nd to the 3rd quarter, continuing the weak trend seen in the last couple of years. Private-sector employment declined by 1,100, public-sector employment by 1,400. The latter decline is one of the reasons for the relatively low growth in public consumption in the 3rd quarter of 2012. In the forecast, total employment is set to rise during 2013.

Gross unemployment, which is the sum of net unemployment and people in active labour-market programmes, has been more or less flat the last 2½ years, but has risen marginally in recent months, to 165,500 in October after seasonal adjustment. This is the same level as in late 2005, before the Danish economy became overheated. New rules introduced early this year mean that fewer people are in activation. This is one of the reasons why net unemployment rose by nearly 18,000 in the first 10 months of 2012.

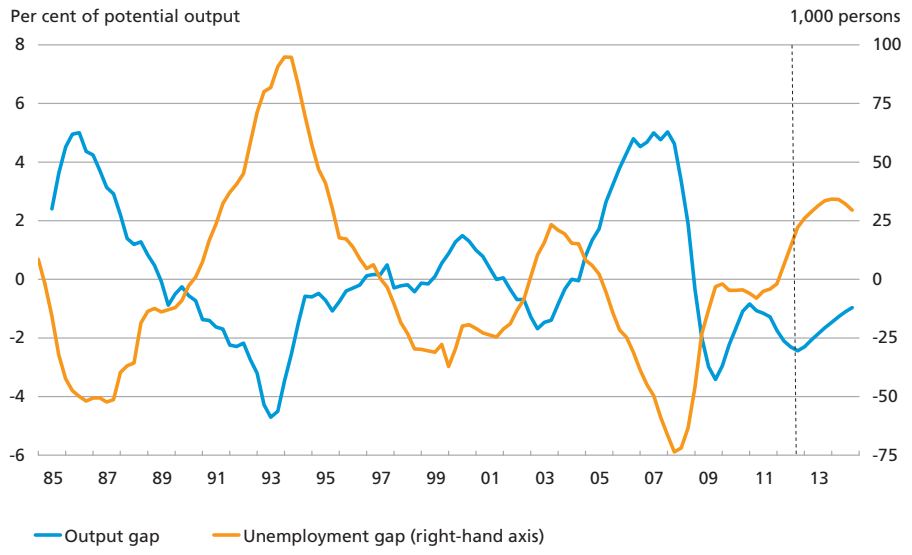
Unemployment rates for the various age groups have converged in recent months. Among those under 40, unemployment rates have fallen or been stable, while they have risen for those over 40. Nevertheless, unemployment is still lowest in the older age groups. For the 60-64-year-

olds, who have the option of early retirement, the unemployment rate was 4 per cent in October. Among the 25-29-year-olds, the unemployment rate was 10.1 per cent in October.

Capacity pressures in the economy are often assessed on the basis of the output gap, which indicates how much actual output deviates from potential output, i.e. the output level that the economy can sustain without inflationary pressures arising. The output gap is estimated at around -2.5 per cent of potential GDP in the 4th quarter of 2012. One reason for the negative gap is that productivity is estimated to be below its structural level. Moreover, unemployment rose in connection with the downturn, from a level well below its structural level, at which it contributed to creating inflationary pressures, to 20-25,000 above its structural level in the 4th quarter. The unemployment gap is limited, also when viewed in relation to previous fluctuations.

Measured in terms of net unemployment, the unemployment gap has widened over the last year, having been almost unchanged in the preceding couple of years, cf. Chart 18. The profile of the unemployment gap primarily reflects that activation of the unemployed rose strongly in the years just after the crisis, but fell back from a high level during 2012. Hence, the unemployment gap has widened because of higher net unemployment as a result of less activation, not because of higher gross unemployment.

OUTPUT AND UNEMPLOYMENT GAPS — Chart 18



Note: The output gap is shown as a 4-quarter moving average. The unemployment gap is given by net unemployment and hence does not include the activation gap.
Source: Statistics Denmark and own calculations.

Wages and prices

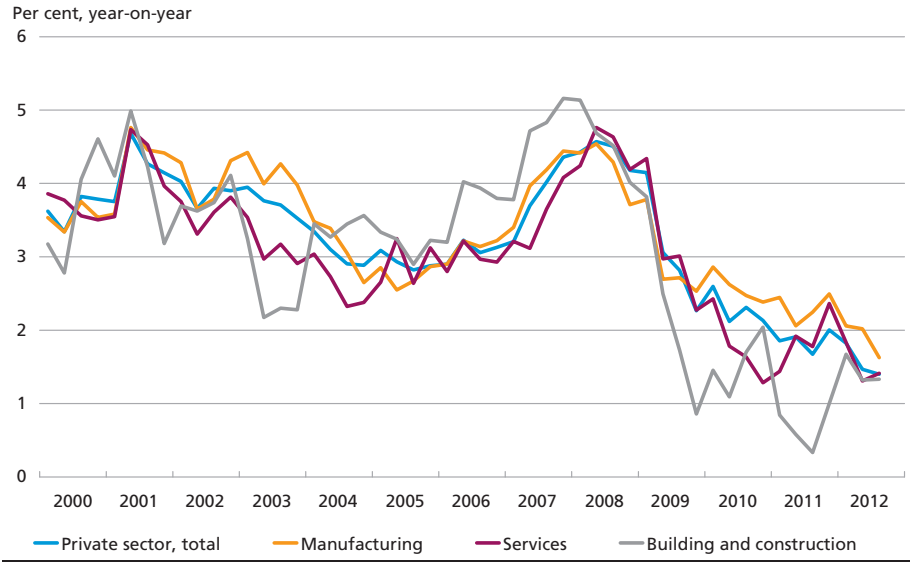
Annual wage inflation in the private sector has been declining since 2008 and was 1.4 per cent in the 3rd quarter of 2012. During 2012, wage increases have been particularly low for manufacturing and service employees, cf. Chart 19. Wage increases in building and construction were already subdued in 2011.

Public-sector wage inflation was somewhat higher in the 3rd quarter, with annual increases of 2.0 per cent in central government and 2.5 per cent in municipalities. This is to a large extent attributable to the regulatory mechanism in the current collective agreement. In addition, the wage statistics do not make adjustments for the staffing structure. Due to the fall in public-sector employment, the number of employees with little seniority, who earn less than the average, is likely to have declined. A new collective agreement for the public sector is to be negotiated before the current 2-year agreement expires on 1 April 2013.

In the forecast, wage inflation is expected to remain dampened due to the low labour-market pressures. The spring 2012 collective bargaining also points to low wage increases until the spring of 2014. Industrial wages are expected to rise by 1.8 per cent this year, and then by 2.0 per cent in 2013 and 2.3 per cent in 2014.

The annual increase in the Harmonised Index of Consumer Prices, HICP, was 2.3 per cent in October, cf. Table 4. The annual rate of increase has declined in recent months. This is mainly attributable to lower prices for

INCREASE IN HOURLY WAGES IN THE PRIVATE SECTOR — Chart 19



Source: Statistics Denmark.

CONSUMER PRICES Table 4

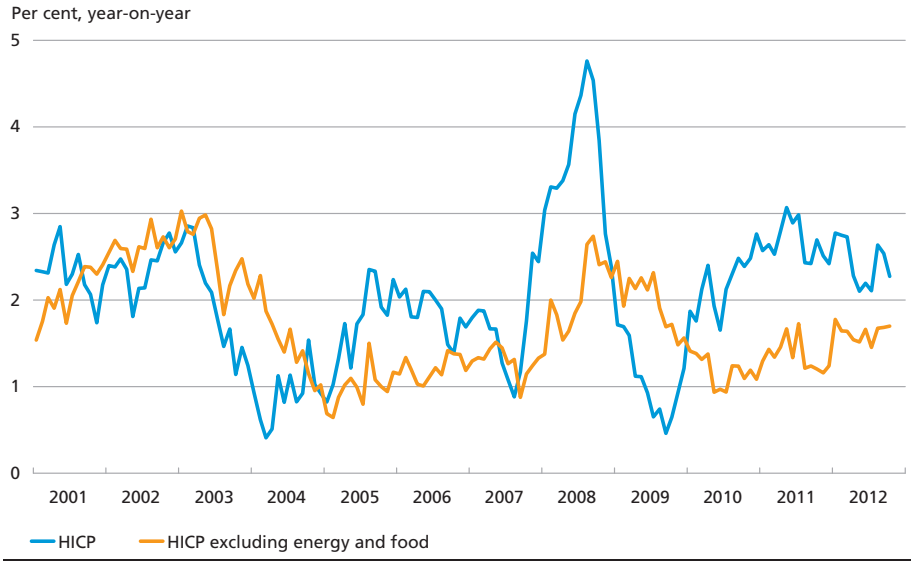
Per cent, year-on-year	Weight[1]	2011	2012	2013	2014	2012/13					
						Q3	Q4	Q1	Oct.	Nov.	Dec.
HICP		2.7	2.4	1.7	1.8	2.4	2.4	2.0	2.3	2.4	2.4
Index of net retail prices	100	2.6	1.9	1.7	1.7	1.8	1.9	1.8	1.9	1.9	1.9
Exogenous:											
Energy	8.5	12.6	3.5	2.6	-1.0	3.8	2.4	2.4	2.6	2.6	2.3
Food	13.6	3.8	2.5	2.1	2.0	2.3	2.7	2.6	2.9	2.8	2.4
Adm. prices	4.6	2.4	2.3	2.6	2.8	2.5	2.4	2.8	2.4	2.4	2.5
Rent	21.8	2.9	2.7	2.6	2.7	2.6	2.7	2.8	2.5	2.7	2.8
Excl. exogenous	51.6	0.5	1.1	1.0	1.6	1.1	1.2	0.8	1.2	1.2	1.3
Imports	14.7	3.9	0.9	1.9	1.8	0.6	1.3	1.5	1.1	1.3	1.6
IMI	36.9	-0.9	1.2	0.6	1.5	1.3	1.2	0.5	1.2	1.2	1.2

Note: The most recent actual figures are from October 2012.
[1] Weight in the index of net retail prices, per cent.

fuel and a slower rate of increase in food prices, partly because the fat tax, introduced in October 2011, is no longer influencing reflected in the annual rate of increase. In the most recent period, consumer prices have risen slightly less in Denmark than in the euro area. This was also the case in October, when euro area HICP rose by 2.5 per cent year-on-year.

Core inflation, which excludes food and energy prices, was 1.7 per cent in October as it had been in the preceding two months. For 2012 overall, core inflation has been stable at around this level, cf. Chart 20.

PRICE DEVELOPMENTS Chart 20



Note: HICP is the EU's Harmonised Index of Consumer Prices.
Source: Statistics Denmark.

In connection with the Finance Act 2013 it has been agreed to abolish the fat tax from New Year, and the planned expansion of the base for the sugar tax is also cancelled. However, these tax reductions are scarcely likely to be fully passed through to consumer prices in the short term. Together with the other changes to indirect taxes taking effect at the turn of the year, this means that the contribution from indirect taxes to HICP inflation will be more or less neutral. As a result, the spread between the annual increases in consumer prices and net prices will narrow from 0.5 percentage point in 2012 to around zero in 2013.

The price index for the domestic supply of goods (wholesale prices), which illustrates the development in prices in the first link of the sales chain and is calculated net of taxes, was 3.5 per cent higher in October than one year earlier. Hence the annual rate of increase was slightly higher than the average since 2000, to a large extent driven by energy prices.

All in all, underlying inflationary pressures in the Danish economy are weak. In view of the changes in indirect taxes, consumer price inflation is estimated to fall from 2.4 per cent this year to 1.7 per cent next year and 1.8 per cent in 2014.

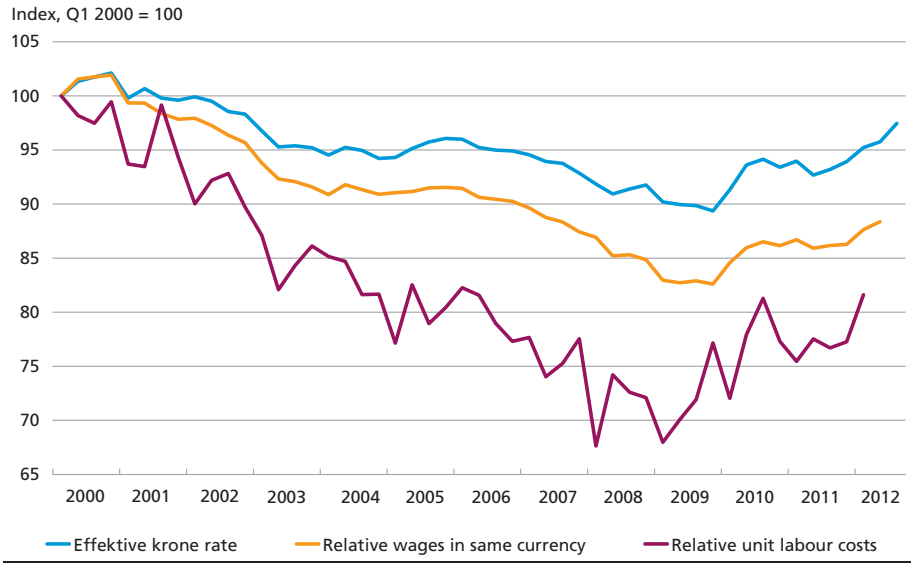
Labour market pressures and competitiveness

Since 2000, Danish unit labour costs have risen by nearly 20 per cent more than those of Denmark's foreign competitors, measured in terms of the trade weights in the effective exchange rate of the krone, cf. Chart 21. The reason for the relatively strong growth in Danish unit labour costs is that Danish wage increases have been high compared with those abroad, while productivity development has been weak in Denmark.

Since the turn of the millennium, the market shares of the Danish industrial sector have declined, indicating that the deterioration of competitiveness has had a negative impact on Denmark's exports. The declining market share is to some extent attributable to the increasing weights of the emerging economies, mainly in Asia, in the international division of labour. This means that aggregate world trade has increased. But Denmark's market share has fallen by more than those of comparable countries, cf. Chart 22. This should be viewed in the light of a significant rise in net investment income from abroad. Denmark was previously a debtor, but is now a creditor with considerable foreign assets. This increases income and domestic demand, which in turn squeezes exports.

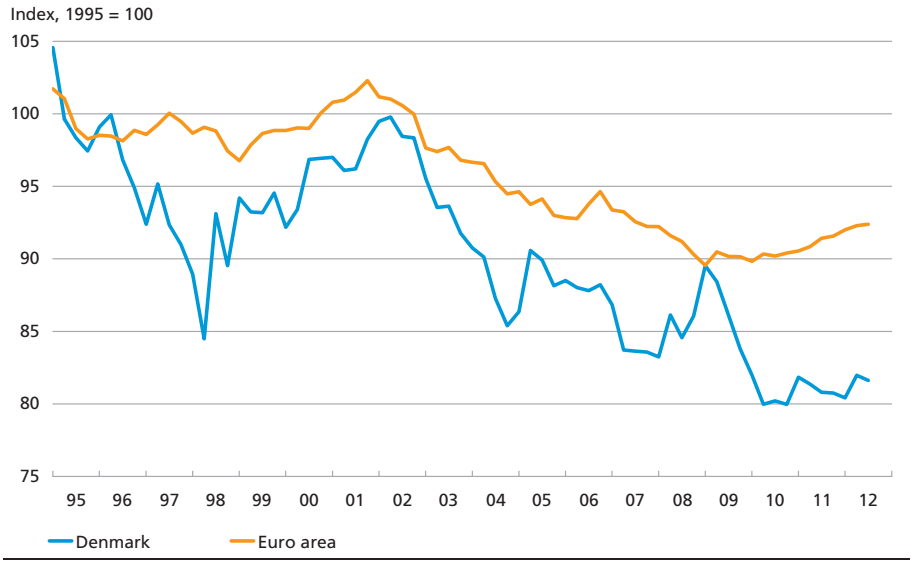
The excess wage increase was particularly pronounced during the overheating of the Danish economy in the period 2006-08, when unem-

WAGE COMPETITIVENESS IN INDUSTRY Chart 21



Note: Relative wages and relative payroll costs are those abroad compared with Denmark's, measured in the same currency, in industry. Unit labour costs are total payroll divided by gross value added at constant prices in industry. A fall in the index indicates that wage competitiveness has deteriorated.
Source: Statistics Denmark, OECD and Danmarks Nationalbank.

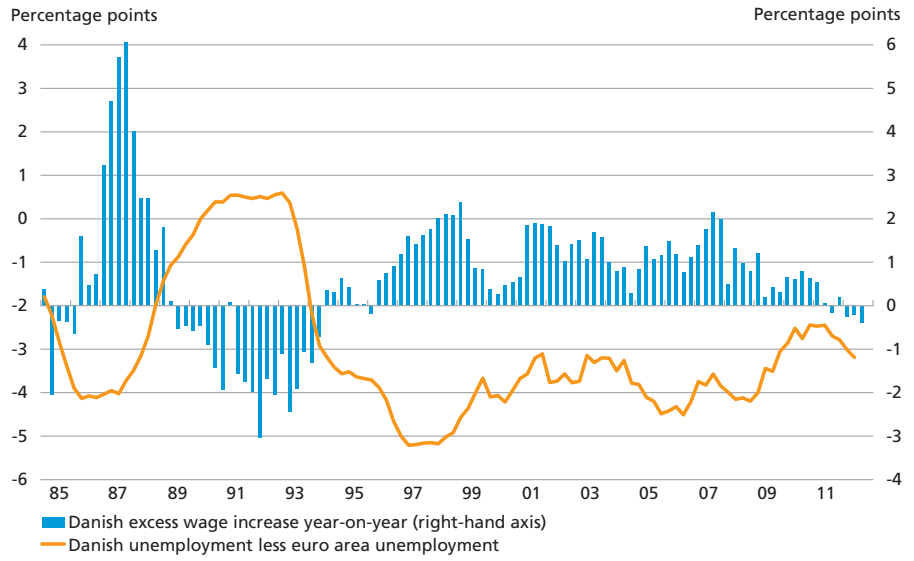
DEVELOPMENT IN MARKET SHARES IN VOLUMES Chart 22



Note: Market shares have been calculated as the economy's exports of goods and services relative to its export market for goods and services. The export market is a weighted average of the recipient countries' total imports. The weights applied are the exporting economy's market share in the country in question in 2005.
Source: OECD and own calculations.

UNEMPLOYMENT AND WAGE INFLATION IN DENMARK RELATIVE TO THE EURO AREA

Chart 23



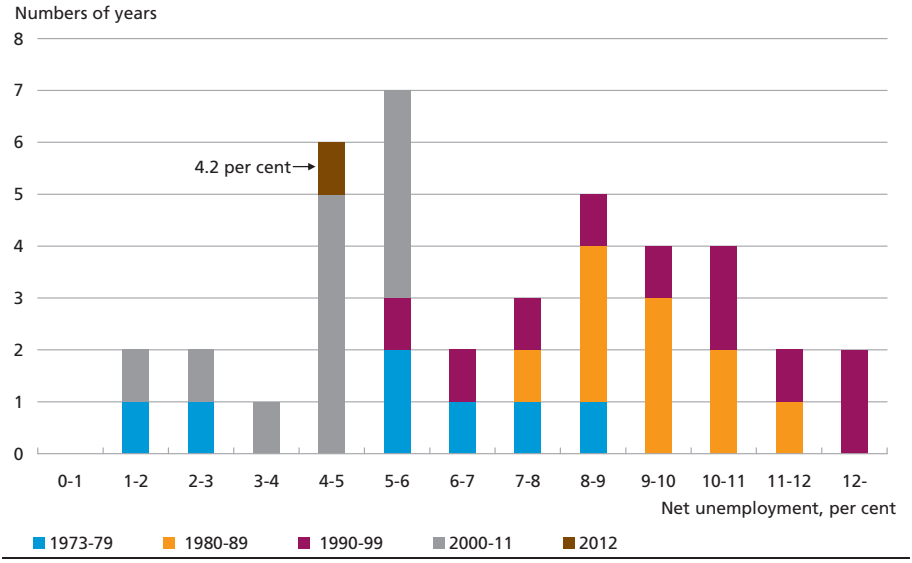
Note: Wage inflation in the euro area excluding Estonia and Slovakia has been calculated using the weights from the krone-rate index. Unemployment rates are based on the ILO definitions.

Source: OECD and own calculations.

ployment fell far below its sustainable level. Recent years have seen a cyclical improvement in that the economic downturn has eased pressures on the Danish labour market and increased unemployment in Denmark relative to that of the euro area. There is a clear link between excess wage increases in Denmark and the spread between unemployment rates in Denmark and Europe, cf. Chart 23. The rise in unemployment in Denmark relative to the euro area from 2009 to 2011 has dampened wage inflation, which is now lower in Denmark than in the euro area.

Although there is currently a small, but positive unemployment gap, Denmark has a well-functioning labour market with high turnover and relatively low unemployment, including modest long-term and youth unemployment. This applies both when viewed in a long-term perspective and in comparison with other countries. This is first and foremost the result of the labour market reforms in the 1990s, which have reduced structural unemployment notably. In that way, there has also been a clear shift towards lower actual unemployment, which can be seen by comparing net unemployment rates over the last 40 years, cf. Chart 24. Since the millennium, the high unemployment rates of the 1980s and 1990s have made way for unemployment rates never exceeding 6 per cent.

AVERAGE ANNUAL NET UNEMPLOYMENT RATE 1973-2012 Chart 24



Note: The Y axis shows the number of years with a given net unemployment rate. For 2012, Danmarks Nationalbank's forecast has been applied, and net unemployment has been estimated at 4.2 per cent.
Source: Statistics Denmark and own forecast.

Economic policy

The stagnation of the Danish economy is primarily attributable to low domestic demand in the aftermath of the housing bubble that burst and the financial crisis. This is reflected not only in a large Danish current-account surplus, but also in a substantial surplus on the balance of goods and services – a surplus that has grown since the reversal in 2008.

On account of the very large private-sector savings surplus there is a considerable potential for higher privately driven domestic demand. Especially business investment is low compared with the level of financial savings. When the reversal comes, it may be substantial, but it is not possible to predict when this will happen.

Unemployment has risen since the period of overheating, when it was unsustainably low. The low growth and domestic demand currently entail a certain, albeit limited, unemployment gap of 20-25,000 people. As a result, wage inflation has recently been a little below the level abroad, which has led to a small improvement of competitiveness. This is a turning point after 15 years of deteriorating competitiveness.

Part of the deterioration is linked to the stronger Danish economy. For example, the foreign debt has changed to substantial assets so that Denmark has positive net investment income of around 4 per cent of GDP, compared with corresponding negative income two decades ago. This turnaround has been intended and invariably means that the resultant

higher income is partly converted into higher consumption and investment, which has to some extent squeezed the labour market and hence also competitiveness.

Another reason for the preceding 15 years' deterioration of competitiveness is the overheating in 2005-08. But it should be emphasised that the current improvement of competitiveness will continue only for as long as unemployment remains above its structural level. For this reason it is unrealistic to expect strong or sudden improvements of competitiveness. The necessary instruments are not available.

An upswing driven by higher domestic private-sector demand could close the unemployment gap, and at the same time imply an increase in the labour force. Presumably there will be scope for employment to rise by 50-60,000 over a number of years. This would strengthen public finances, which are currently weakened by the economic conditions. Such an increase would reduce the current-account surplus, which on the other hand is so large that a surplus can still be expected even if the unemployment gap closes, not least on account of the high net investment income, cf. above.

In that situation, competitiveness will no longer improve. As already stated, this will not entail imbalances for the Danish economy overall, but sectors competing with abroad will be under more pressure than they have been used to. The dilemma could be that a strong industrial sector is important due to its technological advances and its role as a springboard for foreign direct investment providing a sizeable return.

Disregarding a few years of strong overheating, the current level of unemployment is in line with the lowest level registered over the last 40 years. The assessment is that this level has not led to higher structural unemployment or a permanent reduction of the labour force. The wish to close the unemployment gap fast can be understandable, but in the interests of both competitiveness and long-term public finances it is advisable to maintain the planned fiscal policy stance.

The ongoing efforts to ensure the recommended improvement of the structural budget balance and further improvement of labour market structures should therefore continue. Moreover, both prosperity and competitiveness will benefit greatly if productivity is strengthened.

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 3rd quarter of 2012. 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 in 2012 and slightly stronger growth in 2013. Euro area growth is expected to be negative in 2012. Growth among Denmark's most important trading partners, including Germany, is, however, expected to be positive in 2012. Against that background, the market for Danish exports is assumed to grow by a modest 1.9 per cent in 2012, after which the rate of growth will increase to 4.1 per cent in 2013, cf. Table 5.

On account of the weak growth outlook, the increase in foreign prices is expected to be slight this year and in 2013, rising very slowly to around 0.8 per cent in 2014. The same applies to price developments in the export market. Wage inflation abroad is estimated to rise only little throughout the projection period due to weak labour markets in most countries.

Interest rates, exchange rates and oil prices

Developments in short- 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. In early December 2012, the 3-month money-market interest rate, measured by the Cita swap rate, was -0.1 per cent; it is expected to remain virtually unchanged until 2014.

The average bond yield is defined as an average of the yields to maturity on outstanding government and mortgage bonds. The average bond yield was 1.5 per cent in early December, which is in line with the level at the time of preparation of the previous forecast. It is expected to rise during the projection period, to 2.3 per cent by 2014.

The effective exchange rate of the krone has strengthened a little since mid-August, having weakened during most of 2012. The reason is

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

that the euro, and hence also the Danish krone, has generally strengthened. In the projection, the dollar rate and the effective krone rate are assumed to remain constant at the level from early December.

At the time of forecasting, the oil price was 111 dollars per barrel. In the projection, the oil price is assumed to develop in line with futures prices, falling to approximately 103 dollars per barrel by 2014.

Fiscal assumptions

The fiscal assumptions in the forecast are based on the planned fiscal policy, including the Finance Acts for 2012 and 2013, local and regional government budgets for 2012-13, the economic agreements for 2013 and the government's convergence programme. In addition, a tax reform has been adopted and agreement reached to reform the social pension and flexible employment schemes; these have also been incorporated into the forecast. According to the government, the option to pay taxes on existing capital pensions in 2013 will provide extraordinary revenue of kr. 5 billion, which is also assumed in this forecast for computational reasons.

Real public consumption is assumed to rise by 0.1 per cent this year, cf. Table 5. In 2013 and 2014, consumption is expected to grow by 1.2 per cent and 0.8 per cent, respectively. Public investment is expected to rise by 4.0 per cent this year, but then to be reduced over the next few years as the temporary increase in the level of investment is phased out.

OVERVIEW OF FORECAST ASSUMPTIONS — Table 5

	2011	2012	2013	2014
International economy:				
Export market growth, per cent year-on-year	5.4	1.9	4.1	6.3
Export market price[1], per cent year-on-year	0.4	0.6	0.6	0.8
Foreign price[2], per cent year-on-year	0.5	0.7	0.7	0.8
Foreign hourly wages, per cent year-on-year	2.4	2.5	2.3	2.6
Financial conditions, etc.:				
3-month money-market interest rate, per cent p.a.	0.9	0.1	-0.2	-0.1
Average bond yield, per cent p.a.	2.7	1.7	1.8	2.3
Effective krone rate, 1980 = 100	103.6	100.6	100.2	100.2
Dollar exchange rate, DKK per USD	5.4	5.8	5.7	5.7
Oil price, Brent, USD per barrel	110.8	112.1	107.7	102.9
Fiscal policy:				
Public consumption, per cent year-on-year	-1.5	0.1	1.2	0.8
Public investment, per cent year-on-year	4.2	4.0	-6.9	-1.0
Public-sector employment, 1,000 persons	837	829	833	835

[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

The estimated growth in GDP has been adjusted substantially downwards for both this year and next year compared with the September forecast, but has been revised marginally upwards for 2014, cf. Table 6, which shows a breakdown of the revisions to GDP and consumer prices by key background factors.

Factors behind the lower growth estimate for 2012 (0.7 percentage point) include a marked downward adjustment of GDP for the 1st half of 2012 in the most recent statement of the national accounts. This adjustment is attributable not least to considerable depletion of inventories in the 2nd quarter. Public demand in 2012 so far has also been notably weaker than budgeted for, which has led to a downward adjustment of the forecast for this year. Furthermore, GDP for 2010 and 2011 have been revised upwards since September. These elements are included in the "other factors" item. Finally, lower export market growth due to the weaker international economy makes a small negative contribution to growth.

Now the European economies are not expected to begin to pick up until 2014, which will entail lower export market growth also in 2013, but higher growth in 2014, than in the September forecast. The stronger effective krone rate also contributes to lower GDP growth in 2013.

Consumer price inflation remains unchanged this year and in 2014. In 2013, on the other hand, inflation has been adjusted downwards by 0.3 percentage point, primarily on account of the decision to abolish the fat tax and cancel the planned increase in sugar taxes.

REVISIONS IN RELATION TO THE PREVIOUS FORECAST — Table 6

	GDP			Consumer prices, HICP		
Per cent, year-on-year	2012	2013	2014	2012	2013	2014
Forecast, September 2012	0.3	1.6	1.7	2.4	2.0	1.8
Contribution to revised estimate from:						
Export market growth	-0.1	-0.2	0.2	0.0	0.0	0.0
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	0.0	0.0	0.0	0.0	0.0
Other factors	-0.6	0.0	-0.1	0.0	-0.2	0.1
This forecast	-0.4	1.3	1.8	2.4	1.7	1.8

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

Danish Families' Financial Robustness, Variable Rates and Deferred Amortisation

Asger Lau Andersen and Anders Møller Christensen, Economics, Charlotte Duus and Ri Kaarup, Financial Markets

INTRODUCTION AND SUMMARY

The far higher gross debt-to-income ratio of Danish families compared with families in other countries has attracted marked attention among international organisations, credit rating agencies and a number of observers. As a counterpart of the substantial debt, Danish families also hold considerable assets. Especially the large individualised pension wealth distinguishes Danish households from households in other countries. Concerns have been expressed about families' ability to service their debt in the event of rising interest rates or higher unemployment, the considerations being that pension assets are illiquid in the short term and the families with large debt are not necessarily the ones that hold substantial assets.

In continuation of a previous article on the wealth and debt of Danish families, cf. Andersen et al. (2012), the possible threat to financial stability in Denmark from the distribution of wealth and debt is examined at family level. The families' overall balance sheet is good and has contributed to Denmark's current-account surpluses for many years.

The main conclusion is that the threat to financial stability from Danish families' debt and debt structure is limited. The assessment is based on the share of the debt held by families with particularly tight personal finances, among other factors. Indeed, credit institutions have suffered only moderate losses on private customers in recent years.

Most families have robust finances and, if they reduce consumption or savings, are resilient to negative events such as a strong increase in interest rates or a protracted period of unemployment, although this may entail considerable lifestyle changes. This assessment does not take into positive account that a sustained rise in interest rates is very likely to go hand in hand with an economic recovery and hence better opportunities for families to increase their income by seeking further employment.

Moreover, most families by far have a buffer of liquid assets, which can, in most cases, cover the additional costs of interest-rate increases for more than one year.

A detailed analysis is performed to establish the number of families that will encounter financial difficulties in the event of interest-rate increases, unemployment or expiry of the deferred-amortisation period, and whether this will entail losses on lending by credit institutions. The basis of the sensitivity analysis is how the individual family's income after tax, interest and redemptions and fixed expenses, i.e. the disposable amount, changes if interest rates increase by 5 percentage points, or in the event of higher debt redemptions or a temporary loss of income due to a period of 3 or 6 months' unemployment for the family's principal earner, given the rules on unemployment benefits and tax. It is calculated whether the disposable amount is large enough to sustain consumption corresponding to an average budget or a tight budget, respectively, and the changes in the disposable amount are broken down. Disregarding the calculated consequences of a period of unemployment, the family's income is regarded as fixed in the analysis.

The families whose disposable amounts become insufficient represent a risk of default for the credit institutions. Whether the end result is default and possibly enforced sale depends on the family's scope e.g. for cutting down their consumption further or divesting assets. In the event of enforced sale, the credit institutions' losses depend on the sales price of the assets that may have been pledged as collateral for the loans, cf. the analysis in Danmarks Nationalbank (2012).

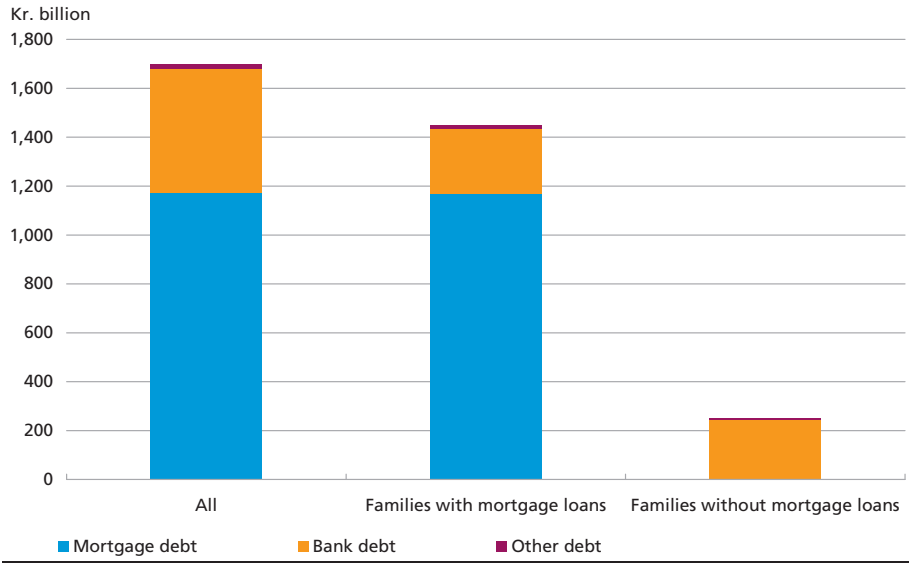
In the analysis, the special focus is on the types of mortgages raised by Danish families from the mortgage banks. No such previous analysis exists at a detailed level. Families who have raised mortgage loans with deferred amortisation tend to have had higher debt than other families before raising the mortgage loan. Moreover, they tend to raise larger loans and generally, they do not compensate for this by otherwise saving up.

Specifically, we look at the degree to which families with deferred amortisation use it to reduce other, and often more expensive, debt. This happens, but is not common. These families clearly tend to have lower savings than families with amortisation.

Since mortgage banks have often granted loans with deferred amortisation up to the limit of 80 per cent of the assessed market value of a home, the falling house prices entail that for around half of these loans, the debt now exceeds 80 per cent of the market value.

Loans with deferred amortisation pose a serious problem in that they function smoothly only in periods of rising house prices. This is probably re-

TOTAL FAMILY DEBT, 2010 Chart 1



Note: Other debt includes all calculated debt other than debt to mortgage banks and banks.
Source: Mortgage banks, Statistics Denmark and own calculations.

flected in some mortgage banks bringing an end to granting loans with deferred amortisation at up to 80 per cent of the value of the home.

The article is based on new, detailed data. Danish mortgage banks have made data on all lending to private individuals available to Danmarks Nationalbank and the Ministry of Business and Growth, among others. In anonymised form and at individual level, this information has been pooled with e.g. income, tax and wealth data from Statistics Denmark and then aggregated, using the family as the economic unit. The analysis comprises all families with full tax liability in Denmark and income after tax of more than kr. 25,000 in 2010. Families whose main income results from self-employment are not included.[1]

See the article in Part 2 for further information on data and definitions.

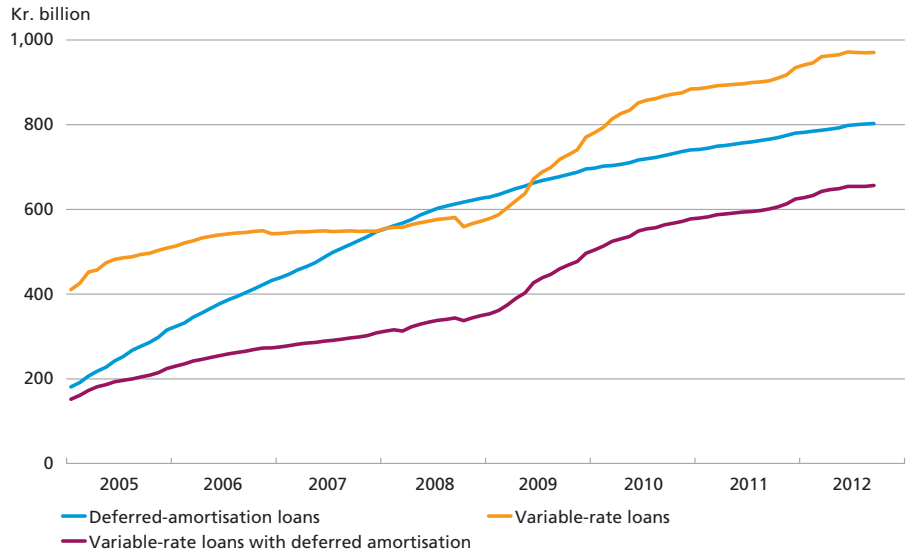
DEBT STRUCTURE

Just over two thirds of the families' total debt is mortgage debt, just under one third is bank debt, while debt to other creditors represents only just over 1 per cent. Out of the 2.6 million families included in the survey, around 38 per cent had mortgage debt in 2010. These families account for 85 per cent of the families' total debt, cf. Chart 1.

[1] A self-employed person is the sole proprietor of a firm, the profit of which is higher than the sum of that person's wages, old-age pension or social pension benefits.

MORTGAGE LOANS FOR OWNER-OCCUPIED HOMES AND SUMMER COTTAGES

Chart 2



Note: "Deferred-amortisation loans" cover both fixed-rate and variable-rate loans with deferred amortisation. "Variable-rate loans" cover variable-rate loans with and with amortisation.
Source: Danmarks Nationalbank.

By tradition, mortgage loans in Denmark have been fixed-rate loans with amortisation, most often annuity loans. But product development and liberalisation over the last 10-15 years have enabled borrowers to raise variable-rate loans and loans with deferred amortisation.

The new loan types have gained considerable ground in recent years, cf. Chart 2.

At end-2010, most families had only one type of mortgage loan, cf. Table 1.

NUMBER OF FAMILIES WITH MORTGAGE DEBT BROKEN DOWN BY LOAN TYPE, 2010

Table 1

Number of families	All mortgage debt is this loan type	Part of the mortgage debt is this loan type	No mortgage debt of this loan type
Variable-rate loans with amortisation	173,744	82,705	717,010
Variable-rate loans with deferred amortisation	269,242	78,519	625,698
Fixed-rate loans with amortisation	301,990	82,799	588,670
Fixed-rate loans with deferred amortisation	93,493	36,067	843,899

Source: Mortgage banks, Statistics Denmark and own calculations.

FAMILIES WITH MORTGAGE LOANS WITH DEFERRED AMORTISATION

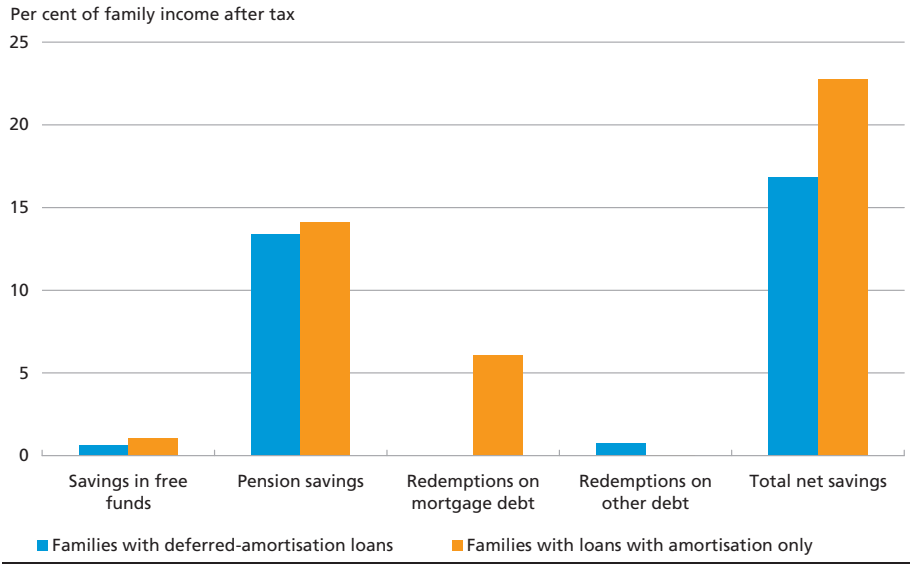
The age structure among families with deferred-amortisation mortgage loans differs from that of other families with mortgage debt. For families whose oldest member is less than 40 years old and families with members over 65 years, deferred-amortisation loans account for a larger share of total debt than for other families.

On average, the gross debt is higher for families with deferred-amortisation debt than for other families. The share of families with a gross debt ratio of more than 500 per cent is thus markedly larger for families with deferred-amortisation loans than for other families irrespective of age.

If family assets are also considered in the calculation, including the housing value but excluding pension savings, net debt is more frequently found among families with deferred-amortisation loans than among families with amortisation. Adjusting for differences in age, income and year of raising the loan, the detailed analysis in Part 2 shows that net debt is around kr. 300,000 higher on average for families with deferred amortisation than for other families.

It also turns out that in 2010, typical families with deferred-amortisation mortgage loans had lower savings than typical families with amortisation. Only relatively few families use the absence of redemptions on mortgage debt to repay other, often more expensive, debt, cf. Chart 3.

MEDIAN VALUES FOR SAVINGS AND REDEMPTION RATIOS, 2010 Chart 3



Note: The Chart shows the median value in 2010 for each stated savings and redemption ratio among homeowner families who raised mortgage loans in the period 2003-09, whose oldest family member was under 60 years old in 2010, and who were not involved in real property transactions or raised mortgage loans during 2010.
Source: Mortgage banks, Statistics Denmark and own calculations.

These results do not necessarily indicate a causal link from the option of raising deferred-amortisation loans to the savings ratio, but the access to deferred-amortisation mortgage loans has no doubt facilitated reduction of savings.

FAMILIES WITH VARIABLE-RATE MORTGAGE LOANS

At any given time, the interest rate on variable-rate mortgage loans is normally lower than the interest rate on fixed-rate loans with the same maturity. This has been a main reason why variable-rate loans have gained considerable ground over a short period. The drawback of lower interest rates is the risk of interest-rate increases.

Families with variable-rate mortgage loans do not differ significantly from families with fixed-rate loans as regards region of residence and the probability of a family member receiving public benefits. Variable-rate loans are more popular than fixed-rate loans in families whose oldest member is under 50 years old. This is a key factor explaining why families with variable-rate loans have higher incomes than families with fixed-rate loans only, but this income difference also applies in the individual age groups.

Families with high debt before they raise their first mortgage loans and families who raise higher-than-average loans tend to opt for variable-rate debt more frequently than other families. Families with variable-rate mortgage loans also tend to have higher net debt.

FINANCIAL MARGIN

With a view to assessment of a family's financial robustness, a standardised budget method – the financial margin – is applied as a measure of whether the current income is sufficient to meet current consumption. The financial margin is defined as the amount at the family's disposal after paying housing occupancy expenses, other fixed expenses and general costs of living in line with standard budgets for different family types. If the disposable income does not exceed the sum of these expense items, the financial margin is negative, and the family's current income should be regarded as insufficient.

The applied data contains detailed information on the individual family's income, holdings of liquid assets and expenses for interest and redemptions on debt. However, there is no information on the individual family's consumption. That is why standardised budgets are used as measures of the families' consumption, taking into account owner occupancy or not, as well as the number of adults and children in the family.

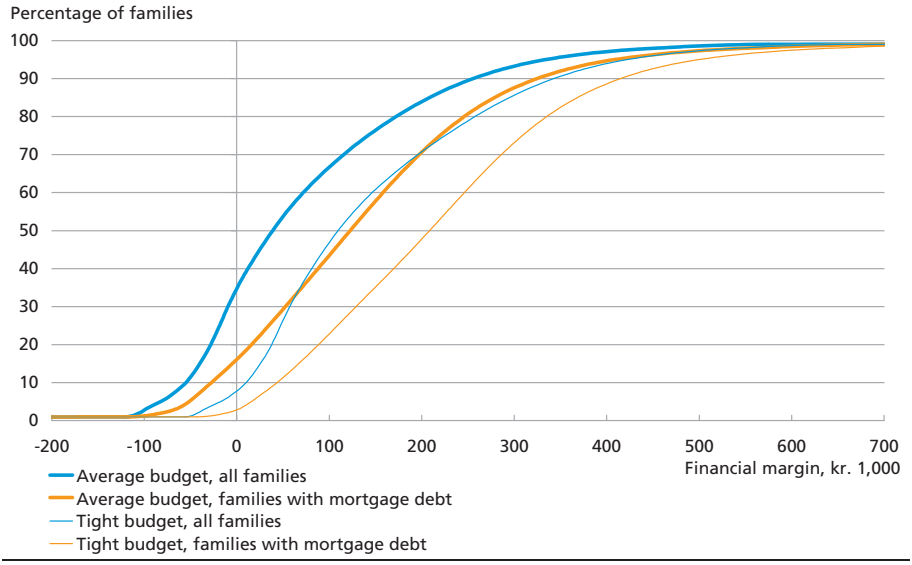
Two budgets are applied: an average budget reflecting the consumption pattern of the average families and a tight budget reflecting the consumption of families in the lowest income group. It should be noted that the tight budget cannot be regarded as a poverty limit, but that it reflects the actual consumption of a segment of the population.

It is also important to point out that even families with very positive financial margins may mismanage their finances to such a degree that they default on their debt. Out of the 5,800 families in arrears on their mortgage loans at end-2010, only 3,000 had negative margins irrespective of the budget measure applied.

Chart 4 shows the breakdown of the financial margin by all families and families with mortgage debt. The Chart shows the share of families with a financial margin of zero or less – i.e. the share of families with insufficient current income to cover an average budget and tight budget, respectively. It is clear that the share with insufficient current income relative to the budgets is considerably smaller for families with mortgage debt than for all families.

Applying the average budget, the financial margin is negative for almost 35 per cent of all families. This figure is 16 per cent for families with mortgage debt. Looking at the families' ability to pay their fixed expenses, including interest and redemptions on debt, and to maintain reduced consumption with the current income provides a substantially different picture. The share of all families with a negative financial mar-

BREAKDOWN OF FINANCIAL MARGIN, 2010 Chart 4



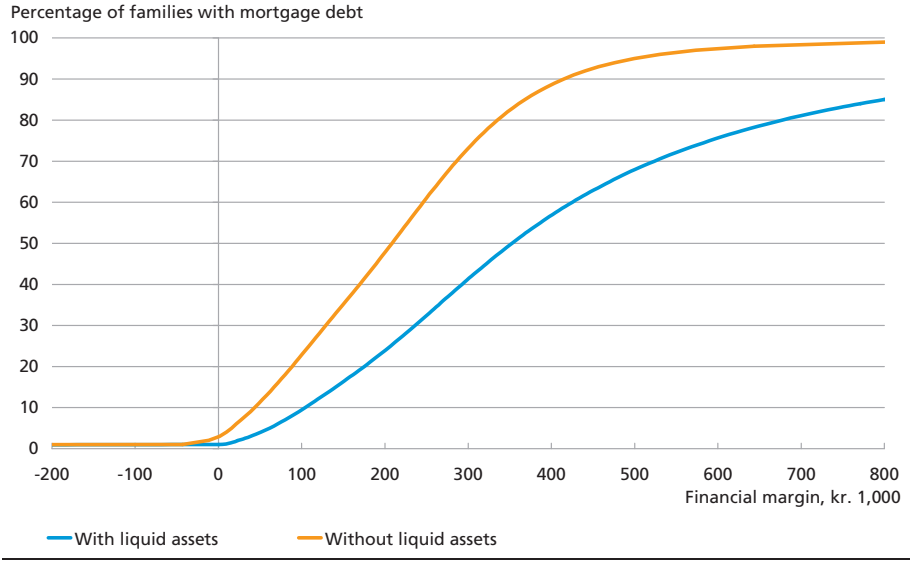
Note: "All families" cover families both with and without mortgage debt.
Source: Mortgage banks, Statistics Denmark and own calculations.

gin thus drops to 8 per cent. This percentage holds far less than 8 per cent of the debt, be it mortgage debt, bank debt or other debt. As regards families with mortgage debt, the share with a negative financial margin falls to 3 per cent if the tight budget is applied in the calculations.

Under the tight budget, around three quarters of the families have a financial margin of more than kr. 50,000. For some families, however, the fixed expenses will be set too low under the tight budget, so they will actually have less money to spend. In some cases, families with a negative financial margin will have a buffer of assets, particularly in the oldest age groups. In other cases, especially in the youngest age groups, they will have the opportunity to raise debt or perhaps receive support from broader family relations.

As mentioned previously, a family may choose to sell assets if its current income is insufficient to meet current expenses. Of course, this option exists only if the family has liquid assets and only until they run out. Given a time horizon of one year, some families with mortgage debt are able to bridge the gap between income and expenses by selling assets in the form of bank deposits, stocks, bonds and mortgage deeds in custody accounts. Among families with mortgage debt, the share with a negative financial margin is thus brought down to 1 per cent one year ahead when the tight budget is applied to the calculations, cf. Chart 5.

BREAKDOWN OF FINANCIAL MARGIN ADJUSTED FOR LIQUID ASSETS, FAMILIES WITH MORTGAGE DEBT, TIGHT BUDGET, 2010 Chart 5



Note: Liquid assets include bank deposits, market value of stocks and bonds and mortgage deeds in custody accounts.
Source: Mortgage banks, Statistics Denmark and own calculations.

Basically, most families with mortgage debt are able to meet their expenses, and families with tight finances account for a limited share of the total debt. In addition, the LTV ratios for properties pledged as collateral for this limited part of the debt are low. The risk to financial stability from families with a negative or slightly positive financial margin under the tight budget is assessed to be limited. Credit institutions suffered only marginal losses on private customers even during the financial crisis. Thus, loan impairment charges and arrears have been modest. The arrears ratio for mortgage loans for owner-occupied homes was only 0.32 per cent at end-June 2012.[1] Naturally, this is also a consequence of the low interest burden due to the drop in interest rates in the wake of the financial crisis, and of the relatively moderate increase in unemployment.

EFFECT OF AN INTEREST-RATE SHOCK

An analysis of the consequences to families' finances of an interest-rate increase is performed in order to assess their financial robustness. Table 2 shows the decline in families' financial margin after an interest-rate shock of 5 percentage points lasting one year. After the interest-rate shock, almost 240,000 families with mortgage debt will have over kr. 3,000 less at their disposal per month, taking into account that higher interest expenses imply lower tax. For 110,000 families, the monthly disposable amount will shrink by over kr. 5,000.

In an interview-based survey from the Association of Danish Mortgage Banks (2012), borrowers with F1 loans assessed that, on average, they could manage an increase in repayments of kr. 3,100 per month before a notable decline in their standard of living would set in, and that the pain threshold was kr. 4,200.

The results in the Table are not directly comparable with the survey conducted by the Association of Danish Mortgage Banks. Firstly, the calculation is made on an after-tax basis, secondly interest expenses on other debt are also assumed to rise, and thirdly all families are considered. Last, but not least, the analysis is based on interest rates in 2010, while the survey was conducted in April 2012. With these reservations in mind, quite a few respondents stated, asked directly, that they would experience increases in repayments of a size they would find difficult to manage.

[1] The arrears ratio is calculated quarterly by the Danish Mortgage Banks' Federation and the Association of Danish Mortgage Banks and published on the websites of the two institutions. It shows the share of total repayments in arrears 3½ months after the due date.

DECREASE IN FINANCIAL MARGIN PER MONTH ON AN INTEREST-RATE INCREASE OF 5 PERCENTAGE POINTS, 2010 Table 2

Number of families	Families *with* mortgage debt	Families *without* mortgage debt
No change	141,154	535,193
Kr. 1-500	156,668	704,925
Kr. 501-1,000	131,208	155,221
Kr. 1,001-2,000	190,290	121,673
Kr. 2,001-3,000	116,733	43,867
Kr. 3,001-5,000	127,213	24,164
Over kr. 5,000	110,193	12,016

Source: Mortgage banks, Statistics Denmark and own calculations.

Among families with variable-rate mortgage loans there is substantial variation in the effect of an interest-rate shock between families with and without deferred amortisation, respectively. The combination of deferred amortisation and variable-rate loans means that an interest-rate increase will be fully passed through to repayments on the loan. If redemptions are paid on a variable-rate annuity loan, the redemptions will fall if interest rates rise.

After an interest-rate shock, families with tight finances account for a larger share of the debt burden than previously. The share of total mortgage debt held by families with negative financial margins thus grows from 3.0 to 6.4 per cent when the tight budget is applied to the calculations. The share of bank debt among families with a negative financial margin rises from 5.7 to 12.4 per cent.

But not many of these families have high LTV ratios. The number of families with a negative financial margin and a home with an LTV ratio of more than 100 per cent rises from around 2,250 initially to approximately 4,750 after an interest-rate increase of 5 percentage points. These families account for 1 per cent of total mortgage debt and just over 1 per cent of total bank debt. Whether this debt leads to losses for the credit institutions initially depends on the families' ability to e.g. cut consumption further, sell assets or increase their income, and then on how much the loans exceed the sales price of the asset pledged as collateral with the credit institutions. Mortgage loans will always be based on real property as collateral.

INCOME SHOCKS

As described above, families' exposure depends e.g. on their ability to service their debt commitments from their current disposable income. The stress scenarios for interest rates imply shocks to current debt repay-

ments. However, it is just as relevant to apply stress scenarios to the other side of the equation, i.e. disposable income, by looking at the individual families' robustness to unemployment.

For approximately every second person who became unemployed in 2010, the period of unemployment lasted less than 3 months. For more than 1 in 4 persons who became unemployed, the period of unemployment lasted 3-6 months. It is therefore relevant to examine the families' ability to withstand a decrease in income as a result of a period of unemployment of 3 or 6 months, respectively, taking the rules on unemployment benefits and tax into account. Part 2 contains a detailed explanation of the analysis.

Virtually all of the families with mortgage debt who have a positive financial margin in the baseline scenario have enough budgetary scope to withstand a decline in the principal earner's income for up to 6 months. Moreover, many families have enough liquid assets to cushion the shock. Families with mortgage loans are thus well positioned to weather temporary periods of unemployment, applying a partial perspective, i.e. the individual family is affected by unemployment without an increase in total unemployment in the economy.

EXPIRY OF DEFERRED AMORTISATION

For the largest share by far of deferred-amortisation loans, the duration of the deferred-amortisation period is 10 years.[1] Since the first deferred-amortisation loans were issued in 2003, deferred-amortisation periods will begin to expire in 2013, cf. Chart 6.

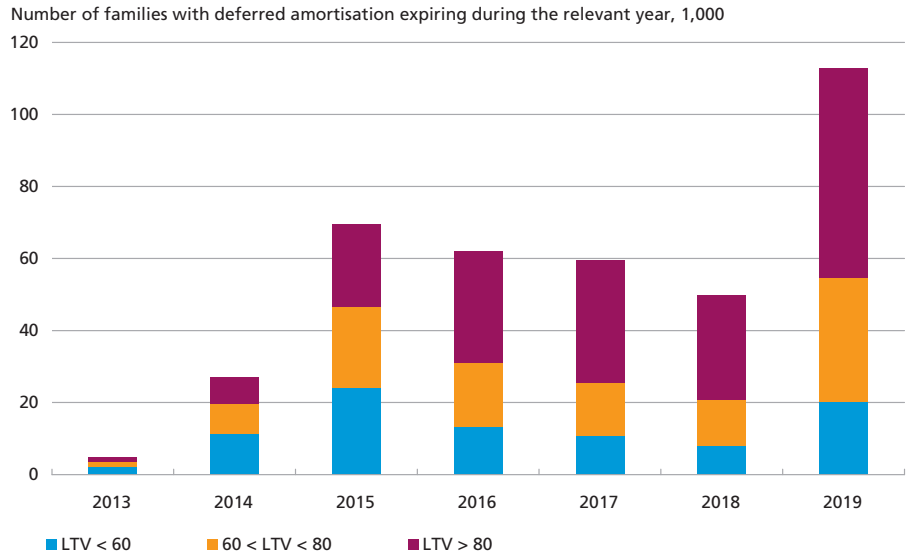
When the deferred-amortisation period expires, the principal must be repaid over the remaining maturity, unless the loan is refinanced. For 30-year loans with deferred amortisation for the first 10 years, the principal must thus be repaid over 20 years.

Most families with deferred-amortisation loans have enough budgetary scope to accommodate this, if the tight budget is applied to the calculations.

However, many families must be expected to wish to prolong the deferred-amortisation period by raising a new deferred-amortisation loan at up to the limit of 80 per cent of the current property valuation, redeeming the existing loan. Due to the combination of non-repayment of the debt, which is often raised at up to 80 per cent of the property valuation, and falling house prices, the remaining debt of many of the

[1] In 2007 it became possible to grant loans with longer deferred-amortisation periods, provided that the LTV ratio is lower than 75.

EXPIRY OF DEFERRED AMORTISATION AND LTV RATIO Chart 6



Note: The Chart shows the number of families with at least one deferred-amortisation loan where the deferred-amortisation period expires at the latest during the year stated. The year of expiry is calculated on the basis of the starting date of the most recent deferred-amortisation period, assuming that the total deferred-amortisation period is 10 years. A family may be included in several different years if it has more than one deferred-amortisation loan. The LTV ratio is the remaining debt as a ratio of the property value of the property serving as collateral for the loan. The property value is the mortgage bank's valuation at end-2011. If a family has more deferred-amortisation loans expiring in the same year, but which are based on different properties as collateral, the loan with the highest LTV ratio is shown in the Chart.

Source: Mortgage banks, Statistics Denmark and own calculations.

deferred-amortisation loans now exceeds 80 per cent of the market value, cf. Chart 6. Unless house prices rise before the expiry of the deferred-amortisation period, quite a few families will have to find alternative funding of the share of the loan exceeding the 80-per-cent limit. For the median family with deferred-amortisation loans and an LTV ratio of more than 80 per cent, this funding requirement is around kr. 144,000.

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Corporate Saving and Investment

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1. INTRODUCTION AND SUMMARY

In the wake of the financial crisis, the savings of Danish non-financial corporations (firms) have risen significantly. Firms have increased their savings surplus, known as net lending, e.g. by substantially reducing investment spending and by increasing gross savings. In a detailed analysis in Part 2 of this Monetary Review, we take a closer look at the drivers of the trend in corporate net lending, compared with developments in other countries. To that end, we will examine factors that impact investment across countries and analyse a large data set of firm-level data for Denmark. This article describes the main findings of these analyses.

Net lending is currently higher than at any time during the statistics period, i.e. the last 30 years. The reversal in net lending from the end of the boom until now has been very dramatic and is almost equivalent to the reversal from the late 1980s to the early 1990s. There is some semblance of this trend in other countries, but few countries have higher corporate net lending than Denmark. Net lending usually varies with the business cycle, but by looking at data for a number of countries, we find indications that the change in Danish corporate net lending in the wake of the financial crisis has been more substantial than would normally be warranted by the business cycle. But given that neither the debt level nor the increase during the preceding boom was exceptionally high, the improved net lending position does not seem to be motivated by a greater need to reduce debt than in other countries. However, other factors that are difficult to quantify may have an impact. For instance, the Danish financial sector has been hit hard during the crisis. Consequently, Danish firms have had the incentive to become more independent of bank funding in future by consolidating.

The analysis of data at firm level shows that corporate accumulation of gross debt has declined after the end of the boom, but aggregated debt has not declined. Despite continued balance-sheet consolidation, corporate leverage has decreased for medium-sized firms and especially for large firms due to a rising ratio of equity to total liabilities.

The increase in gross savings since 2007 is attributable to falling interest expenses, tax and dividend payments. Over a number of years, the level of corporate gross savings has been high in Denmark relative to several other OECD countries. The high level of gross savings is attributable especially to higher property income and fewer dividend payments in Denmark than in other countries. But since many factors are at play, including tax issues and corporate structures, the low dividend level is difficult to explain empirically based on a few economic factors. Large firms are among the lowest dividend payers as a percentage of profits, and the real estate, financing and insurance industries, in particular, have low dividend payout ratios.

As mentioned earlier, the reversal of corporate net lending is attributable also to a large drop in investment spending. Based on a cross-country econometric analysis, we find that the current investment ratio is largely in line with the long-term level for the average of the countries, while the Danish level is somewhat below the long-term level. Presumably this means that investment will pick up over the longer term and thus contribute to growth. A calculation of net investment, i.e. gross investment less depreciation, at firm level shows that medium-sized firms, in particular, have reduced their net investment, while an industry breakdown indicates that this especially applies to real-estate firms and trading and transport firms.

Like in other Northern European countries, in particular, Danish foreign direct investment, FDI, has increased over time, which should be seen in light of the fact that firms have become more international. In an international perspective, Danish FDI holdings are relatively high. This could help to explain Danish firms' relatively high property income from FDI. A frequent point of discussion in the economic debate has been that FDI reduces domestic investment spending, but neither the economic literature nor recent developments provide a clear explanation of this effect. Nor is there any relationship between domestic investment and FDI in the accounting data applied for Danish firms.

2. CORPORATE NET LENDING

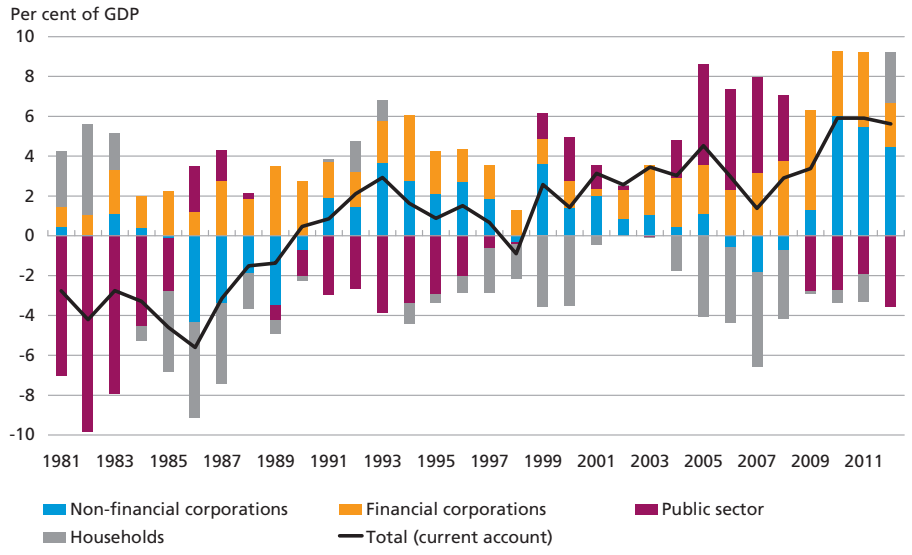
Developments in the net lending of individual sectors are linked to the savings balances of other sectors. For instance, a savings deficit in the public sector tends to be offset by increased household savings in an attempt to counteract future tax increases or cost cutting. Cyclical factors affect the sectoral savings balances in different ways. During an economic upswing, the propensity of firms and consumers to invest and consume rises, causing their savings balances to decline. Conversely, pub-

lic finances typically improve during an upswing and deteriorate during a downturn, driven by automatic stabilisers (income taxes, unemployment benefits, etc.). Savings balances are thus impacted by corporate and household behaviour, as well as economic policy and are key drivers of cyclical fluctuations. Developments in the savings balances of individual sectors should therefore been seen in the context of the economy as a whole and be assessed over an extended period of time.

During the recent economic crisis, the private sector has significantly strengthened net lending, cf. Chart 1. This is reflected in a large current account surplus of just over 6 per cent of the gross domestic product, GDP, in 2011, although the public sector moved from a large budget surplus to a deficit during the period 2007-11. The increase in household savings has been a key contributor to the recent slow economic growth.

On previous occasions, significant reversals have also been seen in the savings balances of individual sectors. In the mid-1980s, the private sector had accumulated substantial savings deficits, which led to large current account deficits during that period. A significant reversal was seen in corporate and household net lending in step with the downturn in the late 1980s, while the public sector once again accumulated significant deficits that were only settled during the 1990s. For many years, financial corporations have recorded positive net lending, but after the financial crisis in 2008, net lending has increased substantially. House-

CURRENT ACCOUNT AND SECTORAL NET LENDING 1981-2012 Chart 1



Note: Total net lending is not necessarily fully consistent with the current account, e.g. due to unilateral capital transfers. Figures for 2012 are based on the quarterly national accounts for the first two quarters.
Source: Statistics Denmark.

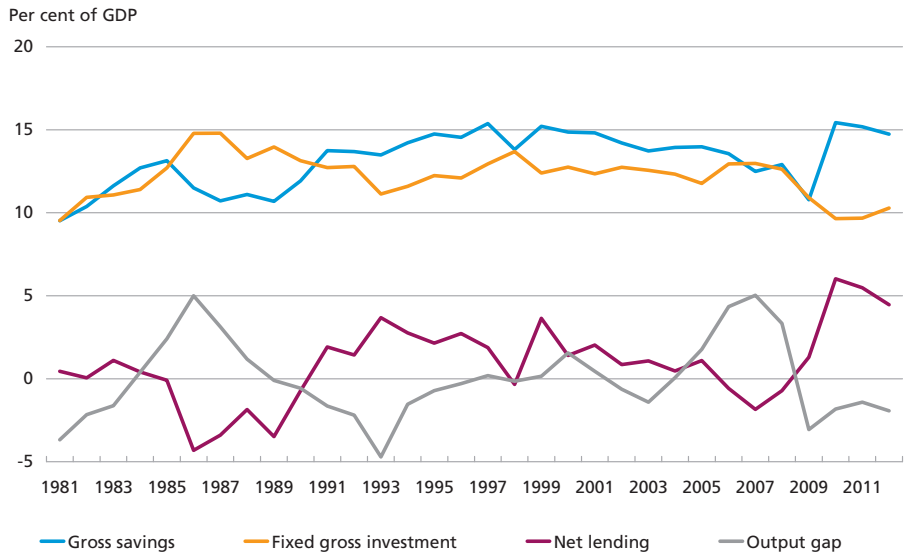
holds, on the other hand, have been recording savings deficits more or less continuously since the mid-1980s. During some periods, the cyclical link between changes in savings balances has been reinforced by the effect on cyclical developments of economic-policy measures targeted at impacting the savings balance of households, in particular, *inter alia* by reducing the tax value of interest deduction. Thus the reversal from the 1980s to the 1990s was more structural in nature, reflecting economic policy.

During the period 1981-2011, corporate net lending varied considerably, from a savings deficit of more than 4 per cent of GDP in 1986 to a savings surplus of 6 per cent of GDP in 2010, cf. Chart 2. Thus the surplus seen in recent years is the highest observed surplus for the last 30 years.

In the 1990s, firms posted significant surpluses of 2-4 per cent of GDP, and during the period 1991-2005, the average annual savings surplus in the sector was just under 2 per cent of GDP. The latest reversal in net lending has been strong – similar in strength to that of the reversal during the period of slow growth in the late 1980s and early 1990s. But the point of departure for the change has been different, and the savings surplus is currently at a significantly higher level than back then, while the real interest rate was higher then than the current rate.

DEVELOPMENT IN CORPORATE NET LENDING, GROSS SAVINGS AND INVESTMENT

Chart 2



Note: Output gap data for the period 1981-84 stems from OECD Economic Outlook, while data for the period 1985-2012 is from Danmarks Nationalbank. Figures for 2012 are based on the quarterly national accounts for the first two quarters.

Source: Statistics Denmark, Danmarks Nationalbank and OECD.

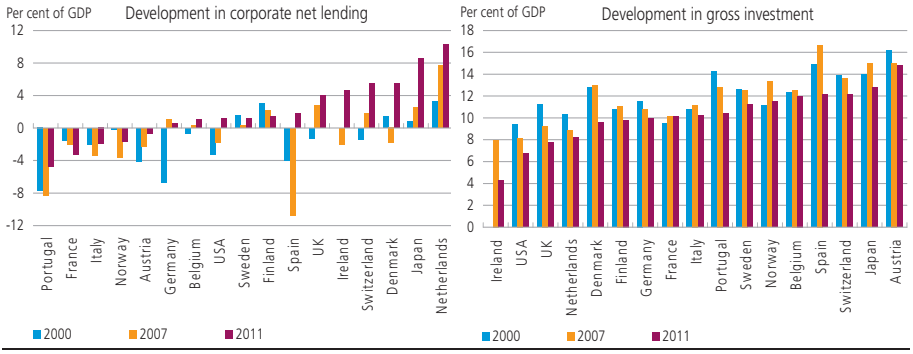
Compared with the current cyclical downturn, the fall in investment was slightly larger than at the end of the 1980s and early 1990s, while the decline in inventory investment has been greater during the current downturn. The change in gross savings was of the same magnitude as during the current cyclical downturn. Over time, fluctuations in corporate net lending have generally moved with the business cycle, measured e.g. by the output gap. The reason is that firms' savings behaviour both affects and is affected by cyclical factors. In cyclical downturns, they tend to consolidate by reducing investment expenses and inventories and by seeking to adjust employee numbers to a lower output level. During economic upturns, on the other hand, they increase investment and rebuild inventories.

The rise in corporate net lending in recent years has also been seen in other countries, cf. Chart 3. But compared with other countries, Danish net corporate lending has adjusted quite considerably, attributable e.g. to a greater fall in investment, cf. Chart 3. Thus net lending is higher only in Japan and the Netherlands. In many countries, investment is lower and net lending higher than in 2000.

To facilitate assessment of the extent to which the trend in Danish corporate net lending reflects cyclical developments during the crisis, we have examined data from a number of countries using regression analysis. Based on an estimated historical relationship, we find that the change in the output gap should have increased corporate net lending by only 2.5 per cent of GDP from 2007 to 2011, viewed in isolation. The actual increase of over 7 per cent of GDP indicates an adjustment in Danish corporate net lending above the average relationship. Such average considerations are subject to considerable uncertainty and should be interpreted with caution, since allowance has not been made for other factors, such as debt, that may impact corporate net lending. The eco-

DEVELOPMENT IN CORPORATE NET LENDING (LEFT) AND GROSS INVESTMENT (RIGHT) FOR SELECTED COUNTRIES

Chart 3



Source: OECD.

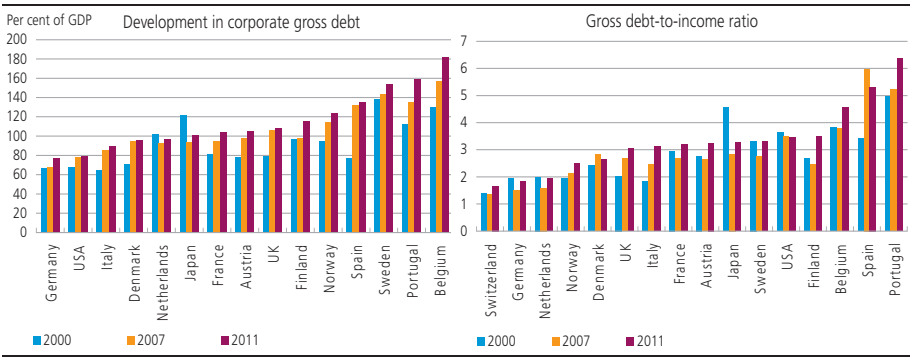
nomic downturn has been more severe than normal cyclical downturns and has been accompanied by greater uncertainty as to future prospects, which may have triggered a stronger corporate response. Corporate restraint has contributed to reinforcing the downturn.

Higher accumulation of debt may increase corporate exposure, especially to lower turnover as a result of the economic situation and to potential tightening of credit terms. Consequently, higher accumulation of debt during good times may result in a need for subsequent consolidation in the form of some years with positive net lending. Danish corporate gross debt increased from just over 70 per cent of GDP in 2000 to just under 95 per cent of GDP in 2007. However, the increase is in line with that of a number of other countries in which corporate net lending has not risen as strongly as in Denmark.

Another measure of the corporate debt burden is the corporate debt-to income ratio. Higher debt does not necessarily entail higher risk, as long as earnings rise correspondingly. Based on this measure, there are no indications that corporate debt accumulation in Denmark has been unusual, cf. Chart 4 (right).

Overall, the corporate debt level in Denmark does not seem to provide an explanation of the greater adjustment of net lending in recent years relative to other countries. Other factors that are difficult to quantify could play a role. The Danish financial sector has been hit relatively hard by the crisis, increasing the incentive of firms to become more independent of bank funding in future. Add to this that uncertainty as to future prospects remains very high, e.g. due to the sovereign debt crisis in some

DEVELOPMENT IN CORPORATE GROSS DEBT (LEFT) AND GROSS DEBT-TO-INCOME RATIO (RIGHT) Chart 4



Note: Differences in the calculation of the non-financial corporation sector's gross debt hamper international comparisons. In Denmark, borrowing has been consolidated for the sector, omitting loans between non-financial corporations. In a number of other countries, loans between non-financial corporations are estimated and included in different ways in the sector's gross debt. However, this does not change the overall conclusion. In the national accounts, corporate income has been calculated as gross profit from output plus property income less interest payments and land rental.

Source: OECD.

southern euro area member states, which has also encouraged firms to consolidate. Therefore, low interest rates, reflecting this uncertainty, have led to increased savings.

3. CORPORATE GROSS SAVINGS

After the economic downturn, firms have increased gross savings by almost 3 per cent of GDP, which is equivalent to the rise seen during the downturn in the late 1980s and early 1990s. The difference between then and now is that the current increase in gross savings is not driven by a rise in corporate profit shares (gross operating surplus), but by a fall in interest expenses, taxes and dividend payments. In an international context, corporate gross savings in Denmark have grown strongly after the crisis.

High Danish gross savings in an international context help to explain why Danish firms have generally had positive net lending. However, gross operating surplus (value added less labour costs) is at an average level internationally, and has been relatively constant. On the other hand, corporate property income is higher in Denmark.

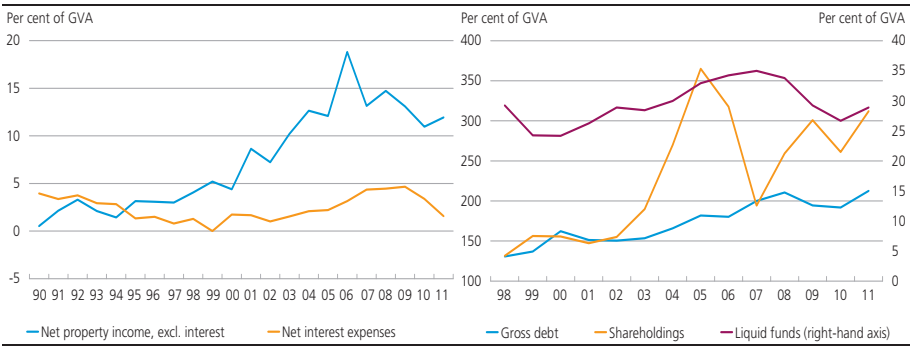
Corporate property income in Denmark has been rising sharply since the late 1990s, cf. Chart 5 (left), driven by increasing holdings of financial assets and a higher dividend-to-profit ratio. To that end, it should be noted, however, that property income as defined in the national accounts has not been consolidated for inter-corporate dividend distribution[1]. Interest payments were also increasing in the pre-crisis years, driven by higher gross debt, but have fallen since 2008 in response to low interest rates. Developments in property income reflect *inter alia* that firms have boosted their financial balance sheets. They have built up considerable holdings of shares and other equity and have increased borrowing. However, as opposed to firms in a number of other countries, especially the UK and the Netherlands, Danish firms have not accumulated significant liquid reserves.

Comparisons of savings levels should also take into consideration that Danish firms have a higher consumption of fixed real capital (depreciation) than their counterparts in other countries, cf. Chart 6 (left)[2]. Adjusted for this by looking at net savings (gross savings less consumption of real capital), Danish corporate savings are still about 3 per cent higher on average than in other countries.

[1] There is a high degree of co-variation between property income received and dividends paid, and therefore property income received should not be construed as an expression of corporate net property income.

[2] The size of the capital stock and estimates of depreciation thereof are subject to considerable uncertainty and should be interpreted with caution.

DANISH CORPORATE PROPERTY INCOME AND INTEREST EXPENSES (LEFT) AND GROSS DEBT, SHAREHOLDINGS AND LIQUID FUNDS (RIGHT) Chart 5

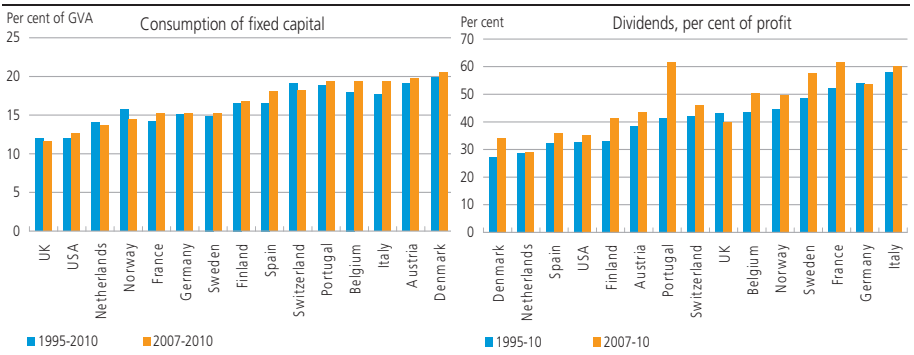


Note: Corporate gross debt, shareholdings and liquid funds have not been consolidated for intra-sector claims.
Source: Statistics Denmark and OECD.

In addition to high property income and increasing depreciation, a key driver of the relatively high savings ratio is lower dividend payments in Denmark than in other countries, both in terms of gross value added (GVA) and profits, cf. Chart 6 (right). In general, corporate dividend pay-outs increased across countries during the period 1995 to 2010 – also in Denmark.

The economic literature cites many drivers of corporate decisions on the payment of dividends, cf. *inter alia* Allen and Michaely (2003). For instance, fiscal and institutional structures may play a major role and cultural differences may exist. In Denmark, corporate dividends are taxed relatively heavily, which may also have an impact. But we find no clear indication that this is the main determining factor of cross-country differences.

CORPORATE CONSUMPTION OF FIXED REAL CAPITAL (LEFT) AND CORPORATE DIVIDEND PAYMENTS AS A PERCENTAGE OF PROFIT (RIGHT) Chart 6



Note: Corporate dividends are payments for dividends distributed in the national accounts as a percentage of corporate income after tax and transfers. The Charts show average values for the periods.
Source: OECD.

4. WHAT ARE THE DETERMINANTS OF CORPORATE INVESTMENT?

The decline in corporate investment in recent years to the lowest percentage of GDP during the statistics period, i.e. the last 30 years, has triggered expectations of growth potential for investment in the coming years. However, Denmark was not the only country to experience a contraction in investment during the period 2007-11. Investment also dropped sharply in most other OECD countries, thus contributing to the reversal in net lending.

Over a longer horizon, nominal investment as a percentage of GDP has shown a declining trend for the OECD countries overall, cf. Chart 7 (left). In Denmark, this trend has largely tracked that of the other countries, although somewhat more volatile. Developments reflect that over the last 30 years, the ratio of the price of capital (investment deflator) to the GDP deflator has gradually fallen in the OECD countries, cf. Chart 7 (right). Again, Denmark has closely mirrored the other OECD countries for large parts of the period since the early 1980s.

When the relative price of investment goods declines, it becomes cheaper for firms to maintain fixed capital stock. Mechanically, this entails that if firms wish to keep the investment ratio in real values constant, the share of investment of GDP in nominal terms will fall. Both OECD (2007) and IMF (2006) cite that the decline in the nominal investment ratio may be due to developments in the relative price ratio[1].

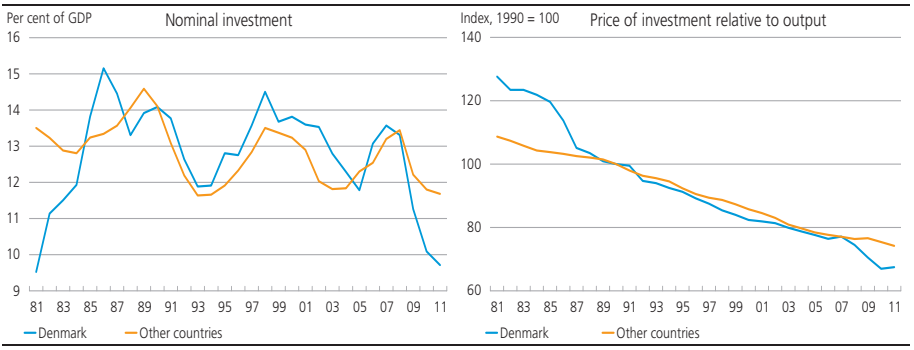
In order to examine whether future growth potential exists for investment, we will investigate corporate real investment using an econometric panel data analysis for a number of countries. Our estimation results indicate that the investment ratio depends positively on output growth and negatively on the cost of capital[2].

Based on our estimated model, the structural level of investment can be determined. A comparison of the actual investment level and the structural level shows that the difference mirrors the business cycle. In the run-up to the crisis, capital accumulation was more rapid than warranted by underlying structures, since firms were expecting continued growth in demand, cf. Chart 8. But when the crisis struck, corporate investment appetite weakened. The actual investment ratio in Denmark is currently significantly lower than the structural ratio, while this is not

[1] Another factor to impact the investment level is the depreciation rate. Danish and foreign firms have seen a general increase in this rate. Consequently, they have had to reinvest a larger percentage of their capital stock to maintain its value. In general, the depreciation rate has been higher in Denmark than in the other countries on average, pointing towards a higher investment ratio in Denmark.

[2] Estimations show that a permanent increase in potential GDP growth of 1 percentage point leads to a rise of 0.35 percentage points in the investment ratio.

INVESTMENT (LEFT) AND RELATIVE PRICES (RIGHT) Chart 7



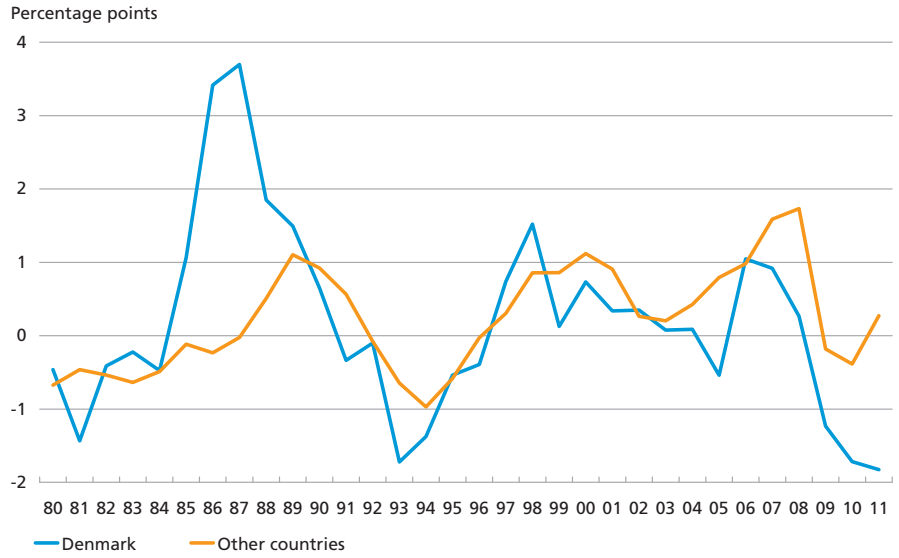
Note: Investment is household nominal investment excl. residential investment. GDP is for the entire economy. Other countries is a simple average of Australia, Belgium, Canada, Finland, France, Netherlands, Norway, UK, Sweden, Germany, USA and Austria. Investment for Austria extends only to 2010.
Source: OECD, *Economic Outlook*, Nos. 90 and 91.

the case for the other countries overall. Thus, our results indicate that there is growth potential for investment in Denmark in future.

Foreign direct investment

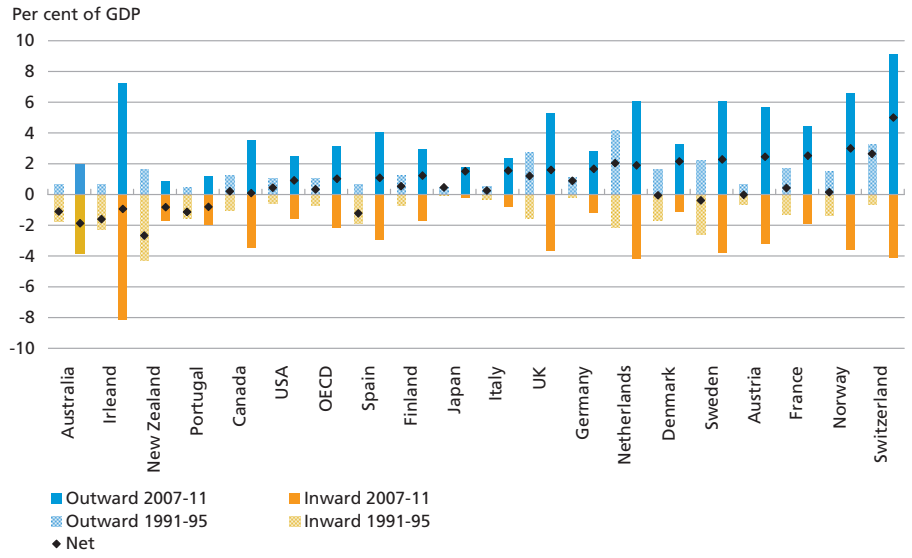
The possibility of making foreign direct investment, FDI, may affect domestic investment. A broad segment of countries have seen a rise in outward and inward FDI, cf. Chart 9. This should be viewed in the context of a general globalisation trend, facilitating investment across national borders. Many OECD countries have experienced a net outflow of

DIFFERENCE BETWEEN ACTUAL AND STRUCTURAL INVESTMENT RATIOS Chart 8



Source: Own calculations.

INWARD AND OUTWARD FDI Chart 9



Note: Figures refer to the overall economy and are averages for the periods 1991-95 and 2007-11. Inward FDI is shown with a negative sign to illustrate it below the x-axis.
Source: OECD.

FDI. In northern European countries, including Denmark, the net outflow of FDI totals about 2 per cent of GDP.

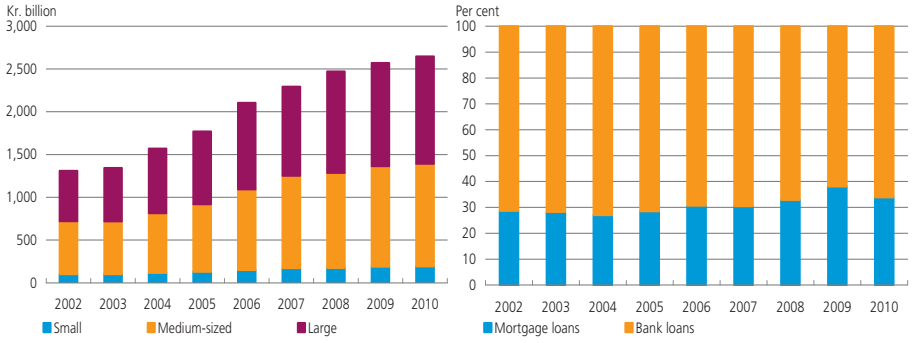
The growing volume of outward FDI has led to significant FDI holdings in northern European countries, in particular. This generates a return for firms in the home country, and this return is part of the firms' property income. Denmark is in the top half for these returns among EU member states, although we are lagging behind countries such as Finland and Sweden.

A frequent point of discussion in the economic debate has been that FDI reduces domestic investment spending, but if we look at domestic investment relative to net FDI flows, there is no clear relationship. The findings of previous studies are contradictory. Desai et al. (2005) find indications of a positive relationship between outward FDI and domestic investment for multinational corporations, while Feldstein (1994) finds a negative relationship.

5. ANALYSIS OF DEBT DEVELOPMENT AND INVESTMENT BASED ON ACCOUNTING DATA FOR DANISH FIRMS

Based on accounting data for Danish firms from Experian (micro data set) covering the period 2002-10, we can analyse developments in more detail across industries, firm sizes and corporate structures. Corporate

TOTAL DEBT BROKEN DOWN BY FIRM SIZE (LEFT) AND SMALL AND MEDIUM-SIZED FIRMS' DEBT BROKEN DOWN BY BANK AND MORTGAGE LOANS (RIGHT) Chart 10



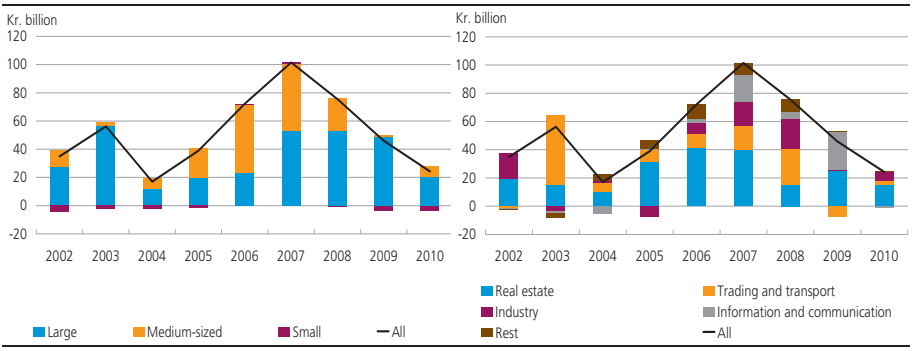
Note: Small firms are defined as firms with total assets under kr. 10 million, medium-sized firms as firms with total assets between kr. 10 million and kr. 1 billion and large firms as firms with total assets over kr. 1 billion. Short-term and long-term debt is debt with a remaining maturity of up to 1 year and over 1 year, respectively.
Source: Experian.

debt increased throughout the period, although at a slower pace during the last few years of the period. The deceleration of debt accumulation in 2009-10 was distributed broadly across firm sizes, cf. Chart 10 (left). The share of mortgage loans increased in the loan portfolios of both small and medium-sized firms, cf. Chart 10 (right).

Corporate investment and dividend payments

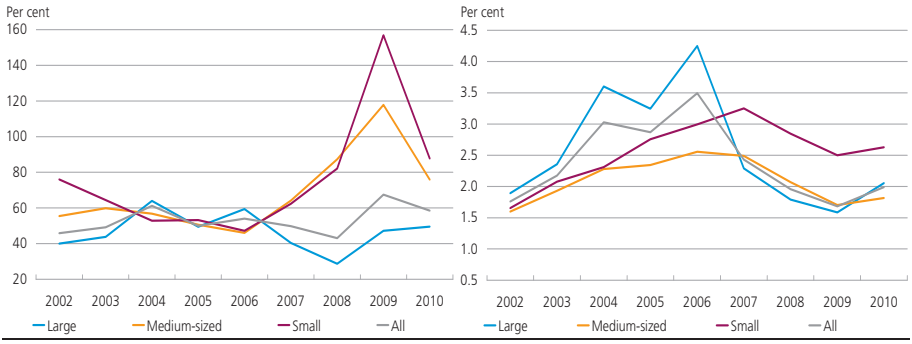
Firms also reduced investment in response to the severe economic downturn. Development in net investment was driven primarily by large and medium-sized firms, cf. Chart 11 (left). In the run-up to the financial crisis, medium-sized firms invested heavily, but in the subsequent recession

NET FIXED CAPITAL FORMATION, BROKEN DOWN BY FIRM SIZE (LEFT) AND INDUSTRY (RIGHT) Chart 11



Note: Small firms are defined as firms with total assets under kr. 10 million, medium-sized firms as firms with total assets between kr. 10 million and kr. 1 billion and large firms as firms with total assets over kr. 1 billion. Short-term and long-term debt is debt with a remaining maturity of up to 1 year and over 1 year, respectively.
Source: Experian.

DIVIDENDS RELATIVE TO NET PROFITS AFTER TAX (LEFT) AND TOTAL ASSETS (RIGHT), BROKEN DOWN BY SIZE OF TOTAL ASSETS Chart 12



Note: Small firms are defined as firms with total assets under kr. 10 million, medium-sized firms as firms with total assets between kr. 10 million and kr. 1 billion and large firms as firms with total assets over kr. 1 billion. Short-term and long-term debt is debt with a remaining maturity of up to 1 year and over 1 year, respectively.
Source: Experian.

they cut back on investment. Large firms also reduced investment spending, albeit to a lesser extent. It appears that the real estate sector was a driver of the investment boom until 2008. Trading and transport firms and the industrial sector invested heavily both in 2007 and 2008 and thus reduced their investment spending later than the real estate sector.

During the boom, corporate dividend payments rose only to fall when the financial crisis struck. This trend may be attributed mainly to large firms.

The dividend payout ratio, i.e. the ratio of dividends paid to net profits after tax, was largely in line for all sizes of firms during the boom, cf. Chart 12 (left).[1] In 2008 and 2009, medium-sized and small firms significantly increased their dividend payout ratios, while large firms maintained their levels. The sharp rise in the dividend payout ratios of medium-sized and small firms reflects a greater fall in net profits after tax than in dividend payments.

Relative to their total assets, large firms paid a greater share than small and medium-sized firms in the run-up to the financial crisis. But this trend was reversed in 2007 after which time large firms reduced their ratios of dividends to total assets to a greater extent than small firms, cf. Chart 12 (right).

[1] Above, the ratio of dividends to gross profits is calculated.

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The Banks' Interest Rates

Brian Liltoft Andreasen, Financial Markets, Paul Lassenius Kramp, Economics, and Andreas Kuchler, Statistics

INTRODUCTION AND SUMMARY

Since 2008, Danmarks Nationalbank has lowered its interest rates on several occasions, but the banks' interest rates have not fallen correspondingly. During 2012, some of the banks' customers have seen the interest rates on their own loans being raised, while reading in the newspapers that Danmarks Nationalbank's interest rates were still falling and the rate of interest on certificates of deposit was negative.

The banks' retail and corporate interest rates roughly fluctuate with Danmarks Nationalbank's interest rates. How closely they are linked varies during a business cycle. In periods of recession, the banks widen their interest-rate margins, i.e. the spread between lending and deposit rates, in response to higher credit risk and to prevent a decline in earnings, while the interest-rate margins are reduced when the economy is booming. This procyclical pattern has also been seen in the current economic downturn, with banks gradually increasing their interest-rate margins since 2008.

Despite higher interest-rate margins, both households and firms are benefitting from the extraordinarily low monetary-policy interest rates at the moment, in that bank lending rates are generally lower than before the financial crisis, and the rates of interest on mortgage loans are historically low.

The bank' earnings must be said to be low at present. This is attributable to large loan impairment charges and falling lending volumes, among other factors, which have contributed to a substantial reduction in bank earnings. This decline has only to some extent been offset by higher interest-rate margins and cost reductions.

In the current recession, the banks' earnings are also squeezed by the low monetary-policy interest rates. The unusually low level of interest rates has made it difficult – if not impossible – for the banks to lower their deposit rates further. As a result, it is no longer possible to "pass on" the reductions in monetary-policy interest rates to depositors. At the same time, the rates of interest on some of the banks' loans are linked to reference interest rates that mirror Danmarks Nationalbank's

interest rates closely. The extraordinarily low monetary-policy interest rates mean that the banks' earnings on such loans are reduced.

Finally, the forthcoming Capital Requirements Directive, CRD IV, imposes tougher requirements on the quality and size of the banks' capital and introduces new, harmonised liquidity rules across the EU. The new requirements will entail indirect demands on bank earnings, which must be sufficiently high to build up the required capital buffers. Several international analyses of the consequences of this new regulation indicate that the banks' lending rates will rise in response to the more stringent requirements.

DEVELOPMENT IN INTEREST RATES

As part of the fixed-exchange-rate policy, Danmarks Nationalbank has reduced its monetary-policy interest rates in step with those of the euro area since 2008.[1] Moreover, due to sustained upward pressure on the krone, Danmarks Nationalbank has, on several occasions, unilaterally reduced its monetary-policy interest rates so that they are now lower in Denmark than in the euro area. With the most recent reduction, the rate of interest on certificates of deposit became negative.

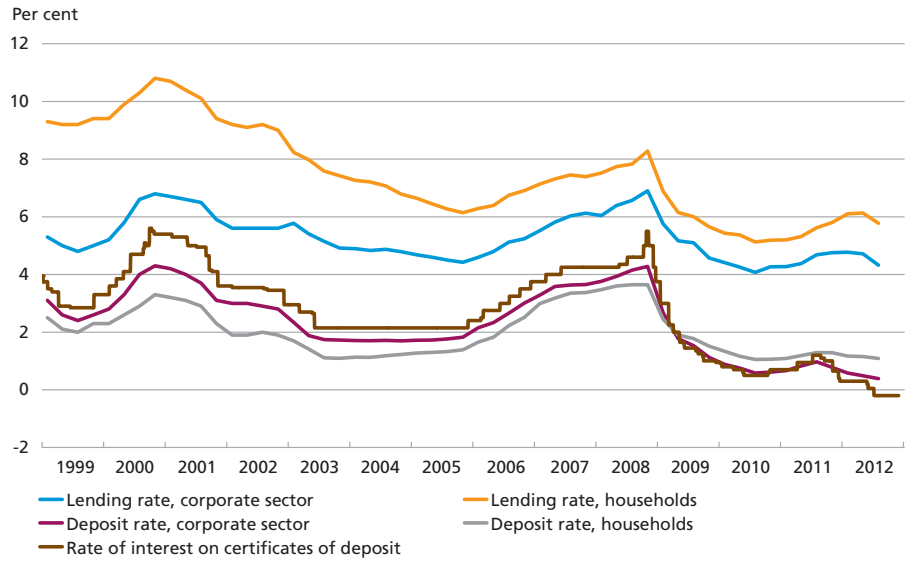
The banks' retail and corporate interest rates usually fluctuate with Danmarks Nationalbank's interest rates, cf. Chart 1. There are two main reasons why this is so. Firstly, most bank deposits and loans bear interest at a variable rate. Secondly, Danmarks Nationalbank's monetary-policy instruments and the short-term money market are potential marginal sources of funding for the individual banks. For the financial sector overall, Danmarks Nationalbank's interest rates are equivalent to the marginal price of liquidity.

However, the link between monetary-policy interest rates and bank interest rates varies over the business cycle. In recent years, bank lending rates have not fallen by as much as the development in monetary-policy interest rates would indicate. Bank deposit rates have to a greater extent mirrored the monetary-policy rates. Consequently, the banks' interest-rate margins – that is, the spread between lending and deposit rates – rose from 2008 until the beginning of 2012. Recently, however, interest-rate margins have narrowed a little. The widening of interest-rate margins is in line with the slowdown in the economy, cf. Chart 2, as the banks overall face higher credit risk on lending in a recession, and earnings fall, cf. below.

[1] Cf. Danmarks Nationalbank (2009).

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

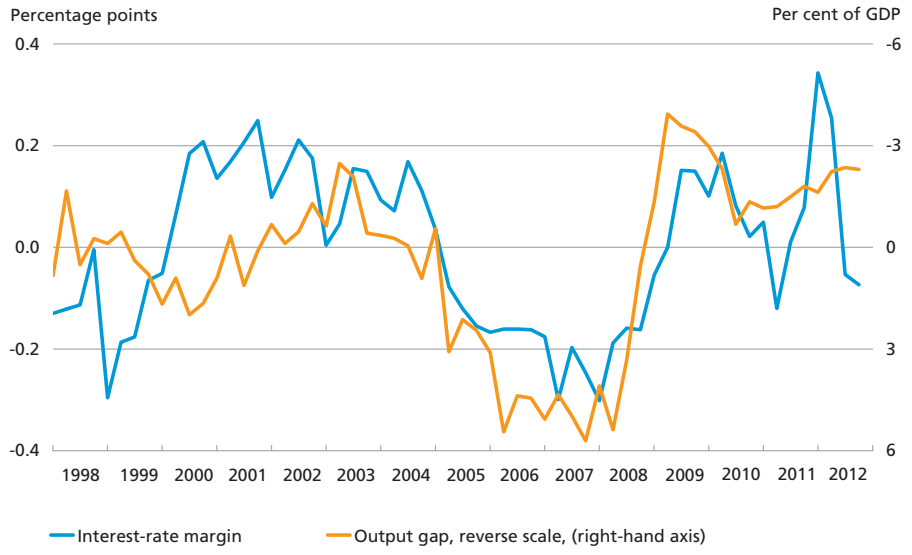
Chart 1



Note: Rate of interest on certificates of deposit on a daily basis, other interest rates on a quarterly basis.
Source: Danmarks Nationalbank.

THE CYCLICAL COMPONENT OF THE INTEREST-RATE MARGIN AND THE OUTPUT GAP

Chart 2



Note: The cyclical component of the interest-rate margin is defined as the deviation from an HP-filtered trend (lambda = 1,600). The interest-rate margin has been falling over time especially for households, one reason being that the banks have changed their price policies. Such structural changes are eliminated by analysing an HP-filtered trend.
Source: Danmarks Nationalbank.

To provide a more detailed picture of the development in bank interest rates, the interest-rate margin can be split into a lending margin and a deposit margin. The lending margin is calculated as the spread between the lending rate and the short-term money-market rate, while the deposit margin is the spread between the short-term money-market rate and the deposit rate. The aggregated interest-rate margin is the sum of the lending and deposit margins.

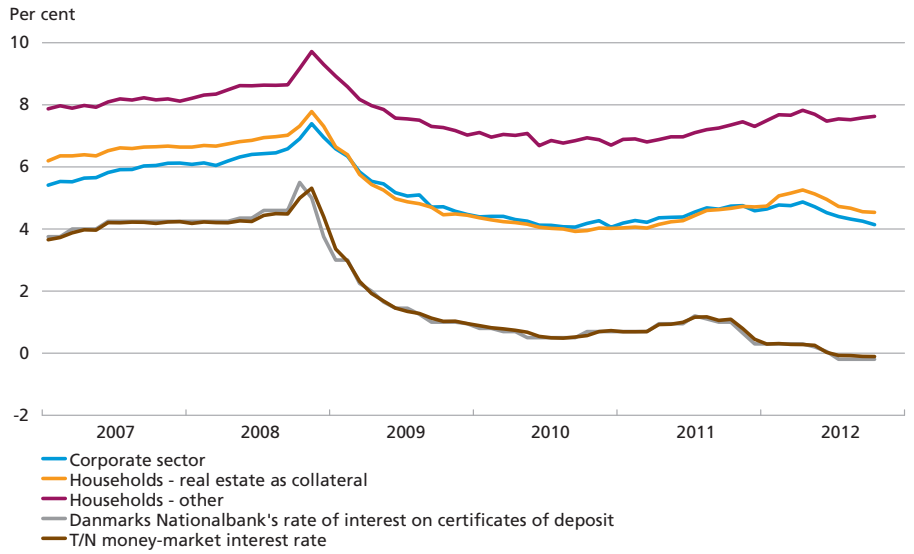
In normal conditions, both the lending and deposit margins are positive. This is because borrowers pay a higher interest rate than the rate the bank can earn by placing an extra krone in the short-term money market, and depositors receive a lower rate on their accounts than the interest rate at which the bank can borrow in the money market.

The banks' lending rates

While the short-term money-market rate has followed Danmarks Nationalbank's rate of interest on certificates of deposit closely, the link between the banks' lending rates and the rate of interest on certificates of deposit has become less clear in recent years, cf. Chart 3. Hence, from the autumn of 2008 to the end of 2010 bank lending rates did not fall by quite as much as the rate of interest on certificates of deposit.

AVERAGE INTEREST RATES ON OUTSTANDING BANK LOANS, RATE OF INTEREST ON CERTIFICATES OF DEPOSIT AND MONEY-MARKET INTEREST RATE

Chart 3



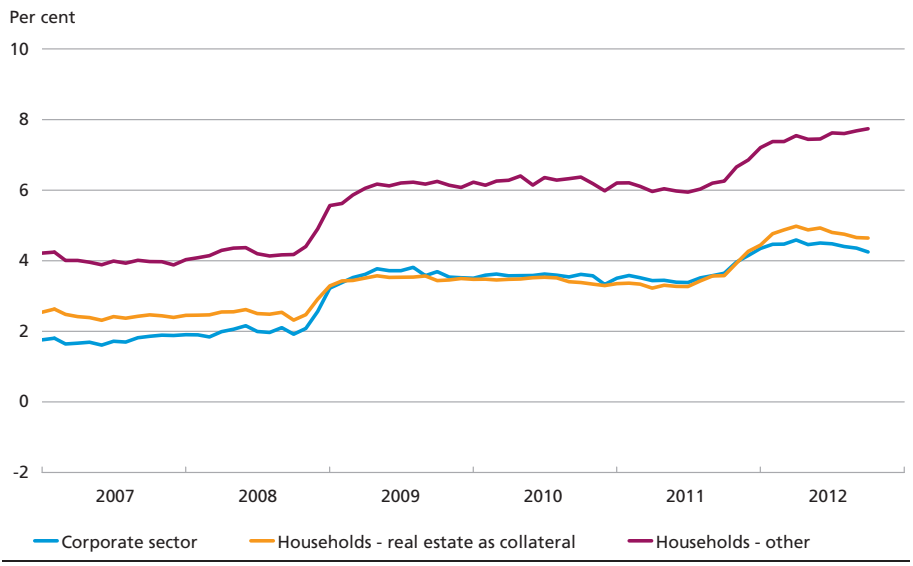
Note: Households refer to the household sector, i.e. sole proprietors, wage earners and old-age pensioners, etc.
Source: Danmarks Nationalbank.

This reduced covariation between bank lending rates and monetary-policy interest rates is clearly reflected in the banks' lending margins, cf. Chart 4. From the end of 2008 to the beginning of 2009, average lending margins thus widened by approximately 2 percentage points. This was not because the banks actively raised their interest rates, but because lending rates were not lowered in step with the monetary-policy interest rates. The lending margins widened by a further 1.5 percentage points or so at the end of 2011, reflecting a combination of falling monetary-policy interest rates and a slight increase in lending rates.

In 2012, a number of banks have announced further interest-rate rises on parts of both their retail and corporate loan portfolios. According to Danmarks Nationalbank's interest-rate statistics, the most recent announcements have only had a weak impact on the average lending rate for households on loans excluding loans for house purchase. As regards housing loans to households and corporate loans, no immediate effect of the announced increases can be seen. The reason could be that many of these loans are directly linked to a reference rate such as Cibor or Danmarks Nationalbank's rate of interest on certificates of deposit. For such loans, a fall in the reference rate will immediately lead to an equivalent fall in the lending rate.

Although the announced interest rate increases are only to a limited extent reflected in Danmarks Nationalbank's interest-rate statistics,

THE BANKS' AVERAGE LENDING MARGINS Chart 4



Note: Households refer to the household sector, i.e. sole proprietors, wage earners and old-age pensioners, etc. The lending margin has been calculated as the spread between the lending rate and the T/N money-market rate.
Source: Danmarks Nationalbank.

there will be customers who will be paying a higher rate of interest on their loans while reading in the newspapers that monetary-policy interest rates have fallen to a historically low level. The increases have mainly affected uncollateralised loans or loans collateralised against other assets than real property. It should be noted that the statistics could be affected by substitution between products. The interest-rate statistics are based on actual interest paid and hence they reflect both changes in interest rates on the various loan types and changes in the distribution of loan types.

In most other countries, real property is typically financed by banks, while mortgage banks have a large share of this market in Denmark. Furthermore, the share of the property that is mortgaged may vary considerably from one country to another. Such differences in financial structures make it difficult to compare interest rates across countries. In an international comparison, Danish banks' interest rates on housing loans may look relatively high, but this is because the banks' collateral often ranks after that of the mortgage banks. Consequently, interest rates are substantially lower on mortgage loans than on bank loans. Overall, interest rates on Danish housing loans are on the low side compared with those in other countries, cf. Box 1.

The banks' deposit rates

As is the case for lending rates, the link between the banks' deposit rates and Danmarks Nationalbank's rate of interest on certificates of deposit has become less clear in recent years, cf. Chart 6. Traditionally bank deposit rates have been lower than Danmarks Nationalbank's rate of interest on certificates of deposit and the short-term money-market rates. Since early 2009 the reverse has applied. The banks' deposit margins have become negative, cf. Chart 7. As a result, the banks can no longer make a profit from attracting further deposits and placing the resultant liquidity in the money market.

The background to the negative deposit margins is that interest rates in 2009 became so low that it became extremely difficult for the banks to lower their deposit rates further, even though monetary-policy interest rates continued to fall. For most ordinary overnight deposits, the rate of interest was already zero or close to zero. Hence it was no longer possible for the banks fully to "pass on" the reductions of the monetary-policy interest rates to their depositors. In a few cases, interest rates on corporate deposits have, however, been negative, primarily for special short-term time deposits, cf. Jørgensen and Risbjerg (2012). At the same time, the deposit margins have been affected by recent years' intensified competition for deposits, particularly on time deposits which can only be

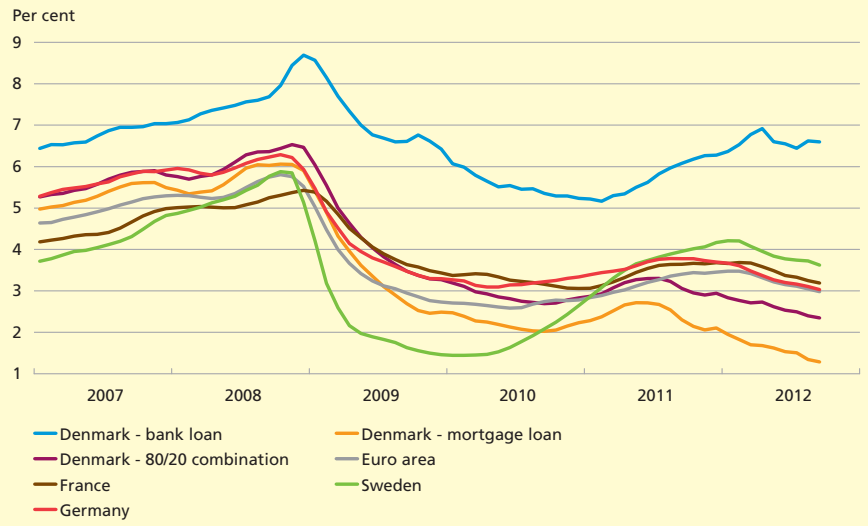
INTERNATIONAL COMPARISON OF LENDING RATES Box 1

Due to differences in financial structures, international comparisons of bank interest rates are difficult.[1] Especially differences in the underlying collateral for loans, maturity structures and rate fixation periods play a role. Aggregate interest rates may reflect differences in both interest rates and in the weighting of individual subcomponents. So international comparisons should preferably focus on specific combinations of the dimensions that are significant to the comparison.

The vast majority of Danish bank loans having real estate as collateral have short rate fixation periods. Since the mortgage banks' collateral usually ranks first, while the banks' collateral often ranks second, the banks' interest rates are higher than those of the mortgage banks and relatively high compared with levels in other European countries, cf. Chart 5.

The overall short-term interest rate for real estate financed 80 per cent by a loan from a mortgage bank and the remaining 20 per cent by a bank loan, does not differ substantially from the level in other countries. However, the loan-to-value ratio in other countries is normally well below 100 per cent, so in that perspective Danish interest rates are relatively low compared with those observed in other countries.

INTEREST RATES ON NEW HOUSING LOANS WITH SHORT RATE FIXATION PERIODS IN SELECTED COUNTRIES Chart 5

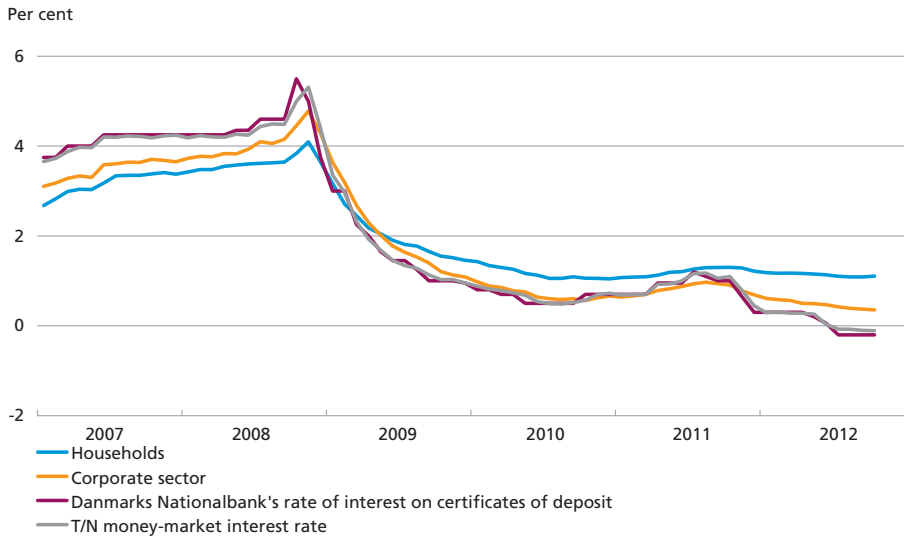


Note: The chart shows interest rates on new loans for housing purposes and with a rate fixation period of up to one year. The rates of interest are shown as 3-month moving averages.
Source: ECB and Danmarks Nationalbank.

[1] In a recent survey, the ECB analysed the development in bank interest rates in selected euro area member states, cf. ECB (2012). Among other things, the survey concluded that different financial structures are a major explanation of cross-border differences in interest rates.

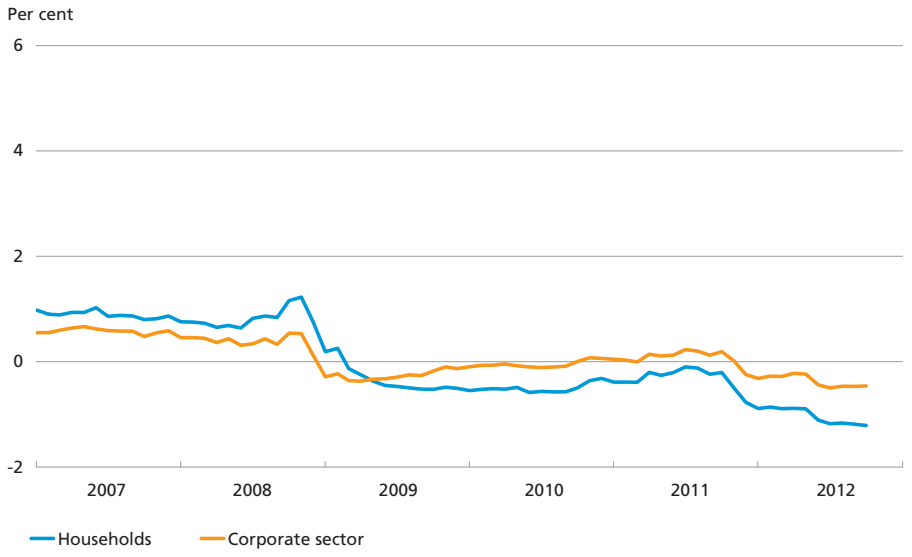
withdrawn at the end of an agreed period of e.g. 1 or 3 years. Today, the rate of interest on time deposits from households with a rate fixation period of more than 2 years is approximately 1.5 per cent. Time deposits account for around 38 per cent of total deposits.

AVERAGE INTEREST RATES ON OUTSTANDING BANK DEPOSITS — Chart 6



Note: Households refer to the household sector, i.e. sole proprietors, wage earners and old-age pensioners, etc.
Source: Danmarks Nationalbank.

THE BANKS' AVERAGE DEPOSIT MARGINS — Chart 7



Note: Households refer to the household sector, i.e. sole proprietors, wage earners and old-age pensioners, etc. The deposit margin has been calculated as the spread between the T/N money-market rate and the deposit rate.
Source: Danmarks Nationalbank.

In Danmarks Nationalbank's interest-rate statistics, the rate of interest on overnight deposits is also affected by deposits linked to bank mortgage loans[1], which push up the average considerably. A survey based on data from April to August 2012 shows that, if bank mortgage loans and similar are excluded, the rate of interest on overnight deposits from households was around 0.3 per cent.

FACTORS AFFECTING THE BANKS' INTEREST-RATE MARGINS

The banks' interest rates are also affected by other factors than the development in monetary-policy interest rates, including credit risk and bank earnings. In the current situation, new liquidity and capital requirements for banks also play a role. Several surveys show that the new rules may lead to higher lending rates.

Higher credit risk

As a natural part of their activities, banks take on a credit risk when providing loans to households and firms. Credit risk is the risk of the bank incurring a loss as a consequence of a borrower's default on its payment obligations. This risk depends on the business cycle, the borrower's creditworthiness and the value of any collateral pledged, e.g. real property.

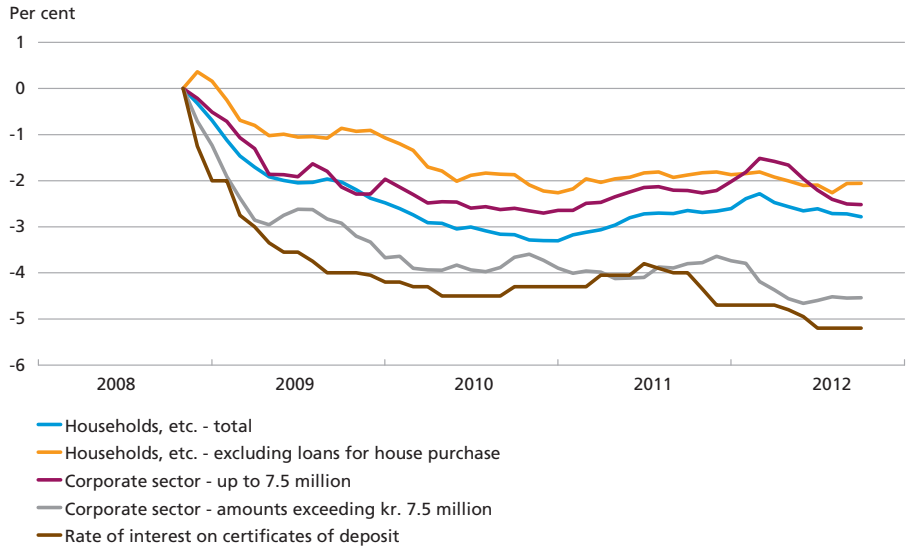
The interest rate on a loan normally reflects the credit risk on the individual borrower or a group of borrowers with the same characteristics as the borrower in question. So part of the lending margin can be seen as a premium for the credit risk taken on by the bank when granting the loan.

Prior to the financial crisis, most banks adopted an optimistic approach to the assessment of credit risk. Unemployment was record low, corporate key ratios good and the collateral pledged increased in value. This optimism meant that credit risk premia were generally low, while the banks' lending growth was high.

Following the outbreak of the financial crisis, the banks have revised their assessments of credit risk on borrowers. One of the main reasons is that the combination of a weak economy and falling collateral values has increased the risk of losses. At the same time, the banks have seen an increasing number of non-performing loans, which have increased their risk awareness. As a result, the banks have tightened their credit

[1] These loans are often designed as loans against real property as collateral linked to a deposit account which accrues interest at the same rate as the loan. A recent survey showed that deposits in such accounts make up 13-18 per cent of total overnight deposits.

ACCUMULATED CHANGES IN INTEREST RATES SINCE NOVEMBER 2008 Chart 8



Note: The banks' interest rates are shown as 3-month moving averages of interest rates on new loans. The rate of interest on certificates of deposit as per month-end. Households refer to the household sector, i.e. sole proprietors, wage earners and old-age pensioners, etc.
Source: Danmarks Nationalbank.

policies for both corporate customers and households, cf. Danmarks Nationalbank's quarterly lending surveys.[1]

The banks differentiate their interest rates across customers and product types, and the lending margin may have been increased more for some customer groups than for others. Interest rates on loans with relatively sound collateral show a closer correlation with money-market interest rates than loans with collateral of a poorer quality, cf. Chart 8. The banks' differentiation of prices for corporate loans is reflected in e.g. a lower average interest rate on large corporate loans than on small corporate loans, cf. Box 2.

Squeezed earnings

The banks' earnings have been squeezed since the financial crisis erupted in the autumn of 2008. In the period 1995-2007, the average annual return on the banks' equity was more than 15 per cent before tax. In recent years, it has been less than 2 per cent before tax. There are several reasons for this:

[1] Danmarks Nationalbank's lending survey is based on assessments by credit managers of the largest banks and mortgage banks concerning changes in the supply of and demand for loans, as well as the terms and conditions for loans, in the most recent quarter and expected changes in the coming quarter. The survey was introduced in the 4th quarter of 2008.

- The banks' loan impairment charges are substantially higher than before the crisis. Many of the loan impairment charges still relate to loans granted in the pre-crisis years. Under the current rules, loan impairment charges must be made when there is objective evidence of impairment, and it is not permitted to distribute these charges evenly on "good" and "bad" years. If current earnings do not match the loan impairment charges, the solvency base will be eroded, which could jeopardise the bank. To avoid this scenario, banks may have to raise their prices.
- The banks' funding costs have risen relative to the development in monetary-policy interest rates. This is illustrated by the declining deposit margins, cf. Chart 7, but also by the fact that interest-rate spreads on debt issued by banks are wider than before the crisis. At the same time, the interest rates on some of the banks' lending are linked to interest rates that mirror Danmarks Nationalbank's interest rates closely. Hence, the extraordinarily low monetary-policy interest rates mean that the banks' earnings on such loans are reduced.
- Lending by banks has declined. So the banks' net interest income is reduced not only because of higher funding costs, but also because of a lower lending volume.

All these factors have contributed to squeezing bank earnings and thus help to explain the widening lending margins.

In spite of the increasing interest-rate margins, bank earnings must still be said to be low, cf. Chart 10. Consequently, unless the level of loan impairment charges declines, other measures may be required to increase the return on the banks' equity. Several banks have once again

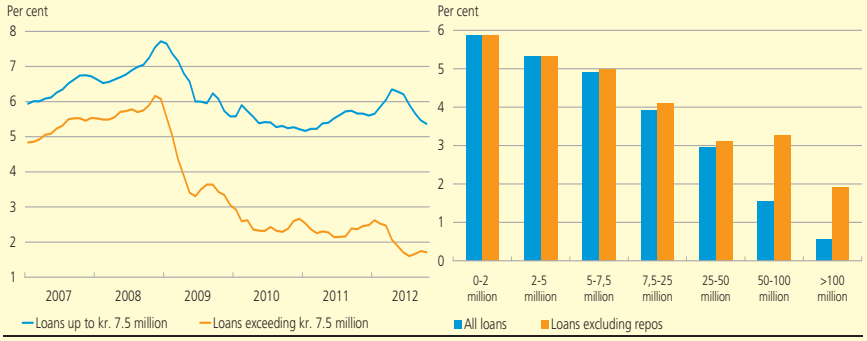
INCREASED PRICE DIFFERENTIATION VIS-À-VIS CORPORATE CUSTOMERS Box 2

The banks' differentiation among customer groups can be illustrated by the breakdown of the interest-rate statistics for new corporate loans above and below kr. 7.5 million.[1] The rate of interest on large loans, which account for the lion's share of the aggregate volume, has declined markedly since late 2008, cf. Chart 9 (left). For the smaller loans, the overall decrease since 2008 has been far less pronounced. The difference in the interest rate level for loans above and below kr. 7.5 million is attributable to factors such as differences in the firms' sizes, collateral pledged and administration costs. Small firms have a higher probability of default than large firms, and hence the credit risk is also greater, other things being equal.

The interest rate spread between large and small corporate loans has widened since 2008. In the autumn of 2012, Danmarks Nationalbank collected further data from banks in order to investigate the reasons for this spread.[2] The survey shows a negative correlation between the rate of interest and the size of the loan, cf. Chart 9 (right).

CONTINUED Box 2

INTEREST RATES ON NEW CORPORATE LOANS, BROKEN DOWN BY LOAN SIZE Chart 9



Note: The rates of interest in the left-hand chart are shown as 3-month moving averages. The right-hand chart is based on data for the period April-August 2012.
Source: Danmarks Nationalbank, interest-rate statistics and a specially collected data set.

Furthermore, the survey shows that a major difference between loans above and below kr. 7.5 million is the underlying collateral. Repos, i.e. loans collateralised by securities, constitute a substantial share of loans exceeding kr. 7.5 million. Due to the collateral pledged for repo loans, the rate of interest is markedly lower for these loans than for other corporate loans. So the rate of interest on other corporate loan types is considerably higher than the average rate for loans exceeding kr. 7.5 million. A conservative estimate based on data from April to August 2012 shows that the rate of interest on loans exceeding kr. 7.5 million exclusive of repos is some 1.0-1.5 percentage points higher than the rate of interest shown in the left-hand chart. Repos now constitute a larger share of the banks' outstanding loans than before the financial crisis. However, it cannot be said with certainty whether this increase is attributable to individual sectors, such as insurance and pension companies, which are not included in the figures for the corporate sector.

Finally, the survey shows a clear link between the size of the loan and the size of the firm. Loans to small and medium-sized enterprises account for most of the volume of loans below kr. 7.5 million.

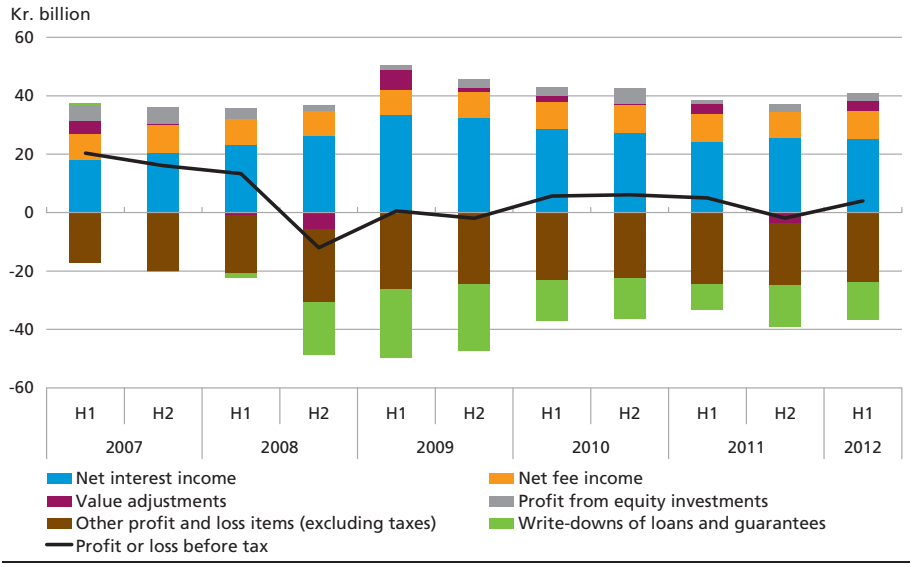
[1] New corporate loans are defined as "any new agreement concluded with non-financial corporations during the reference period". New agreements should be taken to mean: "All financial contracts or agreements on terms and conditions where the rate of interest for a deposit or loan is fixed for the first time (new accounts), as well as existing loans where the terms and conditions have been amended following renegotiation."

[2] Five banks participated in the survey and provided a cross-sectional data set on interest rates on new corporate loans broken down by a large number of loan size categories than in the ordinary interest-rate statistics, for the period April-August 2012. The survey comprises new loans for some kr. 35 billion, corresponding to around half of the aggregate new loans in Danish kroner during that period.

begun to focus on adjusting costs. The number of employees in Danish banks has declined by more than 10 per cent since 2008, and there are plans to reduce staffing further in the coming years.

In *Financial stability* 2012, Danmarks Nationalbank recommended that banks with low excess capital adequacy should seek to strengthen their

THE BANKS' EARNINGS BROKEN DOWN BY MAIN ITEMS Chart 10



Note: "Profit from equity investments" comprises the profit from equity investments in affiliated and associated companies. "Other profit and loss items" comprises share dividend, other operating income, other operating expenses, staff and administration costs, depreciation and profit/loss from assets temporarily in possession.
Source: Danish Financial Supervisory Authority and own calculations.

earnings.[1] Solid, positive earnings are essential if the banks are to be able to absorb unforeseen loan impairment charges and losses. Earnings can strengthen the capital base directly via retained profits, while also making it easier to raise new capital in the market. For some banks, this is a prerequisite if they are to meet the future capital requirements.

New regulation imposes higher capital requirements

Against the background of the financial crisis, a number of new regulatory initiatives have been launched, both nationally and internationally. All these initiatives are aimed at ensuring a more robust financial system. The international rules will be implemented in Denmark via pan-European sets of rules.

A cornerstone in the future regulation is the forthcoming Capital Requirements Directive, CRD IV, which, among others, imposes higher requirements on the quality and size of the banks' capital and introduces new, harmonised liquidity rules across the EU. These new requirements indirectly imply that bank earnings must be sufficiently high to support the build-up of the necessary capital buffers. At the same time, the requirements of more stable sources of funding may increase the banks' funding costs.

[1] Cf. Danmarks Nationalbank (2012).

On the other hand, a more robust financial system could ultimately reduce the banks' funding costs as investors will require lower risk premia when investing in and lending money to the banks. If the banks become more safe, investors will, all else equal, accept lower returns, irrespective of whether they are investing in debt or equity.

Several international studies have analysed the consequences of this new regulation and the results indicate that the banks' lending rates will rise in response to the tougher requirements.[1] In September 2012, the International Monetary Fund, IMF, published a study in which the long-term effects of the new capital and liquidity requirements were estimated to entail a general increase in interest-rate margins by 17 basis points in Europe.[2] Other international studies show that the impact could be considerably stronger.[3] The analyses take different approaches to assessing the consequences, so caution should be exerted when comparing them.

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1 Cf. Christensen (2011).
2 Cf. Santos et al. (2011).
3 Cf. BIS (2010).

A Comparison of the ERM Crisis in the Early 1990s with Recent Years' Financial and Sovereign Debt Crisis in Europe

Kim Abildgren and Sune Malthe-Thagaard, Economics

INTRODUCTION AND SUMMARY

In the early 1990s, the European foreign-exchange market was exposed to strong speculative pressures, during which one currency after the next came under attack. The pound sterling, the Italian lira, the Portuguese escudo, the Spanish peseta, the Irish pound, the Swedish krona, the Norwegian krone as well as the Finnish mark fell sharply. The crisis culminated in 1993 with speculation against the entire ERM system.

About 20 years later, the financial and sovereign debt crisis in certain European countries has once again put the European economic cooperation under pressure. This article compares the crisis in the European Exchange Rate Mechanism, ERM, in the early 1990s with recent years' financial and sovereign debt crisis. The role of fiscal policy and macroeconomic imbalances in the years ahead of the crises are analysed. Furthermore, the significance of the launch of the euro and the single monetary policy to the crises in recent years compared with the situation with national currencies in the early 1990s is discussed.

The currency crisis in the early 1990s should be viewed against the backdrop of the German Reunification combined with macroeconomic imbalances in a number of the countries participating in the ERM. The Reunification was accompanied by several years of strong economic growth, government budget deficits and elevated inflation in Germany, which led to relatively high German interest rates. This did not fit in with the cyclical positions of the other ERM members, especially the countries that had built up serious macroeconomic imbalances. This instigated a feeling in the market that existing central rates were unsustainable and gave rise to massive speculative pressures against certain currencies and eventually the entire ERM.

The financial and sovereign debt crisis in recent years came in the wake of a deep global economic and financial crisis that erupted in 2008. Most countries implemented considerable fiscal expansionary

measures to mitigate the negative effects of the crisis on output and employment. However, several countries soon realised that they did not have sufficient fiscal scope for such expansion, and for a number of euro area member states facing macroeconomic imbalances, the financial crisis developed into an outright sovereign debt crisis.

A common feature of the two crises is that several European countries failed to address the macroeconomic imbalances during the years of strong economic growth ahead of the crisis. Another common feature is that the imbalances built up over a number of years before the crisis erupted. Therefore, the lesson learnt from both crises is that it is important to monitor and correct macroeconomic imbalances in time to prevent systemic risks.

The launch of the euro largely eliminated yield spreads between the euro area member states. At first, this gave the countries facing macroeconomic imbalances more time to address the problems before the imbalances were reflected in long-term interest rates and without an increase in short-term interest rates, which were now determined by monetary policy for the euro area overall. However, the improved framework for correcting imbalances was not used, and the euro area systems for overseeing and preventing government budget deficits and other macroeconomic imbalances turned out to be inadequate. This was part of the reason why the imbalances were allowed to accumulate to a much higher level than had been the case before the crisis in the early 1990s.

The financial and sovereign debt crisis disclosed a clear need to strengthen the political cooperation between the euro area member states, which is reflected in recent years' initiatives concerning better surveillance of macroeconomic imbalances, the fiscal compact and a banking union.

MACROECONOMIC BACKGROUND

The currency crisis in the early 1990s should be viewed against the backdrop of the unusual situation following German Reunification combined with macroeconomic imbalances in a number of the countries participating in the European Exchange Rate Mechanism, cf. Buiter et al. (1998). The Reunification was accompanied by several years of strong economic growth and government budget deficits in Germany, but also relatively high inflation by German standards, partly because public expenditure relating to the Reunification was not fully tax-funded. The high German interest rates did not fit in with the cyclical positions of other ERM members, especially the countries that had built up serious

macroeconomic imbalances. The German central bank, Deutsche Bundesbank, maintained that its interest-rate decisions would be based on German and not European needs. This instigated a feeling in the market that existing central rates were unsustainable, which led to massive speculative pressures against certain currencies and eventually the entire European Exchange Rate Mechanism.

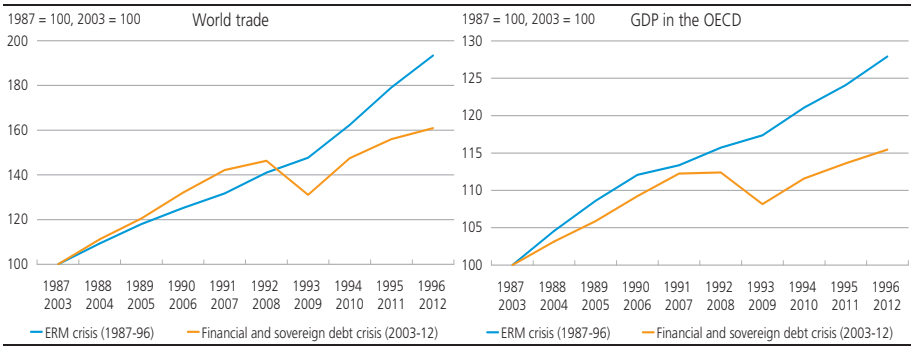
Despite the focus on banking crises and bank closures in the European countries in the late 1980s and the early 1990s, the period was not generally dominated by systemic banking crises in Europe. However the late 1980s and the early 1990s in particular, Norway, Sweden and Finland experienced outright systemic crises during which large parts of the banking sector, including several major nationwide banks, became distressed, cf. the Ministry of Economic Affairs (1994).

In contrast, the financial and sovereign debt crisis in recent years came in the wake of the global economic and financial crisis that erupted in 2008. This was a very serious worldwide real-economic crisis compared with the ERM crisis, cf. Chart 1.

The financial and sovereign debt crisis broke out after a period of strong growth in most European countries and affected all EU member states to a greater or lesser degree. Most countries introduced massive fiscal expansion to mitigate the negative effect of the crisis on output and employment, but several countries soon realised that their fiscal scope was not sufficient to pursue such active fiscal policy. This meant that financial markets began to focus more intensely on government budget deficits and government debt, and for a number of euro area member states facing macroeconomic imbalances, the financial crisis developed into an actual sovereign debt crisis. This again contributed to escalation of the financial crisis, as uncertainty over the resilience of the

DEVELOPMENT IN REAL WORLD TRADE AND REAL GDP IN THE OECD COUNTRIES

Chart 1



Note: World trade comprises both goods and services. Adjustment has been sought for data breaks. 2012 is a forecast.
Source: IMF, *World Economic Outlook*, OECD, *Economic Outlook* and OECD, *Main Economic indicators*.

banking sector arose, particularly in the countries that were directly affected by the sovereign debt crisis.

SPECULATIVE ATTACKS AND CONTAGION EFFECTS

Though this article points out a number of fundamental economic causes of both the ERM crisis in the early 1990s and recent years' financial and sovereign debt crisis, it cannot be ruled out that factors of a more speculative nature have also played a role. This applies not least to the timing of events during the crises.

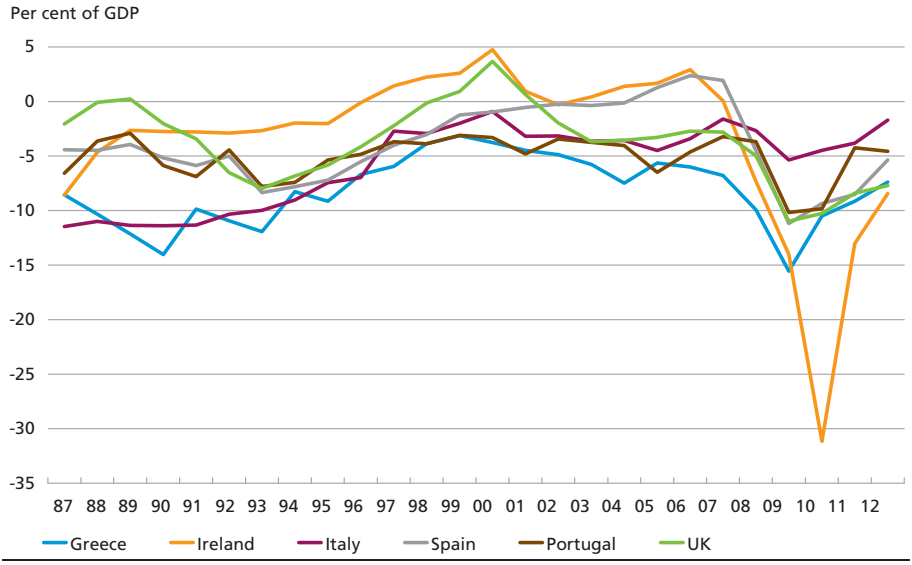
Eichengreen et al. (1993) report the results of a questionnaire survey of 132 European currency dealers in February 1993. Almost half of the respondents stated that they did not consider the need for an imminent change of ERM central rates until immediately after Danish voters' rejection of the Maastricht Treaty in the June 1992 referendum. After the referendum, the future of the EMU was suddenly more uncertain. The belief in a fast and smooth path towards a single currency was further shaken when opinion polls suggested uncertainty about the outcome of the French referendum in September 1992. The Yes camp in France only won by a narrow majority, which did not strengthen the confidence in fast realisation of the EMU plans. It is possible that this could have contributed to the pressure against the currencies in the ERM in 1992-93.

Likewise, the financial and sovereign debt crisis in recent years can hardly be explained entirely by economic fundamentals. Metiu (2012) finds that there have been considerable contagion effects in the government bond markets from Greece to Belgium, France, Portugal and Spain, from Spain to Italy and from Ireland and Portugal to Greece. Furthermore, Di Cesare et al. (2012) estimate that 250 basis points of the Italian yield spread at end-August 2012 could not be explained by economic fundamentals. Part of the excess yield spread is, according to the analysis, attributable to investors discounting the risk of discontinuation of the euro in the Italian interest rate level. Likewise, IMF (2012) concludes that around 200 basis points of Italian and Spanish yield spreads to Germany in the 1st half-year of 2012 could not be explained by economic fundamentals. The corresponding figure for Portugal was more than 500 basis points.

FISCAL POLICY

A common feature of the two crises is that during the boom years before of the crisis, a number of European countries ran substantial gov-

GOVERNMENT BUDGET BALANCE Chart 2



Note: 2012 is a forecast.
Source: OECD, *Economic Outlook*.

ernment budget deficits and failed to consolidate public finances sufficiently, cf. Chart 2. Though Spain and Ireland showed government surpluses in the years up to the most recent crisis, both countries underestimated the strength of the upswing, so their structural budget balances were generally assessed to be better than was actually the case.

In step with increasing uncertainty over whether the EMU plans would be realised, the foreign-exchange markets focused attention on economic fundamentals in the early 1990s. Only a few EU member states met the criteria for participation in Stage Three set out in the Maastricht Treaty as regards government budget balance and government debt, cf. Table 1, and the slowdown in economic activity in several countries caused by the crisis made fiscal tightening more difficult.

Differences in the individual European countries' budget and debt situations were reflected in considerable differences in long–term government bond yields. However, the long-term yield spreads also reflected that the exchange-rate stability characterising the ERM from 1987 to the outbreak of the currency crisis was largely obtained through wide short-term yield spreads to Germany for certain countries, cf. Table 2.

During the most recent financial and sovereign debt crisis, it has also been evident that developments in public finances leading up to the crisis were unsustainable in a number of countries, cf. Agerholm et al. (2012). These countries had not taken advantage of the favourable eco-

CONVERGENCE SITUATION IN THE ERM COUNTRIES 1991 Table 1

	Date of ERM participation	Fluctuation band Per cent	Inflation	Govern-ment budget balance	Govern-ment debt	Bond yield
			Per cent	Per cent of GDP		Per cent
Belgium	13 March 1979	+/- 2.25	3.2	-6.4	129.4	9.3
Denmark	13 March 1979	+/- 2.25	2.4	-1.7	66.7	9.3
France	13 March 1979	+/- 2.25	3.1	-1.5	47.2	9.0
Netherlands	13 March 1979	+/- 2.25	3.9	-4.4	78.4	8.8
Ireland	13 March 1979	+/- 2.25	3.2	-4.1	102.8	9.4
Luxembourg	13 March 1979	+/- 2.25	3.1	2.0	6.9	9.3
Germany	13 March 1979	+/- 2.25	3.5	-3.6	45.6	8.4
		+/- 6				
Italy	13 march 1979	+/- 2.25	6.4	-9.9	101.2	11.3
Spain	19 June 1989	+/- 6	6.0	-3.9	45.6	12.5
UK	8 October 1990	+/- 6	5.9	-1.9	43.8	10.3
Portugal	6 April 1992	+/- 6	11.4	-5.4	64.7	14.6
Convergence criteria .			4.4	-3.0	60.0	11.2

Note: The fluctuation band for Italy was reduced from +/- 6 per cent to +/- 2.25 per cent from 8 January 1990. According to the Maastricht Treaty, the convergence criteria for the transition to stage three are: 1. A maximum budget deficit of 3 per cent of GDP, and the government debt ratio may not exceed 60 per cent of GDP. 2. Inflation measured by growth in consumer prices on the year-earlier month may, over a period of one year ahead of the survey, not exceed the – maximum three – best performing member states by more than 1.5 percentage points in terms of price stability. 3. Long-term government bond yields or interest rate on similar securities may, on average for a period of one year before the survey, not exceed the – maximum three – best performing member states in terms of price stability by more than 2 percentage points. 4. The member state must have complied with the normal ERM fluctuation bands for at least two years without serious tensions, including unilateral devaluation.

Source: European Commission and OECD.

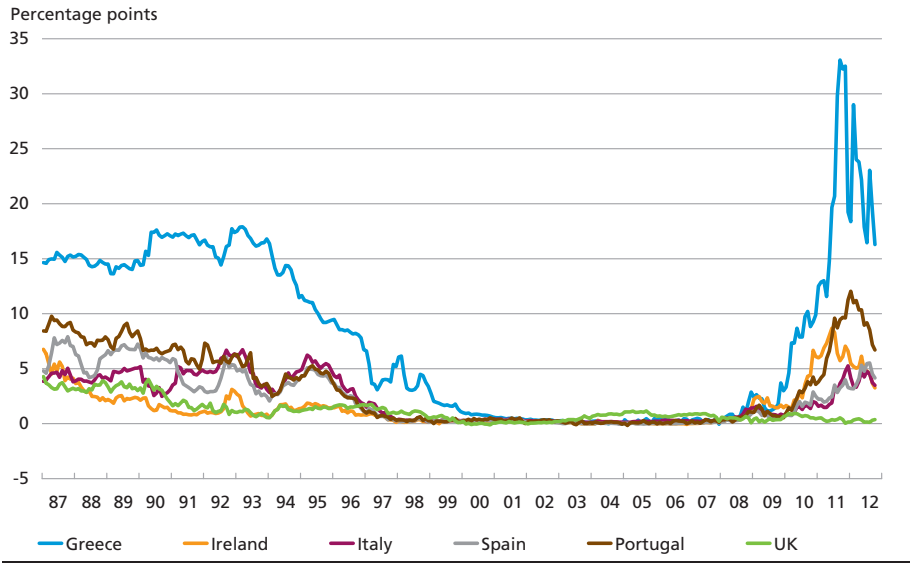
SHORT-TERM YIELD SPREADS TO GERMANY Table 2

Percentage points	1987	1988	1989	1990	1991
Denmark	6.1	4.2	2.5	2.4	0.4
Belgium	2.9	2.3	1.4	1.2	0.0
Luxembourg	2.7	2.8	2.9	1.2	-0.2
Netherlands	1.2	0.4	0.2	0.0	-0.1
France	4.4	3.6	2.2	1.7	0.2
Ireland	6.8	3.5	2.5	2.6	1.1
Italy	6.8	6.5	4.9	3.0	2.2
Spain	10.4	6.4	6.3	5.9	3.3
UK	5.2	5.5	6.2	5.6	1.5
Portugal	9.6	8.0	5.6	4.6	6.2

Note: Annual averages.

Source: Danmarks Nationalbank and IMF, *International Financial Statistics*.

LONG-TERM YIELD SPREADS TO GERMANY Chart 3



Note: Month-end data for 10-year government bonds. Regarding Greece, the yield on Treasury bills is applied before September 1992.
Source: Reuters EcoWin, IMF, *International Financial Statistics* and Danmarks Nationalbank.

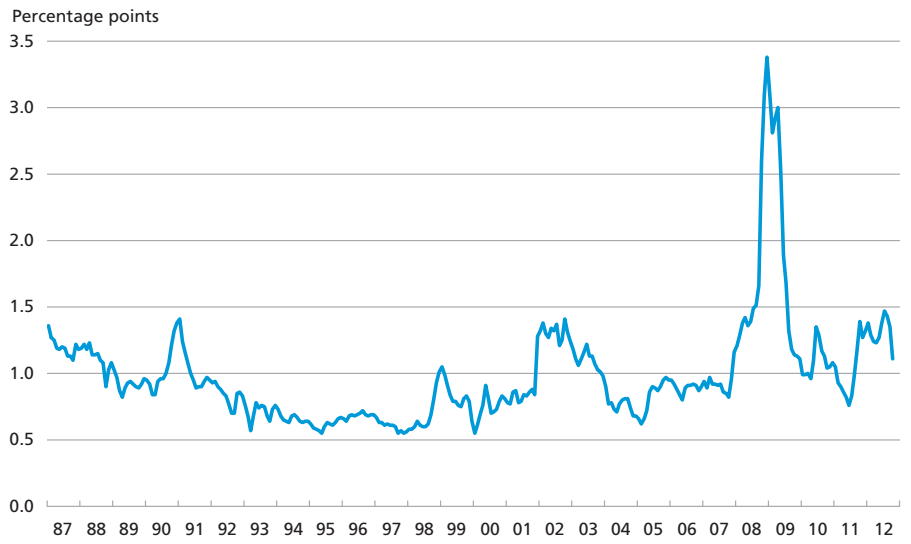
nomic conditions ahead of the crisis to consolidate public finances and were therefore caught in an unfavourable position when the crisis broke out. Still, most countries eased fiscal policy in 2009 as part of coordinated efforts in the EU to offset the negative impact of the financial crisis on growth and unemployment. This caused further deterioration of public finances, and for a number of euro area member states, it led to an outright sovereign debt crisis. In many countries, fiscal expansion during the boom immediately before the crisis was replaced by extensive consolidation. Thus, fiscal policy contributed to reinforcing the cyclical fluctuations rather than allaying them.

It has been characteristic of the years before the most recent financial and sovereign debt crisis that the differences in fiscal sustainability between the individual member states were not reflected markedly in long-term government yield spreads, not even in the countries most severely hit by the sovereign debt crisis, cf. Chart 3.

This should be viewed in light of the launch of the euro, which apparently removed the exchange-rate uncertainty in the euro area, cf. Sinn (2010). This led to substantial capital flows from the surplus member states to Greece, Ireland, Italy, Spain and Portugal, which – viewed in isolation – exerted downward pressure on interest rates in these countries. However, it is worth noting that the late 1990s were characterised by a global reduction in risk premia in the financial markets, cf. Chart 4.

CREDIT SPREAD BETWEEN US BAA-RATED CORPORATE BONDS AND US TREASURIES

Chart 4



Source: Federal Reserve Bank of St. Louis, *FRED Database*.

MACROECONOMIC IMBALANCES

In the early 1990s, unemployment was high in countries such as Ireland, Italy, Spain and the UK compared with Germany, cf. Table 3, and during the currency crisis, the foreign-exchange markets questioned the competitiveness of several ERM countries in the long term and thus the credibility of the central rates. Since 1987, unit labour costs had risen relatively steeply in the UK, Italy, Portugal and Spain compared with Germany, cf. Chart 5, and the currencies of these countries were also among those exposed to strong devaluation pressures during the currency crisis. In relation to Chart 5, it should be mentioned that the UK, Portugal and Greece did not join the ERM until 1990, 1992 and 1998, respectively.

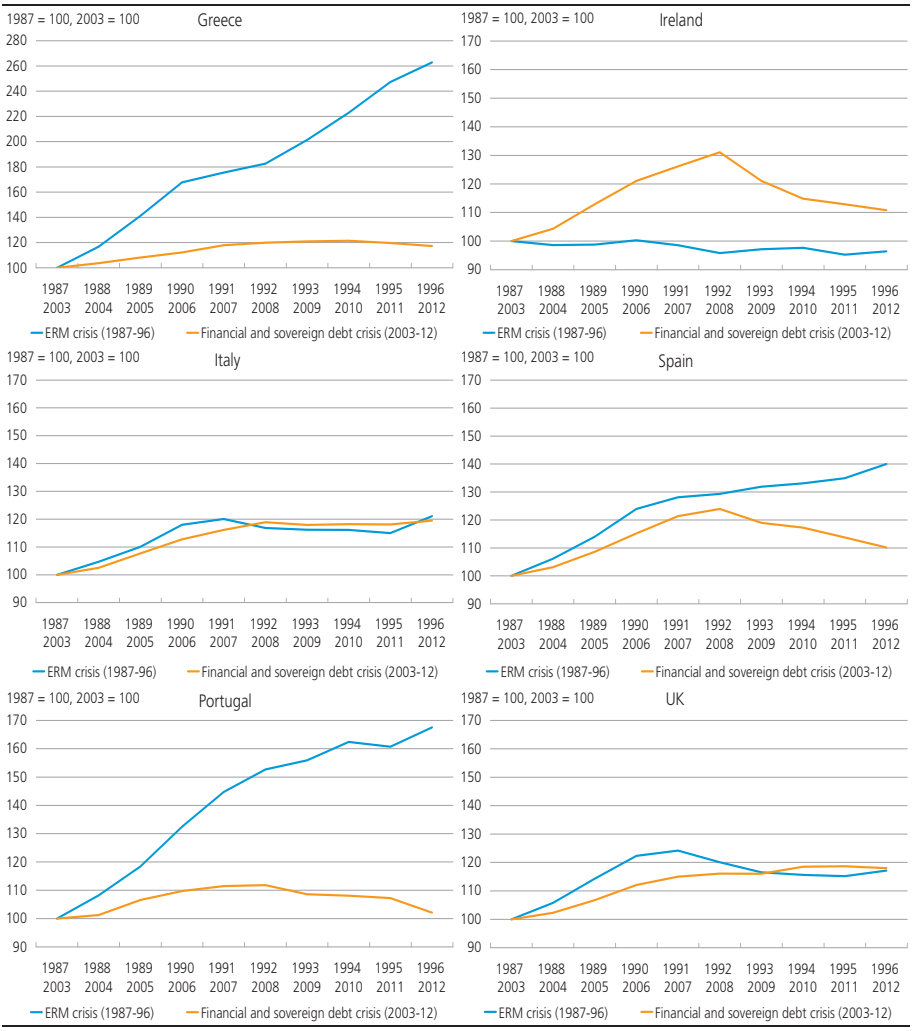
UNEMPLOYMENT

Table 3

Per cent of labour force	1987	1988	1989	1990	1991	1992	1993
Greece	7.8	8.1	7.9	7.4	8.1	9.0	10.0
Ireland	16.9	16.5	15.2	13.0	14.7	15.3	15.9
Italy	10.3	10.5	10.2	9.1	8.6	8.7	9.7
Portugal	7.3	5.9	5.2	4.8	4.3	4.1	5.5
Spain	16.4	14.5	12.6	12.1	12.2	13.5	17.2
UK	10.4	8.6	7.2	7.1	8.8	9.9	10.4
Germany	5.8	5.8	5.2	4.5	5.3	6.2	7.5

Source: OECD, *Economic Outlook*.

UNIT LABOUR COSTS RELATIVE TO GERMANY Chart 5



Note: Unit labour costs in national currencies. Adjustment has been sought for data breaks. 2012 is a forecast.
Source: OECD, *Economic Outlook*.

Norway, Sweden and Finland were neither members of the EC nor the ERM in the early 1990s, but during 1990 and 1991, all three countries had pegged their currencies unilaterally to the ecu.[1] During the currency crisis, all three currencies were exposed to pressure, and the unilateral peg to the ecu had to be abandoned. The recession in Finland was reinforced by the collapse of trade with the former Soviet Union and erosion of competitiveness as a consequence of steeply rising costs in the preceding years. Sweden was also ex-

[1] Ecu was a currency basket composed of fixed amounts of each EC currency.

periencing an economic crisis following a period of rising wage costs. Add to this that Sweden ran large and to some extent structural budget deficits.

In an analysis of the currency crisis in the early 1990s, Eichengreen (2000) presented a model of a country's vulnerability to pressure against the currency based on developments in export market growth, real exchange rate and current account deficit as percentages of the gross domestic product, GDP. According to the model, Finland, Spain, Sweden, the UK and Italy were the five countries most likely to be subject to pressure against their currencies, and all these currencies did actually come under pressure during the crisis. The pressure against pound sterling intensified as the foreign-exchange market clearly expected that – in light of the weak domestic economic performance and widespread use of variable-rate home loans – the UK was not prepared to raise interest rates notably to defend its exchange rate.

However, the model in Eichengreen (2000) did not indicate that the currencies of Portugal, Ireland and Norway were in great danger of coming under pressure, which was actually what happened. The pressure against the Portuguese escudo may be considered a "contagion effect" from the pressure against the Spanish peseta, cf. Lopes and Nunes (2012), and for Ireland, the pressure against the currency should be viewed in light of Ireland's considerable trade with the UK, which decided to leave the ERM and allow sterling to depreciate. The pressure against the Norwegian krone could possibly be considered a contagion effect from the pressure against the Swedish krona. Note, however, that in the late 1980s and early 1990s in particular, Norway, like Sweden and Finland, saw an outright systemic crisis during which large parts of the banking sector faced difficulties in the wake of explosive lending in the mid-1980s.

Prior to the financial and sovereign debt crisis, structural unemployment was high in a number of countries, particularly in Spain, but also in Greece, Italy and Portugal, cf. Guichard and Rusticelli (2011). Moreover, systemic risks built up in the economy in general and the financial sector in particular during the years ahead of the financial crisis amid a strong upswing, high lending growth and private indebtedness as well as rising house and equity prices, cf. Charts 6 and 7.

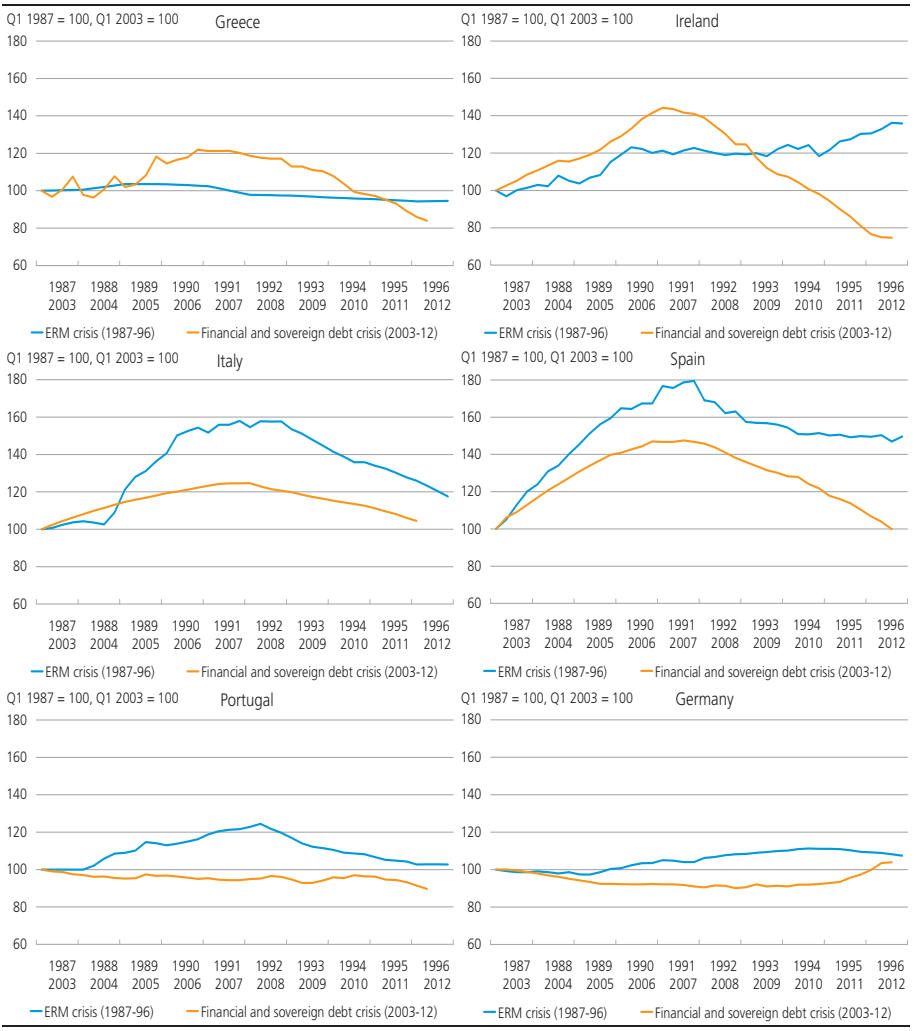
Moreover, before the financial and sovereign debt crisis several euro area member states, particularly Greece, Portugal and Spain, built up very large and unsustainable current account deficits, financed by capital inflows from surplus countries such as Germany, the Netherlands, Finland and Austria, cf. Chart 8.

BANK LENDING AS A RATIO OF GDP Chart 6

Source: World Bank.

The current account deficits reflected a sharp increase in domestic demand, which was to some extent driven by excessively complacent fiscal policy, and the capital inflows did not spur sufficient productivity-promoting investment in the deficit countries. Combined with inflexible labour markets, this development led to substantial wage increases that were out of keeping with the underlying productivity growth. This eroded competitiveness, which – viewed in isolation – worsened the current account deficit. Ultimately, the deficit member states' ability to honour future public and private debt obligations was questioned, cf. Blomquist and Christensen (2010).

REAL HOUSE PRICES Chart 7

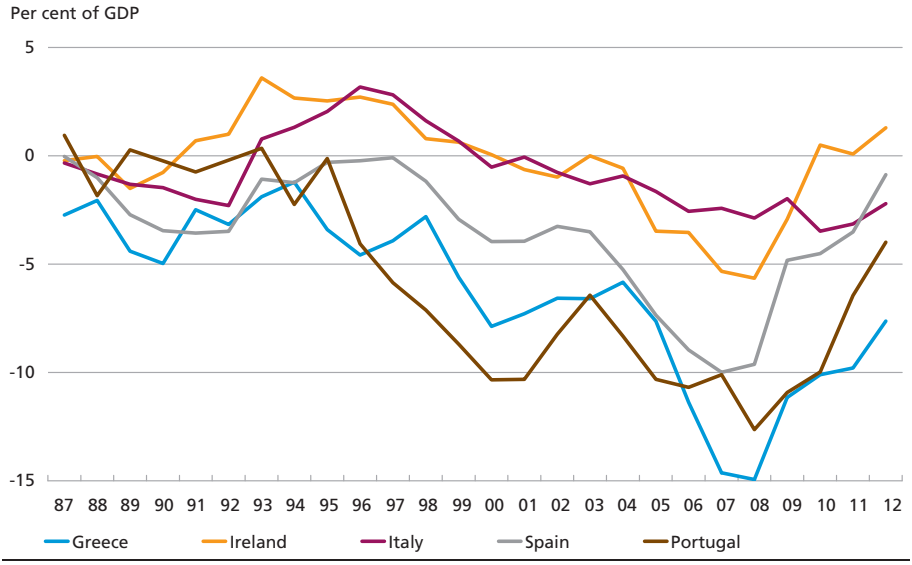


Note: House prices are deflated by the consumption deflator.
Source: OECD, ECB, IMF and Takáts (2010).

PAN-EUROPEAN CRISIS MANAGEMENT

During the currency crisis in the early 1990s, intervention in the foreign-exchange market took place according to the ERM rules through purchase of weak currencies and sale of strong currencies with a view to keeping the currencies within the agreed fluctuation bands. In some cases, concerted intervention took place, implying that several member states intervened simultaneously. The ERM, moreover, included an agreement on mutual provision of unlimited intervention credit in case of intervention at the fluctuation limits, cf. Abildgren et al. (2010).

CURRENT ACCOUNT Chart 8



Note: 2012 is a forecast.
Source: OECD, *Economic Outlook*.

However, intervention is a tool that can only be applied to address temporary pressures against a currency in a fixed exchange-rate system. In case of more sustained pressures, there is a need for interest-rate changes and possibly other economic policy measures. Among the "weak" ERM currencies, there was general dissatisfaction in the 1980s and the early 1990s that it was always the "weak" currencies that were required to meet currency pressures by raising interest rates, while it was never the "strong" currencies (such as the Deutschemark) that were to be aligned to the other currencies via interest-rate cuts. On the other hand, the member states with "strong" currencies found that the member states with "weak" currencies lacked political commitment to adjust their general economic policies to the stability-oriented line required by a fixed-exchange-rate system.

The currency crisis in the early 1990s culminated by a widening of the ERM fluctuation bands to +/- 15 per cent in August 1993. In reality, this meant immediate suspension of the fixed-exchange-rate system in force during the previous couple of decades, a system that had been the cornerstone of EC cooperation since the establishment of the currency snake in 1972. Though the participants agreed that central rates among the core member states in the early 1990s matched the economic fundamentals, several countries were unwilling to defend the previous fluctuation bands and counter the crisis applying the existing rules. It was also evident that a number of member states had not succeeded in pursuing

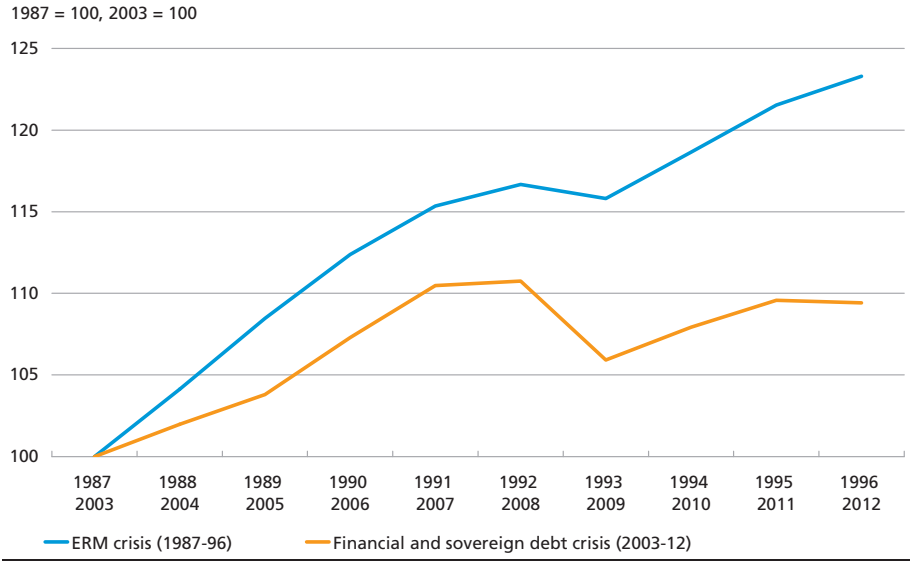
economic policies that prevented the build-up of serious macroeconomic imbalances and labour cost developments that were incompatible with the participation in a fixed-exchange-rate system.

Developments in the years following August 1993 when the exchange rates of the core member states again approached the central rates showed that the right economic conditions for these countries had been in place. This relatively soon restored confidence in a smooth movement towards the launch of a single European currency (EMU), which had already been planned before the crisis. As late as in 1996, it was not expected that 11 member states would be able to meet the convergence criteria for government budgets already at the time of selection in 1998. It should be noted that confidence in the EMU process contributed to sharp interest rate declines in countries with wide yield spreads to Germany, which per se contributed to consolidation of government budgets until 1997. The consolidation was sufficient for all member states that met the exchange-rate criterion and wanted to participate from the start in 1999 to be able to meet the convergence criteria. However, the requirement for gross government debt was interpreted loosely, as Belgium and Italy had gross government debt of more than 100 per cent of GDP, and several other countries had a debt exceeding 60 per cent of GDP.

Though the currency crisis in the early 1990s presented a serious challenge to the European exchange-rate system, the real-economic consequences of the crisis for Europe do not at all compare to the real-economic implications of the most recent global economic and financial crisis, cf. Chart 9. The most recent crisis has therefore, so it seems, required much more in terms of pan-European crisis management and new initiatives than the crisis in the early 1990s.

During the financial crisis the European Central Bank, ECB, has implemented a variety of extraordinary measures to enhance certainty of access to liquidity among euro area banks. Thus, the ECB began making full allotment of the bids received at a fixed rate at the weekly open market operations. Moreover, the ECB allowed euro area banks to raise loans with a significantly longer maturity than at the weekly main refinancing operations. At an early stage of the financial crisis, the ECB cut interest rates as part of a coordinated action with the US Federal Reserve and the Bank of England, among others, and during the financial crisis, the ECB's monetary-policy interest rates have been cut to historically low levels. The ECB and the Federal Reserve moreover agreed to ensure dollar liquidity for euro area banks and established recommendations for the structure and pricing of government guarantees and capital injections into the banking sector in the euro area.

DEVELOPMENT IN REAL GDP IN EU15 Chart 9



Note: Adjustment has been sought for data breaks. 2012 is a forecast.
Source: OECD, *Economic Outlook*.

In response to the financial crisis, the European Systemic Risk Board, ESRB, was set up in early 2011. The purpose of the ESRB is to help prevent and reduce systemic risks in the financial system in the EU, and ESRB can issue warnings or recommendations, cf. Madsen and Mogensen (2009). The ECB was one of the driving forces behind the establishment of the ESRB, and the ECB provides analytical, statistical, administrative and logistic support for the ESRB. Moreover, the ECB will chair the ESRB during the first five years. Finally, the ECB (and the European Commission) participates in international fora, such as G20, for the discussion of the regulatory follow-up on the financial crisis.

The sovereign debt crisis in certain euro area member states has also given rise to pan-European initiatives. In 2010, a major temporary loan facility was set up (European Financial Stability Facility, EFSF, which was gradually replaced by the permanent facility, European Stability Mechanism, ESM) for euro area member states facing financing difficulties due to necessary government guarantees from the euro area member states.

The more general economic-political cooperation among euro area member states and other EU member states has also been reinforced as a consequence of the sovereign debt crisis. Against this backdrop, a new procedure for the prevention and correction of macroeconomic imbalances in the EU member states was introduced at end-2011, cf. Box 1. Furthermore, euro area member states and the other EU member states

PROCEDURE FOR SURVEILLANCE OF MACROECONOMIC IMBALANCES Box 1

The period ahead of the financial crisis was dominated by the build-up of macroeconomic imbalances in many euro area member states. As a consequence, the European Council set up a working group in March 2010, intended to identify the need for strengthening the economic cooperation, cf. Gade and Thuesen (2010). In December 2011, this led to a new surveillance procedure of macroeconomic imbalances, comprising a preventive and a corrective arm.

The early warning system should identify countries with a risk of imbalances. It comprises a scoreboard based on surveillance of ten indicators: Current account, foreign debt, export market share, unit labour costs, real effective exchange rate, house prices, private sector borrowing, private sector debt, government debt and unemployment rate. Trends in the indicators are compared with the stated threshold values as well as other relevant information and overall, this provides the basis for an annual report to be discussed in the European Council. On the basis of this report, the European Commission decides whether further investigation of the individual euro area member states is necessary to disclose any imbalances.

If, on the basis of these investigations, the Commission finds the situation problematic, the Commission will present policy proposals for the relevant member states under the corrective arm. If the imbalances are considered to be unusually serious, the Commission will recommend that the European Council implement the correction mechanism. The member states in question are therefore committed to present detailed plans for correcting the imbalances. If the countries do not present plans that are sufficiently comprehensive or do not subsequently realise the plans, the Economic Council will impose sanctions unless a qualified majority opposes. The member states will be measured on the implementation of the programme items and not on whether the indicators are within the threshold values.

(except for the UK and the Czech Republic) entered into an intergovernmental agreement on strengthening fiscal cooperation through a fiscal compact. The fiscal compact implies that the member states are committed to incorporating a fiscal rule in their national legislation to ensure that the general government budgets should be balanced or in surplus. The rule entails a cap on the countries' annual structural deficit of 0.5 per cent of GDP, and the rule must include a correction mechanism that is automatically triggered in the event of deviation from this cap. Also, a higher degree of automatic sanctions are introduced in the EU excessive deficit procedure.[1] Finally, at the summit at end-June 2012, the euro area member states reached agreement on the establishment of a single banking supervisory mechanism and the scope for direct recapitalisation of crisis-ridden banks in the euro area via the ESM.

Table 4 summarises the differences and similarities between the ERM crisis in the early 1990s and the fiscal and sovereign debt crisis in recent years.

[1] As set out in the Stability and Growth Pact from 1997, only the euro area member states can be sanctioned if they fail to correct an excessive budget deficit.

COMPARISON OF THE ERM CRISIS WITH THE FINANCIAL AND SOVEREIGN DEBT CRISIS

Table 4

	ERM crisis in the early 1990s	Recent years' financial and sovereign debt crisis
Systemic banking crisis	Only in Norway, Sweden and Finland.	In many European countries.
Real-economic crisis	Moderate economic setback in Europe.	Deep global economic and financial crisis.
Fiscal policy	Lack of consolidation of public finances in certain countries during the booming years ahead of the crisis.	Lack of consolidation of public finances in certain countries during the booming years ahead of the crisis.
Macro-economic imbalances	Built up over a number of years ahead of the crisis, particularly regarding developments in unit labour costs, real house prices and the current account.	Built up over many years ahead of the crisis, particularly regarding developments in unit labour costs, credit relative to GDP, real house prices and especially the current account.
Pan-European crisis management	Coordinated intervention in the foreign-exchange market, intervention credits and widening of the ERM fluctuation bands to +/- 15 per cent in August 1993.	The ECB has implemented extraordinary measures to increase certainty among euro area banks as to access to liquidity, the ESRB has been established with a view to preventing and reducing systemic risks in the financial system, loan facilities have been set up for euro area member states facing difficulties with financing (EFSF/ESM), a new procedure for the prevention and correcting macroeconomic imbalances has been introduced, the fiscal cooperation has been strengthened via a fiscal compact, and it has been agreed to work towards establishing a new single supervisory mechanism for banks.

HAS THE LAUNCH OF THE EURO AFFECTED THE CRISIS DYNAMICS COMPARED WITH THE EARLY 1990S?

It is always difficult to perform counter-factual analyses and e.g. assess the potential development of recent years' crisis, had the euro not been launched. The imbalances that built up in the European economies ahead of the financial and sovereign debt crisis were not addressed in time. As appears from this article, the crisis in the early 1990s was also a result of imbalances that had built up over many years before the crisis.

The launch of the euro largely eliminated yield spreads between the euro area member states. At first, this gave the countries facing macro-economic imbalances more time to address the problems before the imbalances were reflected in long-term interest rates and without an increase in short-term interest rates, which were determined by monetary policy for the euro area overall. However, the improved framework

for correcting imbalances was not utilised, and the euro area systems for monitoring and preventing government budget deficits and other macroeconomic imbalances turned out to be inadequate. This was part of the reason why the imbalances were allowed to become much more serious that had been the case ahead of the crisis in the early 1990s.

If national currencies had not been replaced by the euro in 1999, the financial and sovereign debt crisis could very well have been followed by a currency crisis. It is also possible that the sovereign debt crisis would have taken a far more dramatic path, leading to disorderly sovereign defaults, without the variety of pan-European initiatives to solve the sovereign debt crisis that were the result of the economic-political co-operation between the euro area member states.

Conversely, the establishment of the euro area may have contributed to increasing the financial integration between the member states and hence heightened the risk of contagion effects of banking crises across national borders, cf. ECB (2012).

Therefore, the lesson learnt from the ERM crisis in the early 1990s and recent years' financial and sovereign debt crisis is that it is important to redress macroeconomic imbalances in time to prevent the emergence of systemic risks. Also, the financial and sovereign debt crisis disclosed an obvious need to strengthen the political cooperation between the euro area member states, which is reflected in the initiatives in recent years concerning surveillance of macroeconomic imbalances, the fiscal compact and a banking union.

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The Process towards an EU/IMF Loan Programme and a Debt Restructuring

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INTRODUCTION AND SUMMARY

In recent years, Greece, Ireland and Portugal have received financial assistance from the EU and the International Monetary Fund, IMF. Most recently, Cyprus has submitted a request for a loan, just as Spain has received financial assistance from the euro area member states for recapitalisation of the Spanish banking sector. For the countries that have requested loans, a common denominator is that a trigger event has led to loss of confidence in the of the sovereign debt sustainability of the country in question. A combination of growing market pressures and debt approaching maturity has driven the countries' requests for loans.

Based on the cases of Greece, Ireland and Portugal, a typical timeline is established for the process towards the adoption of the EU and IMF loan programmes. Experience from the three countries shows that the duration from the trigger event to adoption of the final programme was 3-10 months. The timeline also provides a perspective on the processes towards Cyprus's request for a loan and Spain's loan from the euro area member states to recapitalise the banking sector.

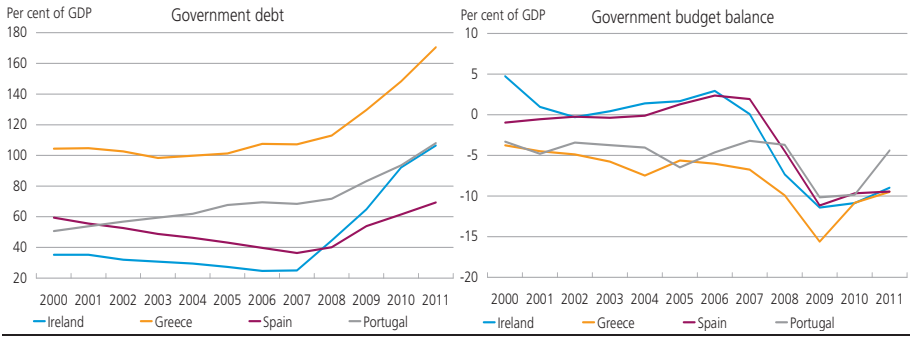
When financial assistance is provided, debt restructuring may be necessary if the debt is assessed to be unsustainable in the medium term under the programme. On the basis of previous debt restructuring processes, a stylised process from announcement to implementation of restructuring is established. This timeline is used to describe Greece's debt restructuring process. For Greece, nine months elapsed from the announcement of the restructuring in July 2011 until its final implementation in April 2012, which is a relatively short time by historical standards.

THE PROCESS TOWARDS AN EU/IMF PROGRAMME

During the financial crisis, the EU and the IMF have made loan facilities available to a number of European countries affected by the economic

GOVERNMENT DEBT AND BUDGET BALANCE FOR SELECTED EURO AREA MEMBER STATES

Chart 1



Note: The costs of recapitalisation of the banking sector in 2009, 2010 and 2011 have been deducted from Ireland's government budget balance. Without this adjustment, Ireland's budget deficit in the three years amounts to 13.9, 30.9 and 9.0 per cent of GDP, respectively.

Source: European Commission.

crisis. The first wave of European requests for financial assistance in 2008-09 came from emerging economies. The second wave came from euro area member states with unsustainable debt levels in the wake of the downturn that followed the economic and financial crisis, cf. Chart 1.

A common feature of the high-debt countries is that they failed to implement sufficient fiscal and structural adjustments in the years leading up to the crisis. The fiscal challenges were amplified by a recession and rising government bond yields. Problems in the banking sector were another significant driver of the crisis in a number of these countries. The combination of banks' aggressive credit policies and property market bubbles thus made Ireland and Spain, among others, vulnerable.

The EU and the IMF approved loans to Greece, Ireland and Portugal in 2010-12, cf. Table 1. Moreover, in July 2012 euro area member states agreed to provide a loan for recapitalisation of Spanish banks. A tranche

CURRENT IMF/EU PROGRAMMES IN EURO AREA MEMBER STATES[1]

Table 1

Billion euro	Adoption of programme	Expiry of programme	IMF loan	EU loan	Total loan package	Total loan as a ratio of GDP
Greece I	May 2010	(May 2013)	30.0	80.0	110.0	49.5
Ireland[2]	Dec 2010	Dec 2013	22.5	45.0	85.0	54.3
Portugal	May 2011	May 2014	26.0	52.0	78.0	45.6
Greece II[3]	Mar 2012	Mar 2016	28.0	144.7	172.7	82.8

Source: IMF, Eurostat, European Commission.

[1] Other EU member states are also receiving financial assistance from the EU or the IMF. The EU provides support to Romania and Spain, while the IMF provides loans to Romania and Poland.

[2] Besides the EU/IMF loans the total loan package to Ireland also includes a contribution from Ireland's liquidity reserves and a pension fund (17.5 billion euro).

[3] The current loan programme for Greece, which was adopted in March 2012, replaced the first programme from May 2010, which is thus no longer active. Only part of the loan package of 110 billion euro was disbursed within the programme's lifetime.

IMF AND EU LOAN FACILITIES APPLIED TO EURO AREA MEMBER STATES Box 1

IMF

- *Stand-by Arrangement, SBA (Greece I)* – SBAs are available for countries with short-term balance of payments problems. Disbursements are conditional upon implementation of an economic policy programme to be agreed with the IMF. SBA is the IMF's most frequently used facility for advanced and middle-income countries.
- *Extended Fund Facility, EFF (Ireland, Portugal, Greece II)* – The EFF supports member countries with medium or long-term balance of payments difficulties and structural challenges that take longer to address. The duration of EFF programmes is therefore typically longer than that of SBAs, and the repayment period can be longer as well.

EU

- *Bilateral loans (Greece I, Ireland)* – When the first programme to Greece was approved, neither the EFSM nor the EFSF, see below, had been established yet, and the EU assistance was instead provided as bilateral loans from euro area member states. Moreover, Ireland received bilateral loans from the UK, Sweden and Denmark.
- *European Financial Stabilisation Mechanism, EFSM (Ireland, Portugal)* – The EFSM was established in May 2010 and is available to all EU member states in connection with an EU/IMF programme. Loans under the EFSM are approved by the EU Ministers of Finance and administered by the Commission. The maximum credit facility is 60 billion euro, and the loans are guaranteed via the EU budget.
- *European Financial Stability Facility, EFSF (Ireland, Portugal, Greece II)* – the EFSF is a temporary facility to support financial stability in the euro area. It was established in May 2010 and expires in June 2013. Loans are approved by the euro area Ministers of Finance and guaranteed by the euro area member states. The loans are subject to implementation of economic policy conditions to be agreed in a Memorandum of Understanding (MoU).
- *European Stability Mechanism, ESM (Spain)* – the ESM is a permanent facility, which will replace the EFSF and provide loans to euro area member states. The ESM became operational on 8 October 2012 and is covered by guarantees as well as subscribed capital from euro area member states. ESM loans are approved by the euro area Ministers of Finance and are subject to implementation of economic-policy conditions agreed in an MoU. The total credit facility for the EFSF and the ESM is approximately 700 billion euro.

of 39.5 billion euro will be disbursed in December. Cyprus has submitted a request for EU and IMF loans, which has not yet been approved.

The IMF and EU loans to euro area member states are granted through various facilities, cf. Box 1. The loans are conditional on the countries' implementation of economic policy programmes. The troika, consisting of the IMF, the European Commission and the ECB, negotiates the terms of the economic programmes and monitors their subsequent implementation though joint missions and continuous sharing of information.

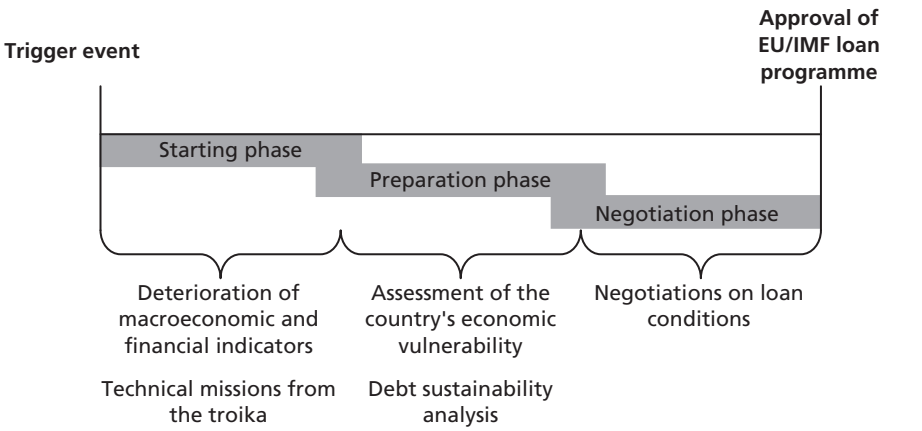
A timeline towards an EU/IMF programme

The IMF and the EU go through a number of stages from identifying that a member country has a financing gap that cannot be financed in the markets to approving a loan programme. Based on experiences from previous programmes to Greece, Ireland and Portugal, a stylised timeline is constructed for the process from the first signs of distress to an EU/IMF programme, cf. Chart 2.

The events leading to Greece, Ireland and Portugal requesting loans have certain common features. It is possible to identify a *trigger event*, such as the announcement of a considerably higher-than-expected budget deficit. Already before the trigger event, macroeconomic and financial indicators have typically shown signs of distress. The trigger event marks the beginning of the *starting phase* leading to an EU/IMF assistance programme. In the starting phase, the trigger event leads to increased loss of investor confidence, resulting in a self-reinforcing effect with consecutive credit downgrades and rising government bond yields.

The *preparation phase* begins with the macroeconomic and financial deterioration mentioned above. Already in this phase, the troika will typically send a team of experts to the country to assess the economic situation. Among other factors, the country's vulnerability can be assessed on the basis of key macroeconomic and financial variables and a number of market-related risk measures. Moreover, a detailed debt sustainability analysis will be performed, which can provide an indication of the financing gap, the need for macroeconomic adjustment and the size of any debt relief, cf. Box 2.

STYLISED TIMELINE FOR THE PROCESS TOWARDS AN EU/IMF LOAN PROGRAMME — Chart 2

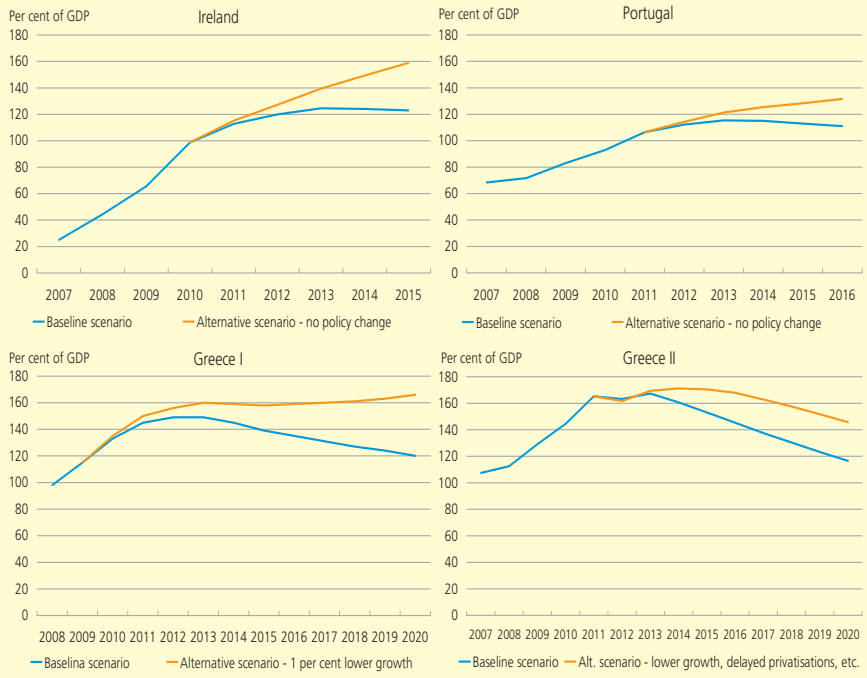


THE IMF'S DEBT SUSTAINABILITY ANALYSIS Box 2

The IMF carries out debt sustainability analyses, DSAs, as an element of its surveillance of member countries and in connection with its loan programmes. The IMF assesses both public sector debt and external debt as ratios of GDP in the medium term.

For countries requesting a loan from the IMF, sustainability is assessed in a baseline scenario under the assumption of full programme implementation. The analysis also comprises stress scenarios showing the debt path in the event of e.g. deterioration of the macroeconomic outlook or failure to implement the programme according to plan. Chart 3 shows the expected path of public sector debt in Greece, Ireland and Portugal at the time their programmes were approved in a baseline scenario and an alternative scenario.

EXPECTED DEVELOPMENT IN PUBLIC SECTOR DEBT Chart 3



Access to an exceptionally large IMF loan is subject to fulfilment of a number of criteria. Among other things, analysis must indicate that there is a high probability that public debt is sustainable in the medium term under the assumption of full programme implementation. However, this criterion was not met for the four programmes mentioned above. But the provisions were changed when Greece's first programme was approved, allowing deviation from this rule in special cases. This applies if the IMF finds that there is a considerable risk of systemic spillovers if the country's loan request is not approved. This made it possible to approve the loans for Greece, Ireland and Portugal.

[1] Source: IMF (2010a), IMF (2010b), IMF (2011) and IMF (2012a).

The preparation phase will often continue alongside the *negotiation phase*. At an early stage in the negotiation phase, the troika initiates a dialogue with authorities in countries that are potential recipients of a programme. Negotiation missions are carried out with the purpose of reaching agreement with the country about the economic policy programme to be implemented. The political situation and the support of the government, opposition, population and social partners for the necessary economic adjustments and reforms play a decisive role in the success of the negotiation phase. The troika may determine prior actions to be implemented by the country before the programme can be approved. At some point during the negotiation phase, the country officially requests a loan programme, and the negotiation phase ends with the approval of a programme from the EU and the IMF.

Experiences from euro area programmes

The time horizon for the different phases varies from programme to programme. Table 2 outlines the timeline from the trigger event in the starting phase to the time when the 10-year government bond yield rises to over 7 per cent and the programmes are approved for Greece, Ireland and Portugal, respectively. In addition, the timeline for the loan from euro area member states for recapitalisation of the Spanish banking sector is presented together with the preliminary timeline for Cyprus's request for a loan from the EU and the IMF.

For Greece, Ireland and Portugal, the duration from the trigger event to approval of the programme was 3-10 months. Naturally, the time horizon in Table 2 depends on the event chosen as the trigger event. An alternative approach can therefore be to look at the time when government bond yields increase to levels that are regarded as prohibitively high by the financial markets (e.g. 7 per cent for a 10-year government

PROCESS FOR IMF AND EU PROGRAMMES FOR THE EURO AREA MEMBER STATES

Table 2

	Greece I	Ireland	Portugal	Spain	Cyprus
Trigger event	0	0	0	0	0
10-year government yield over 7 per cent	2 mths.	1 mth.	3 mths.	1 mth.	
Official request for loan	6 mths.	2 mths.	9 mths.	1 mth.	4 mths.
Adoption of programme	7 mths.	3 mths.	10 mths.	2 mths.	

Note: The figures indicate the duration from occurrence of the event until the first EU/IMF programme is in place. The timing of loan request and adoption refer to the IMF programmes for Greece, Ireland and Portugal. For Spain the figures indicate the time of request for and adoption of an ESM credit line. The 10-year government bond yield for Cyprus is not available.

Source: IMF, Reuters EcoWin and press releases from the euro area member states.

bond yield). For the three euro area member states, 2-7 months elapsed from this event to the approval of their loan programmes.

Greece, Ireland and Portugal all officially submitted requests for loans around one month before the adoption of their programmes, cf. Table 2. The requests were thus submitted to the EU and the IMF relatively late in the negotiation phase. The requests were typically driven by a combination of growing market pressures and debt approaching maturity. A country may postpone the loan request as long as possible for various reasons. Possibly, the country does not recognise the need for external financing until relatively late, or is concerned about potential stigmatisation when requesting a loan from the IMF. Submitting a request for financial assistance may entail considerable political costs for the government in office. Moreover, the programme conditions may give rise to disagreement between the troika and the country requesting the loan. However, it may be advantageous to seek approval of the programme relatively quickly to ensure a stable environment for the necessary economic recovery.

In *Greece*, more than six months elapsed from when it became clear that the country was facing financing difficulties to the approval of the first programme. The trigger event can be identified as the announcement in October 2009 of a government budget deficit of approximately 12 per cent of GDP. The budget deficit announced by the new Greek government under Prime Minister Papandreou was thus twice the estimate of the previous government. At that time, Greece's government debt was around 115 per cent of GDP, and given the weak growth outlook, this announcement prompted investors to question the sustainability of Greece's sovereign debt.

For *Ireland*, the process was relatively short, and only three months went by from the trigger event to approval of the programme. The event is defined here as the announcement of a further increase in the costs of repairing the Irish banking sector to approximately 45 billion euro in September 2010. The higher costs of recapitalisation of the banks caused the government's estimate of the budget deficit for 2010 to rise to 32 per cent of GDP. While acknowledging that the extraordinary increase would require significant fiscal consolidation measures in 2011, the government maintained that the planned deficit correction in 2014 would still be met in accordance with the EU framework, cf. Department of Finance, Ireland (2010). Nevertheless, the reported high costs of banking sector repair caused government bond yields to increase considerably from October 2010.

As regards *Portugal*, it is difficult to identify a single trigger event. It was more a combination of disappointing economic developments and

growing market pressures. Consequently, the event in Table 2 marks the period around the summer of 2010, when Portugal was downgraded by the credit agencies several times. It then took about 10 months before Portugal requested a financial assistance programme.

The processes for Cyprus and Spain deviate from those of the other euro area member states. On 27 June 2012, *Cyprus* submitted an official loan request to the EU and the IMF. The request was primarily driven by the banking sector's exposure to Greece and macroeconomic imbalances. The trigger event is thus defined as the announcement of the terms of Greece's debt restructuring in February 2012. Immediately after the request in June, the troika sent a mission to Cyprus to initiate negotiations for a programme. The negotiations with the Cypriot authorities have not yet been completed.

As regards *Spain*, the trigger event is defined as the request in May 2012 from Spain's fourth-largest financial institution, Bankia, to the Spanish government for a large-scale rescue package totalling 24 billion euro. As a result of the problems in the Spanish banking sector, most Spanish banks no longer have access to market funding. This was a contributing factor to the government's request for a loan from the ESM only two months after the trigger event and in the same month as Spanish government bond yields rose to more than 7 per cent. Besides the Spanish banking sector's problems, Spain is facing considerable challenges as regards the debt-ridden Spanish regions and massive unemployment.

THE PROCESS TOWARDS A DEBT RESTRUCTURING[1]

Greece implemented considerable fiscal adjustments under the first programme. However, the downturn of the Greek economy turned out to be far worse than expected. Together with insufficient implementation of fiscal and structural reforms, this entailed that the 2010 programme was not sufficient to stabilise the country's debt. In July 2011, euro area member states agreed on a new financial assistance programme for Greece on the condition that Greece's debt to private creditors would be written down. The announcement of the second financial assistance package from the euro area member states marked the beginning of the Greek debt restructuring process involving negotiation of the terms of the debt exchange with private creditors.

[1] Debt restructuring can be defined as an exchange of outstanding sovereign debt instruments for new debt instruments or cash through a legal process, cf. Das et al. (2012).

NUMBER OF SOVEREIGN DEBT RESTRUCTURINGS OVER TIME — Table 3

	1950-59	1960-69	1970-79	1980-89	1990-99	2000-10
OECD countries[1]	-	-	4	3	-	-
Non-OECD countries	1	15	18	245	207	141

Source: Das et al. (2011).

[1] Turkey is the only OECD country that has experience with debt restructuring; it went through seven debt restructurings in the 1970s and 1980s. However, Mexico and Chile had their sovereign debt restructured before they joined the OECD in 1994 and 2010, respectively.

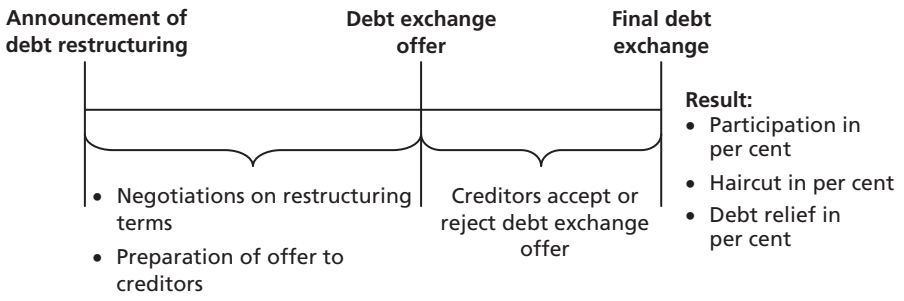
A difference between the first and second loan programmes for Greece relates to the outcome of the debt sustainability analysis, cf. Box 2. In the period leading up to the second programme, Greece's sovereign debt turned out to be unsustainable in the medium term without private sector involvement. Whether a financial assistance programme will include write-down and restructuring of private creditors' share of the government debt will usually depend on the international institutions' assessment of the medium-term sustainability of public finances under the assumption of full programme implementation.

Greece's sovereign debt restructuring is far from the first sovereign restructuring, with more than 600 episodes in 95 countries over the last 60 years, cf. Das et al. (2012). However, the Greek restructuring is the first of its kind in an advanced economy in this period, cf. Table 3.

Stylised debt restructuring process

Based on the experience of previous sovereign processes, an orderly debt restructuring process can be put forward, cf. Chart 4. It should be noted that orderly debt restructuring refers to a situation where an agreement is concluded with creditors on write-down or restructuring of the debt. Otherwise a country will default without any advance agreement with

STYLISED DEBT RESTRUCTURING PROCESS — Chart 4



Source: Das et al. (2012).

NEGOTIATION PROCESS FOR PREVIOUS SOVEREIGN DEBT RESTRUCTURINGS Box 3

Most debt restructurings in the period 1950-2010 consisted of bilateral agreements between governments via the Paris Club, which was set up in 1956 when Argentina met with its sovereign creditors in Paris in an attempt to avoid an imminent default. The Paris Club is an informal group of creditors, comprising the governments of 19 major economies in the world, including Denmark, as well as other creditors on a case by case basis. The debt restructuring process between governments and commercial banks is called the London Club, but unlike the Paris Club, this is not an actual institution. Instead, the London Club designates the negotiations that took place in the late 1970s and early 1980s between representatives of major Western banks and governments of developing countries.

the creditors on the terms of the default. The stylised process is used below to put Greece's debt restructuring process into perspective.

In the stylised process, negotiations with the private sector about a sovereign debt restructuring start with sovereign debt service default or the actual announcement of a debt restructuring. The government will then typically initiate formal or informal negotiations with its creditors on the conditions for debt exchange. A debt restructuring may involve restructuring by extending the maturity of the original debt instruments, possibly combined with lower yields, or by reducing the nominal value of the principal or a combination of these measures. The negotiations on sovereign debt restructurings are normally conducted as Paris Club or London Club negotiations, cf. Box 3. The negotiations conclude with a final offer to the creditors. The last part of the stylised debt restructuring process starts with the offer to the creditors and ends with the final agreement and implementation of the debt exchange after a majority of the creditors has accepted the debt restructuring terms.[1] In most cases by far, the restructuring itself will also mark the end of the debt crisis, since the exchange of the original debt for new debt puts the country back on a sustainable debt path.[2]

Experience shows that a debt restructuring may involve months or years of negotiations before the terms of the debt exchange with the creditors are finalised. The average duration has been 28 months over the last 60 years, but with considerable variation, cf. Das et al. (2012). For example, the processes for Jamaica (2010), Uruguay (2003) and Chile (1990) took only a few months, while the debt restructurings for espe-

[1] The implementation of a successful debt exchange often includes a minimum requirement for the number of creditors that must accept the terms.

[2] However, this is not always the case, especially not during the 1980s when clusters of restructuring cases were observed, cf. Das et al. (2012).

cially Argentina (2001-05) and Peru (1983-1997) were several years underway. Moreover, the analysis shows that the duration of the restructuring process has decreased considerably over the last 10-15 years to an average duration of 17 months, compared with 31 months for debt restructurings in the 1980s and 1990s.

The challenges of a debt restructuring process

An orderly debt restructuring with an agreement with creditors on the terms would generally be preferred to a disorderly default, since the former limits the losses for creditors and the costs for the country in the longer term. But the process towards an orderly restructuring is complicated by conflicting interests and incentives. An orderly restructuring process entails that a debtor country fails to meet existing legal contracts and debt commitments. There are further obstacles for advanced economies, because debt restructurings are to a lesser degree accepted and expected among investors and the general public.

For the debtor country, a debt restructuring process involves a distorted incentive structure, in that the costs of a disorderly default may, in the short term, seem smaller than the costs of an orderly debt restructuring. This gives a country an incentive to default in a disorderly manner, thereby achieving full debt relief. Conversely, an orderly restructuring implies that the debtor country has to honour a number of obligations and manage a debt level that may still be considerable. In the longer term, however, a disorderly default is associated with considerable costs, e.g. in relation to the country's ability to regain access to market financing and prospects of restoring investor confidence. These considerations are taken into account in the country's willingness to negotiate and accommodate its creditors.

The creditors are also facing various considerations. They seek an agreement with minimum losses, but would also adjust their requirements of the debtor country in order to avoid disorderly default resulting in total loss. The requirements should be proportionate to the debtor country's ability and willingness to pay. In addition, there may be conflicting interests within the creditor group, which is not necessarily homogenous. Previous restructuring negotiations were characterised by widespread coordination difficulties among creditors, cf. Das et al. (2012). Some creditors or creditor groups may have an incentive to hold out on agreement in order to obtain special treatment and better terms in subsequent renegotiations or litigation. For example, in 2005 a considerable number of creditors decided to reject the original agreement for debt restructuring in Argentina, cf. Das et al. (2012). Argentina then chose to propose a new offer, which increased participation from 66 to

92 per cent of the entire group of creditors, but the country is now facing a number of court cases.

The debt restructuring process for Greece

Table 4 shows the timeline from the announcement of private sector involvement, PSI, in the second Greek loan programme in July 2011 to the debt exchange with creditors.

In practice, the debt restructuring for Greece was announced in July 2011 in connection with the summit where euro area member states reached agreement on a new financial assistance programme for Greece.

During the autumn of 2011, it became clear that the Greek programme situation was worse than had been assumed in July 2011. At the euro area summit on 26 October 2011 – following consultation with international banks – the stage was set for increased PSI with a 50 per cent write-down of the principal, cf. Mikkelsen and Sørensen (2012).

From November 2011 to the end of February 2012, the Greek government negotiated with a group of creditors headed by 12 banks, insurance companies and asset managers on behalf of 32 creditors in total, cf. Zettelmeyer et al. (2012). The negotiation phase in the Greek restructuring process was thus a form of London Club negotiation headed by a creditor committee in line with previous negotiation processes with banks described in Box 3. According to Barclays (2011), the 32 committee members held 30-40 per cent of Greece's debt to private creditors. The committee acted not only as a coordinator for the largest private bond holders, but also as a link to Greece's official creditors that were directly involved in the negotiation process.

After another four months of negotiations, the Greek government and the creditor committee reached agreement on the terms of the debt exchange, and the troika and the Greek government agreed on the terms of a new loan programme. The offer to creditors was presented as a "take it or leave it" offer, which has been a characteristic feature of most restructuring offers since the end of the 1990s. The announcement of the offer marked the end of the negotiation phase, and it was then

DEBT RESTRUCTURING PROCESS FOR GREECE — Table 4

Announcement of debt restructuring	**0**
Announcement of requirement for increased PSI	+3 mths.
Announcement of formal Greek restructuring offer	**+7 mths.**
IMF Executive Board approves the second loan programme	+8 mths.
Announcement of final debt exchange	**+9 mths.**

Source: Press releases from euro area member states, IMF, Greece's Ministry of Finance.

up to all creditors to accept or reject the offer. Almost 86 per cent of the private creditors voluntarily accepted the debt restructuring. This number was sufficiently high to enable the Greek government retroactively to apply Collective Action Clauses (CACs) to their government bonds, thus forcing the remaining private investors under Greek law to agree to a restructuring.

In April 2012, nine months after the announcement, Greece's debt restructuring was implemented with participation of around 97 per cent of the affected creditors. Zettelmeyer et al. (2012) have estimated the write-down of the principal value and the value of the debt relief for Greece and compared it with previous debt restructuring episodes. They estimate the total write-down of the principal value at 55-65 per cent, depending on the valuation principle for the original bonds. In only three cases did sovereign debt restructurings in high-income and middle-income countries entail larger losses for creditors, Iraq in 2006 (91 per cent), Argentina in 2005 (76 per cent) and Serbia and Montenegro in 2004 (71 per cent). Greece thus received massive debt relief equivalent to 45 per cent of GDP in present value terms. This percentage by far exceeds previous restructurings. For instance, Argentina's debt relief in 2005 is estimated at 24 per cent of GDP, and Russia's debt relief in 2000 is estimated at only 4 per cent of GDP.

FUTURE CRISIS MANAGEMENT IN THE EU

The implications of previous experiences for possible future programmes and debt restructurings in the EU are not clear-cut. Despite the common features, direct parallels cannot immediately be drawn between countries, since the factors behind a loss of access to market financing are country-specific. Moreover, it is generally difficult to assess in advance whether an event is important enough to result in a financial assistance package from the EU and the IMF.

Troika collaboration and the IMF's future role in the euro area crisis

The collaboration between the IMF, the European Commission and the ECB has evolved during the crisis. In connection with the first programmes for EU member states, including Latvia, Hungary and Romania, collaboration between the European Commission and the IMF was informal, while it became more formalised in the troika in connection with the programmes for euro area member states. The collaboration has resulted in a more efficient and structured dialogue between programme countries and official creditors. In its latest general review of programme conditionalities, the IMF concludes that the collaboration

with EU institutions has worked well and has improved during the crisis, cf. IMF (2012b). However, it is emphasised that the need for collaboration across institutions has made the decision-making process and the design of programme conditions more complex.

In this connection, it is important to note that the troika is not an institution in itself, but a collaboration between three independent institutions with different memberships, mandates and programme requirements. Consequently, there may be different starting points for assessing e.g. the size of the fiscal gap, debt sustainability and programme conditions, including the fiscal adjustment required.

A decisive issue for the Commission and the ECB is that programmes for euro area member states are designed in full accordance with the Monetary Union and economic and fiscal cooperation within the EU. Among other factors, programme conditions must be consistent with obligations under the Stability and Growth Pact and respect the ECB's mandate and independence.

The IMF's role in crisis management in the euro area may change in the future. During the crisis, the IMF has adjusted its lending facilities to accommodate changing needs of the member countries. For instance, new precautionary facilities have been established for countries with relatively strong fundamentals.[1] The IMF's involvement in Spain can be seen as another new step. It is envisaged that the IMF will play a key role in monitoring European financial assistance for recapitalisation of Spanish banks. Initially, this monitoring will be performed solely in the form of technical assistance without financial support. The IMF's surveillance of the Spanish reforms and implementation of measures may enhance the credibility of Spain's recovery and act as a catalyst for financing from markets and other lenders.

Although IMF member countries are expected to support possible future programmes for euro area member states if the required conditions are met, some member countries have become more sceptical e.g. as a result of Greece's insufficient programme implementation, and because of the IMF's high exposure to euro area programme countries. Future implications may be that the IMF's financing share may be reduced.

[1] The Flexible Credit Line (FCL) and Precautionary and Liquidity Line (PLL) are IMF facilities providing precautionary loan access to countries that meet a number of criteria. For example, Poland has an FCL of 30 billion dollars.

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The Danish Money Market at Low Interest Rates

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INTRODUCTION AND SUMMARY

Danmarks Nationalbank performs an annual survey of turnover in the Danish money market, the interbank market for short-term loan agreements and trading in interest-rate derivatives. The total daily turnover in the Danish money market is substantial – approximately kr. 140 billion. A well-functioning money market is important to the banks' liquidity exchange and to ensure a clear transmission from Danmarks Nationalbank's monetary-policy interest rates to the money-market rates that are determinative for the krone exchange rate. The money-market rates also form the basis for the fixing of the reference rates that determine interest rates on a number of financial products, including certain home loans. The monetary-policy transmission has also proved efficient at the current low level of interest rates. Danmarks Nationalbank's introduction of a negative rate of interest on certificates of deposit has been clearly passed through to the money-market rates.

This article first describes the overall conclusions from the money-market survey. The FX swap market and its link to low T-bill rates are then explored. Finally, the implications of a negative rate of interest on certificates of deposit for the functioning of the overnight market are analysed.

In the April 2012 survey, total turnover in money-market loans was largely unchanged compared to 2011. According to the 2012 survey, the banks did not grant uncollateralised loans in the money market with a maturity of more than 1 month. The turnover in CITA swaps dropped compared to 2011 and is now back at the 2010 level.

The survey shows that foreign banks account for a large share of turnover in the Danish money market, particularly the FX swap market. Distortions in the FX swap market have contributed to the downward pressure on interest rates, e.g. Danish T-bill rates.

The interbank turnover in the overnight market was preserved after the introduction of a negative rate of interest on certificates of deposit.

The turnover is bolstered by the banks' incentive to lend in the market rather than buy certificates of deposit at a negative rate of interest. The introduction of a negative rate of interest on certificates of deposit was accompanied by an expansion of the limits on current-account deposits with Danmarks Nationalbank. This, on the other hand, has improved the banks' access to manage liquidity fluctuations by making overnight current-account deposits with Danmarks Nationalbank, without using the money market.

TURNOVER IN THE MONEY MARKET

In the money-market survey for 2012, turnover is based on reporting from the 9 T/N reporting banks. In 2012, the daily turnover in April was kr. 141 billion.[1] The money market consists of money-market loans and interest-rate derivatives, cf. Box 1.[1]

Turnover in money-market loans

The average daily turnover in deposits and lending totalled kr. 129 billion in April 2012, cf. Chart 1, a 2 per cent decline on the previous year.[2]

Overnight loans account for the largest share of turnover, cf. Chart 2, and the decline in daily turnover is mainly attributable to a drop in uncollateralised overnight loans.[3] The market for uncollateralised loans, deposits, with longer maturities continues to be very limited. In April 2012, the T/N reporting banks provided no uncollateralised loans with maturities of more than 1 month. They received only a moderate volume of uncollateralised loans with maturities of more than 1 month. Since the financial crisis, the general trend towards lower turnover in the uncollateralised money market, particularly for longer maturities, has continued in Denmark as well as in the euro area, cf. ECB (2012).

Money-market rates have an impact on the lending rates offered by the banks to households and non-financial corporations. Some variable-rate loans are directly linked to the reference rate for uncollateralised loans, Cibor, with maturities of 3 or 6 months.

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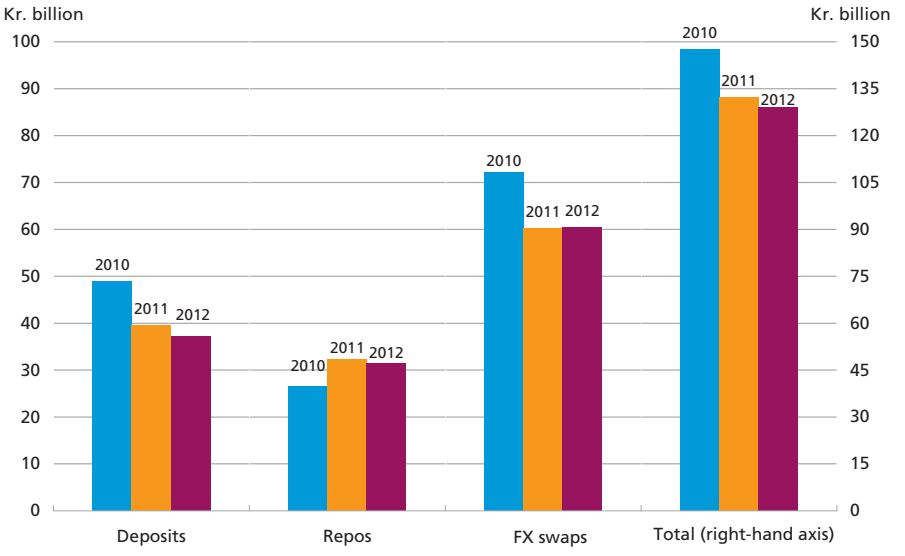
1 This applies to the products in the money-market survey: deposits, repos, FX swaps, CITA swaps and FRAs.

2 As the number of T/N reporting banks has been reduced from 11 in 2011 to 9 in 2012, the data basis of the survey is not directly comparable with previous years. A comparison with an identical number of participants in 2011 would have shown a slight fall.

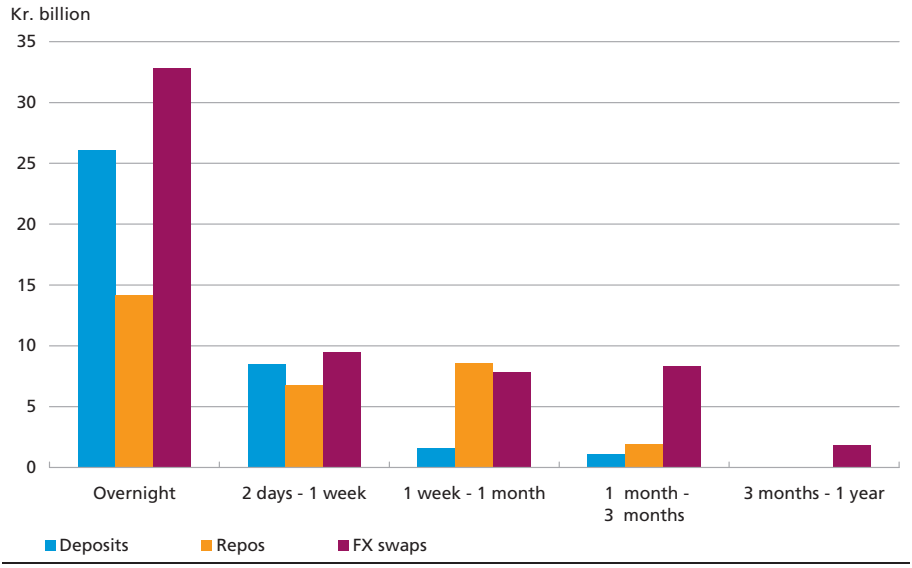
3 Overnight refers to Overnight-, Tomorrow/Next- and Spot/Next loans.
Since, over a long period, loans can be raised by renewing shorter-term loans on an ongoing basis over the period, turnover will tend to be higher for short maturities than for long maturities. For example, 5 overnight loans are required instead of a 1-week loan.

DAILY TURNOVER IN MONEY-MARKET LOANS BY PRODUCTS IN 2010, 2011 AND 2012 Chart 1



Note: Average daily turnover in April 2012. Comprises deposits as well as lending for money-market loans.
Source: Danmarks Nationalbank.

DAILY TURNOVER IN MONEY-MARKET LOANS BY MATURITIES AND PRODUCTS IN 2012 Chart 2



Note: Average daily turnover in April 2012. Comprises deposits as well as lending for money-market loans. The intervals cover the start of the interval and up to the end of the interval. For instance, 1 week – 1 month covers transactions with a maturity of more than one week up to and including 1 month.
Source: Danmarks Nationalbank.

PRODUCTS AND REPORTERS IN THE MONEY-MARKET SURVEY FOR KRONER Box 1

The money market for kroner is the interbank market up to 1 year for loans and interest-rate derivatives in kroner.[1]

Money-market loans

Money-market loans are used to obtain or place liquidity and entail exchange of krone liquidity on the conclusion of the agreement.

Deposits are uncollateralised loans in kroner with standardised maturities ranging from 1 day to 12 months.

Repo transactions (repos or repurchase agreements) are collateralised loans in kroner with standardised maturities ranging from 1 day to 12 months. The collateral pledged comprises securities, typically bonds. Repurchase agreements imply that on the conclusion of the agreement the seller of the bond (recipient of the liquidity) undertakes to repurchase the securities at a future date at a price agreed on the conclusion of the agreement. The repo rate reflects the difference between the agreed purchase and sales prices (the spot and forward rates).

FX swaps are loans raised in one currency against lending in another currency based on standardised maturities ranging from 1 day to 12 months. In this case the collateral is provided in the form of foreign exchange. FX swaps can be seen as a simultaneous spot transaction and forward contract in foreign exchange. On the settlement of the spot transaction, for instance, kroner are exchanged for dollars while opposite payments are made on the settlement of the forward contract.

To this should be added krone-denominated bonds with a remaining maturity of up to 1 year, e.g. T-bills and mortgage bonds used to finance adjustable-rate loans, which are not included in the money-market survey.

Interest-rate derivatives

No initial exchange of liquidity takes place in connection with interest-rate derivatives. The exchange of liquidity is confined to the settlement of the interest-rate difference at a specified time in the future.

CITA swaps (Copenhagen Interest T/N Average) are short-term interest-rate swaps. A variable rate of interest (the T/N rate) is swapped for a fixed rate of interest determined at the start of the agreement. The agreement may be concluded on the basis of standardised maturities. On expiry of the agreement, the difference between the agreed fixed rate and the average T/N rate over the term of the agreement is settled.

An *FRA (Forward Rate Agreement)* is an agreement to pay interest on a fictitious principal for an agreed future period at an agreed rate. At the start of the future period, an amount is settled corresponding to the difference between the agreed reference rate, e.g. Cibor, and the agreed FRA rate on the principal. FRAs are typically entered for 3- and 6-month interest rates based on standardised contracts. If Cibor exceeds the agreed FRA rate in the future period, the bank will receive an amount as compensation of the difference. However, if the interest rate is lower than the FRA rate, the bank must pay.

Reporters to the money-market survey

As in 2010 and 2011, the Tomorrow/Next reporting banks (T/N reporting banks) participated in the 2012 survey.[2] The 9 T/N reporting banks primarily comprise the

CONTINUED Box 1

largest Danish players in the money market.[3] The T/N reporting banks have reported their turnover in deposits as well as lending vis-à-vis other banks.

Moreover, Danmarks Nationalbank receives daily reports from the T/N reporting banks about the turnover in lending in the overnight market.

[1] Cf. Danmarks Nationalbank (2009) for a more detailed description of the money market.

[2] The T/N reporting banks have reported their turnover, i.e. the extent of transactions concluded in deposits, repos, FX swaps, T/N IRSs and FRAs with other banks in April 2012 and the 2nd quarter of 2012. This applies to banks inside as well as outside the group of T/N reporting banks. The conclusions of the surveys for 2010 and 2011 are described in Jørgensen and Risbjerg (2010) and Mindested and Risbjerg (2011), respectively.

[3] As the number of T/N reporting banks has been reduced from 11 in 2011 to 9 in 2012, the data basis of the survey is not directly comparable with previous years.

In the 2012 survey, the turnover in collateralised loans (repos and FX swaps) was largely unchanged compared to 2011. The share of the collateralised money market has grown slightly, accounting for 71 per cent of total turnover in money-market loans in 2012 compared to 70 per cent in 2011.

Turnover in the interest-rate derivatives market

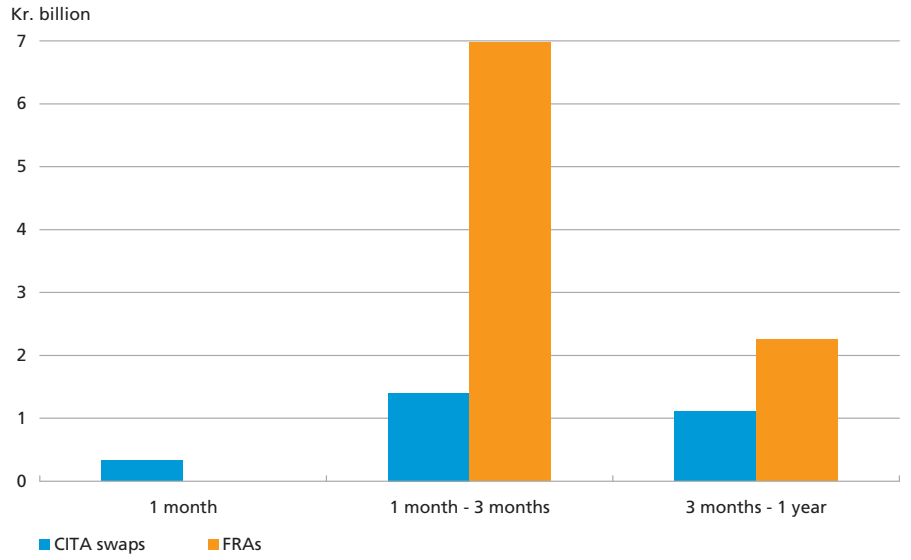
The key interest-rate derivatives, CITA swaps and FRAs, are used by financial institutions and firms to hedge interest-rate risks and position taking. Maturities of more than 1 month account for the largest share of turnover, cf. Chart 3.

CITA swaps are used by, for instance, institutional investors to hedge the interest-rate risk of short-term securities such as 1-year mortgage bonds.[1] The 2012 survey shows a decline compared to 2011 in the turnover in CITA swaps, which is now back at the level prevailing in 2010, cf. Chart 4. Among other factors, the decline reflects largely coinciding expectations of monetary-policy rates among the money-market participants. This has entailed a low degree of uncertainty about the development in money-market rates in the period, reducing the incentive to hedge interest-rate risks and to take positions as well as contributing to the decline in turnover. In the period covered by the money-market survey for 2011, interest-rate expectations varied more overall. There is still turnover in the long maturities and the CITA swap market is efficient, according to market participants. Turnover in the euro area for a similar product – Eonia swaps – has also contracted, cf. ECB (2012).

Turnover in FRAs picked up in 2012. Turnover in interest-rate derivatives may fluctuate as a result of investors' and firms' preferences for hedging and position-taking.

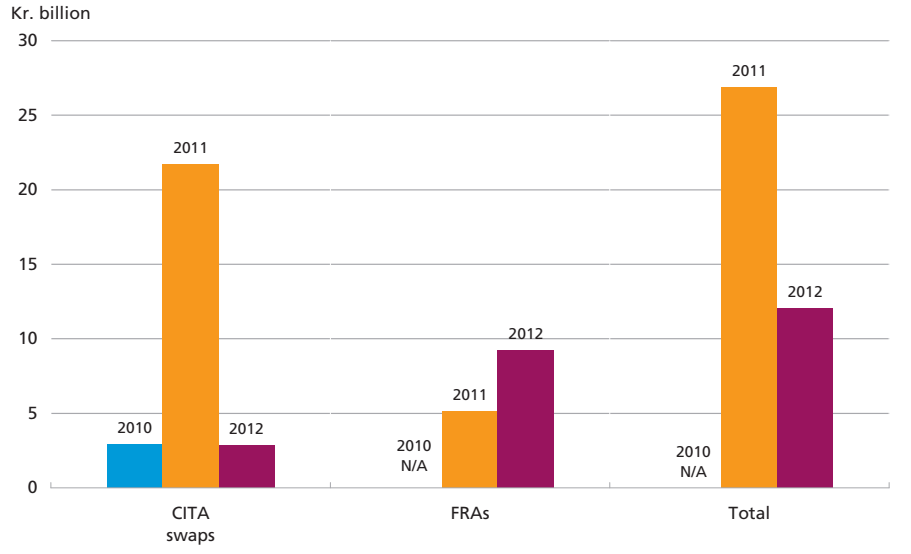
[1] In CITA swaps, the investor receives the Tomorrow/Next rate and pays, for instance, a 1-year swap rate entailing that the total return on the mortgage bond and the swap tracks the development in the overnight rate. CITA swaps are described in more detail in Mindested and Risbjerg (2011).

DAILY TURNOVER IN INTEREST-RATE DERIVATIVES BROKEN DOWN ON MATURITIES AND PRODUCTS IN 2011 Chart 3



Note: Average daily turnover in April 2012. Comprises contracts where a fixed rate is both paid and received for the derivatives.
Source: Danmarks Nationalbank.

DAILY TURNOVER IN INTEREST-RATE DERIVATIVES IN 2010, 2011 AND 2012 Chart 4



Note: Average daily turnover in April in the relevant year. Comprises contracts where a fixed rate is both paid and received for the derivatives.
Source: Danmarks Nationalbank.

FX SWAP MARKET AND LOW INTEREST RATES

Of the money-market products, FX swaps account for the highest turnover and the highest participation of foreign investors. Foreign investors have taken advantage of the distortions in the FX swap market between kroner and dollars by combining FX swaps with investment in kroner, including Danish T-bills, thereby pushing down interest rates, including T-bill rates.

Distortions in the FX swap market

After the financial crisis and subsequently the sovereign debt crisis in some European countries, US banks and investors have become less willing to lend dollars to non-US banks. This has boosted the demand from non-US banks for dollar funding via the FX swap market, causing distortions in the FX swap market, cf. Jensen et al. (2011). The FX swap market distortions are reflected in higher interest rates on dollar funding via FX swaps than on dollar funding directly in the US money market. The distortions reflect market segmentation. Usually, arbitrage trading would even out the distortions in the FX swap market, but the arbitrage opportunities are distorted by non-residents' limited access to direct dollar borrowing in the US market.

The distortions of the FX swap market for dollars have applied to a number of currencies, including euro and kroner. The distortions peaked during the financial crisis but were alleviated by the Federal Reserve, Fed, entering into agreements with a number of other central banks, including the European Central Bank, ECB, and Danmarks Nationalbank, giving the central banks access to lend dollars to the domestic banks, cf. Allen and Moessner (2010). The distortions in FX swaps between dollars and euro widened again at the end of 2011 when the sovereign debt crisis intensified in a number of European countries. US money-market funds reduced their lending to European banks markedly, forcing the banks to obtain dollar funding via other channels, including FX swaps. In order to relieve the pressure, several central banks, including the ECB, lowered the interest rates on dollar loans on 30 November 2011 via their agreements with the Fed[1].

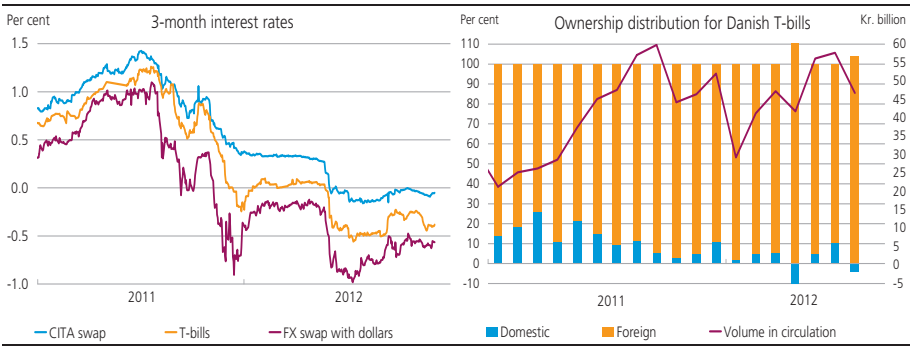
FX swap market in kroner

The FX swap market distortion between dollars and kroner partly reflects considerable demand for dollar funding via the FX swap market from institutional investors, including pension companies. The foreign-

[1] Danmarks Nationalbank's agreement with the Fed on dollar loans expired on 1 February 2010.

INTEREST RATE DEVELOPMENT AND FOREIGN INVESTORS' HOLDINGS OF T-BILLS

Chart 5



Note: The US 3-month OIS rate has been used for the calculation of the implied krone interest rate via FX swaps between dollars and kroner.
Foreign investors' holdings of Danish T-bills may exceed 100 per cent as a result of, for instance, Primary Dealers borrowing T-bills via Danmarks Nationalbank. This was the case in e.g. June and September 2012.

Source: Danmarks Nationalbank.

exchange risk associated with e.g. dollar investments is hedged by combining investments in dollars with FX swaps between dollars and kroner. Moreover, like other European banks, Danish banks use the FX swap market to obtain dollar funding.[1] The distortion has made it expensive for Danish investors to hedge dollar investments.

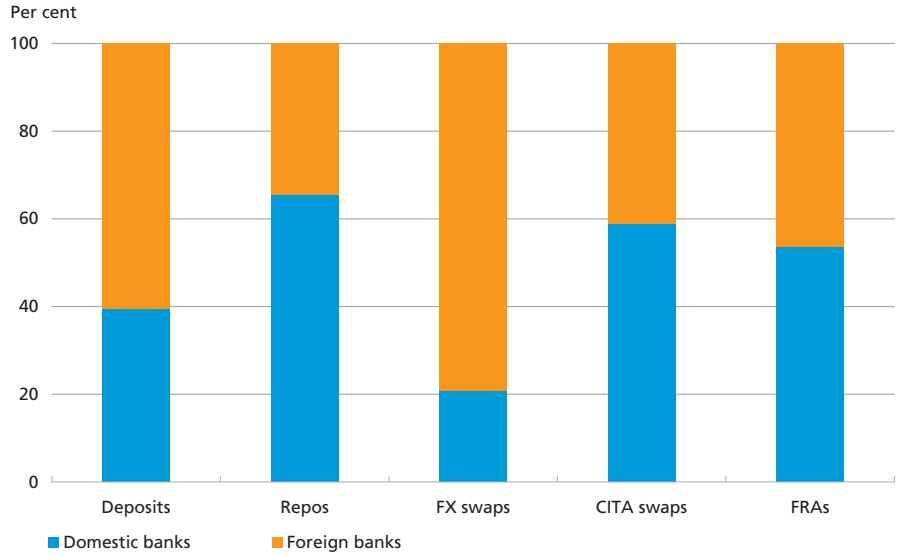
On the other hand, foreign investors with cheap access to dollars have been able to take advantage of the distortion in the Danish FX swap market to achieve higher returns by lending dollars in FX swaps with Danish kroner.

The high implied dollar interest rate obtained via FX swaps between dollars and kroner contrasts with the low implied krone interest rate. The implied krone interest rate from the FX swap shows the cost of borrowing e.g. dollars and at the same time entering into FX swaps with kroner; all in all, this corresponds to a krone loan, cf. Box 2. The implied krone interest rate has been markedly lower than other Danish money-market rates, cf. Chart 5, left.

The counterparties in FX swaps are predominantly foreign banks, cf. Chart 6. Kroner received by foreign banks via the FX swap market may be placed in krone deposits, among others. Foreign banks account for approximately 60 per cent of the turnover in uncollateralised loans, cf. Chart 6.

[1] There are also distortions in the FX swap market between euro and kroner, where the implied euro interest rate from FX swaps with kroner is higher than the rates of interest in the European market. However, the distortion is less pronounced than the distortion in the FX swap market between dollars and kroner.

TURNOVER BY COUNTERPARTY INVESTMENTS — Chart 6



Note: Average daily turnover in the 2nd quarter of 2012.
Source: Danmarks Nationalbank.

THE COVERED INTEREST-RATE PARITY — Box 2

The covered interest-rate parity between e.g. kroner and dollars implies that the cost of raising a loan directly in kroner and raising a loan in dollars while at the same time entering into a spot contract and a forward agreement, an FX swap, should be the same. All in all, this corresponds to a loan in kroner. Since the end result is the same for both methods – a loan in kroner is obtained for a given period – the price should theoretically be the same if no arbitrage opportunity should exist. The covered interest-rate parity can be approximated as follows:

$$r_{DKK} = r_{USD} + (F-S)/S$$

The left-hand side of the equation, r_{DKK}, shows the interest rate on a direct loan in kroner while the right-hand side shows the interest rate on a loan in kroner via a loan in dollars, r_{USD}, and the percentage cost of borrowing kroner against dollars via an FX swap, (F-S)/S, where *F* is the forward rate (kroner per dollar) for the exchange of currency in the future and *S* is the spot rate. The FX swap involves buying dollars on spot terms at the spot rate S, which is invested at r_{USD}, while at the same time selling dollars on forward terms at a price known at the time of the transaction, F, to lock in the return in kroner.

In practice, deviations from the covered interest-rate parity may occur as a result of e.g. transaction costs and differences in credit risk and liquidity conditions in the various markets.

FX swaps and T-bill rates

Foreign investors may also choose to invest kroner received via the FX swap market in short-term krone bonds, including Danish T-bills and short-term fixed-rate mortgage bonds. Therefore, foreign investors hold almost the entire outstanding volume of Danish T-bills, cf. Chart 5, right. Moreover, the T-bill rate and the implied krone rate from FX swaps with dollars correlate closely, cf. Chart 5, left, indicating that some foreign banks are taking advantage of the FX swap market distortion and investing their krone liquidity in T-bills.

A NEGATIVE RATE OF INTEREST ON CERTIFICATES OF DEPOSIT AND THE OVERNIGHT MARKET

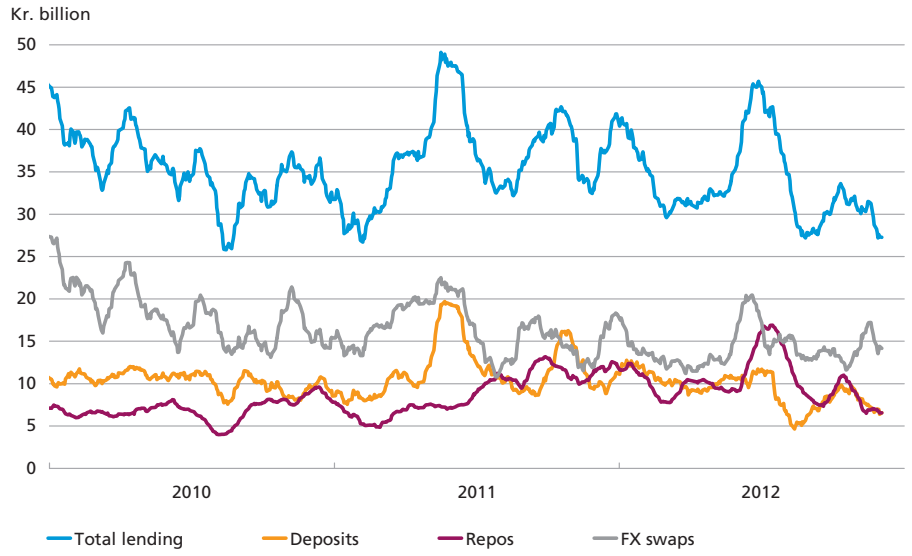
The banks' and mortgage banks' loans from and deposits with Danmarks Nationalbank via monetary-policy instruments offer an alternative to short-term money-market loans. Monetary-policy interest rates are key to the money-market rates. This was also the case in connection with the introduction of a negative rate of interests on certificates of deposit. The T/N rate and the CITA swap rate, which reflects expectations of the T/N rate, followed the downward move of the rate of interest on certificates of deposit, cf. Jørgensen and Risbjerg (2012). The design of the monetary-policy instruments is key to the activity in the money market, cf. Box 3.

The banks' use of the uncollateralised overnight market is largely driven by considerations with respect to their daily liquidity management where the turnover in repos and FX swaps to a large extent may be driven by bond transactions and the customers' foreign-exchange positions, respectively. Traditionally, the Danish market has used T/N loans[1] to manage foreseen and planned liquidity fluctuations while the O/N market is used to manage unforeseen fluctuations.

Turnover in the overnight market, including the uncollateralised T/N market, has been preserved, cf. Chart 7. The turnover is bolstered by the banks' incentive to provide loans in the market rather than buy certificates of deposit at a negative rate of interest. The introduction of a negative rate of interest on certificates of deposit was accompanied by an expansion of the limits for current-account deposits with Danmarks Nationalbank, cf. Box 3. This, on the other hand, has improved the banks' access to manage liquidity fluctuations by making overnight current-account deposits with Danmarks Nationalbank, without using the money market.

[1] T/N loans are overnight loans commencing on the (business) day after the transaction day when the loan agreement is concluded. The O/N loan commences on the same day as the loan is raised.

TURNOVER IN OVERNIGHT LOANS — Chart 7



Note: Based on daily reports from the T/N reporting banks. Average daily turnover. 21-day moving average.
Source: Danmarks Nationalbank.

DANMARKS NATIONALBANK'S MONETARY-POLICY INSTRUMENTS AND TURNOVER IN THE OVERNIGHT MONEY MARKET — Box 3

Monetary-policy instruments

Monetary-policy instruments are the deposit and lending facilities made available by Danmarks Nationalbank to banks and mortgage banks, the monetary-policy counterparties. The monetary-policy counterparties have access to two facilities at Danmarks Nationalbank: open market operations and current-account deposits, the latter often referred to as current-account liquidity or just liquidity.

Through Danmarks Nationalbank's regular open market operations on the last banking day of each week, the counterparties can borrow against collateral and place the funds in certificates of deposit. If necessary, Danmarks Nationalbank also conducts extraordinary open market operations, in which it buys or sells certificates of deposit in order to manage the banking sector's liquidity.

Current accounts are demand accounts where the counterparties can place liquidity overnight. An overall limit has been determined for the monetary-policy counterparties' total current-account deposits with Danmarks Nationalbank at the close of the day. In its open market operations, Danmarks Nationalbank ensures that the counterparties' total current-account deposits do not exceed the limit. If the counterparties' current-account deposits exceed the overall limit for certificates of deposit, they will be converted into certificates of deposit.

CONTINUED Box 3

Turnover in the overnight market

The counterparties can adjust their liquidity through Danmarks Nationalbank's monetary-policy instruments on days with open market operations. On other days, they must exchange liquidity among themselves via the money market. This will, other things being equal, point to lower money-market activity in connection with open market operations.

The spread between certificates of deposit and current-account deposits has a bearing on the banks' incentive to use the monetary-policy instruments. A wide positive spread increases the banks' incentive to plan their liquidity requirement and maintain a small current-account deposit. This boosts money-market activity as the smaller current-account deposits limit the banks' scope for managing liquidity shocks, thereby increasing the banks' need for using the money market.

The current-account limits may also boost activity in the money market to the extent that they restrict current-account deposits. On the introduction of a negative rate of interest on certificates of deposit on 6 July 2012, the current-account rate was maintained at 0 per cent and thus, unlike earlier, the interest rate on certificates of deposits was lower than the current-account rate. At the same time the overall current-account limit was widened from kr. 23 billion to kr. 67 billion. As of 5 October 2012, the overall current-account limit was increased by kr. 35 billion, corresponding to an increase in Danmarks Nationalbank's 3-year loans at the end of September 2012. This gave the banks an incentive in terms of interest rates as well as greater opportunity to place funds in current accounts, and the overall current-account deposits grew. The larger current-account deposits enhanced the banks' access to manage liquidity fluctuations via current accounts without using the money market, pointing to lower turnover in the overnight market. However, the counterparties still have a financial incentive to use the money market. The banks whose deposits with Danmarks Nationalbank exceed their current-account limit have a financial incentive to place funds in the money market if a higher rate of interest than the rate of interest on certificates of deposit can be obtained.

The spread between Danmarks Nationalbank's lending rate and the rate of interest on certificates of deposit also provides the counterparties with an incentive to borrow funds in the money market rather than from Danmarks Nationalbank. The counterparties currently have a very limited number of 7-day loans from Danmarks Nationalbank.

[1] See Monetary Policy in Denmark (2009) for a more detailed description of the monetary-policy instruments.

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Speech by Governor Nils Berstein at the Annual Meeting of the Danish Mortgage Banks on 26 September 2012

Growth in the world economy was weaker than expected in the 1st half of 2012 and declined further over the summer. It now looks as if global growth this year and next year will be lower than expected in the spring. Not only the European economies have slowed down, but also major emerging economies such as Brazil, China and India – which have until now been surprisingly resilient to the crisis.

This development is reflected in world trade, which has flattened out since the turn of the year. According to the press, the WTO assesses annual growth in world trade at only 2-3 per cent at the moment. This is a clear indication that things are not going too well.

The problems in southern Europe still constitute the greatest uncertainty factor. The debt crisis has been weighing down the world economy since early 2010. Many initiatives have been taken – by the member states in question, by the euro area as such and by the IMF. But it has proved to be difficult to come up with effective solutions.

The good years of the last decade were only to a limited extent used to build up buffers. So when the crisis erupted, many countries had little resilience, and the need for consolidation soon became evident. Uncertainty about US fiscal policy is another risk factor.

At a time with weak domestic demand and low confidence in the private sector, many countries are compelled to pursue tight fiscal policies due to large government deficits and debts. These countries are to a large extent paying for the sins of the past. On the other hand, it should also be emphasised that consolidation is underway, especially in many European economies, and medium-term strategies to ensure fiscal sustainability are in place. Combined with the most recent initiatives from the European Central Bank, this should help to bring down interest rates, and hence funding costs, to a manageable level in debt-ridden EU member states such as Spain and Italy. Among the member states subject to IMF programmes, Ireland has made the most progress towards economic recovery and is now, once again, able to borrow in the international financial markets at affordable interest rates.

Neither the USA nor Japan has adopted a medium-term fiscal plan – that is, a plan for reducing the growing debt in the long term.

The weak economy pushes up unemployment in many countries. Total euro area unemployment now exceeds 11 per cent of the labour force. But there are wide variations, from 5 per cent and falling in Germany to 25 per cent and rising in Spain. Weak activity and anchored inflation expectations mean that underlying inflationary pressures are low in most member states.

I am pleased to note that the European debt crisis is being addressed through a combination of national measures and support from the community. After all, the many summits and ministerial meetings show that the relevant member states are not left to fend for themselves, taking initiatives that could be detrimental to others.

Furthermore, we should not underestimate the highly developed co-operation between central banks and supervisory authorities worldwide – ranging from specific, coordinated measures to the development of rules and exchange of experience. This provides useful transparency as a basis for our own decisions.

Obviously, Denmark is not unaffected by events in the rest of the world. There is a direct impact via trade, as well as an indirect impact via expectations for the future.

Economic activity in Denmark has stagnated over the last 18 months. The reason is that consumers and firms still keep a tight rein on spending. The consumption ratio is low and the investment ratio even lower, while the savings surplus is unusually high. This should be viewed against the backdrop of considerable loss of wealth in the wake of the financial crisis, which has by no means been restored. Add to this a subdued trend in disposable income and, not least, low consumer and investor confidence. The high household savings entail a large consumption potential, which can be unleashed when confidence returns. Exactly when this will happen is difficult to predict.

In our most recent forecast, we assume that private consumption will pick up a little over the coming year. On the basis of a very weak 1st half, we estimate output growth at only 0.3 per cent this year, rising to just over 1.5 per cent p.a. in 2013 and 2014. But this will all depend on when confidence is restored and the private sector begins to convert some of its savings into consumption and investment. Presumably the situation in the housing market will have to improve first.

Since Statistics Denmark began to publish monthly statistics of house prices last autumn, the figures initially published have consistently been a little lower than the final figures. With this in mind, we have seen a stabilisation of prices over the last six months – and the first tentative signs of improvement. The supply of homes for sale has decreased considerably in the last nine months, and although this does not reflect

higher turnover, it may well help to stabilise prices. In our forecast, we assume that the tide will turn in the 2nd half of the year, and prices will begin to rise moderately. Prices are estimated to be slightly below their equilibrium level, based on the current low interest rates. The future development in prices is subject to much uncertainty.

Interest rates on home loans are presumably lower in Denmark than anywhere else at the moment. The low interest rates generally help to buoy up the housing market. For buyers this means that with a fixed-rate loan the "housing burden" is now below its long-term average. If they opt for a variable-rate loan instead, the housing burden is very low at present. This is likely to attract more buyers.

If we take a bird's eye view of the Danish economy and compare ourselves with other countries, we can see, on the one hand, that we are not among those most severely affected by the crisis. On the other hand, we too need to fix a few problems.

Our financial sector is undergoing an adaptation process in response to the financial crisis. New rules have been introduced, and the defences have been strengthened. Structural developments are affecting the sector and will do so for some time to come. As I see it, a serious and targeted effort is being made, and the sector will emerge from this process strengthened – so that it will take more to shake its foundations next time a crisis hits us. But we have some way to go. Bad loans still dampen earnings.

Danish firms are challenged by weak demand, a high level of costs and a trend in productivity which is on the low side in an international comparison. If the output gap, i.e. the excess capacity in the Danish economy, is to be closed, these issues must be addressed. This cannot be achieved overnight. The business sector focuses much on what others can do, including on borrowing options. I am fully aware that some firms have difficulty in convincing their banks that it makes sense to lend them more money. But in general, firms are saving up and do not see finances as an impediment to production.

I would also like to make it clear that, in Danmarks Nationalbank's opinion, the framework conditions for funding the corporate sector should be based on market solutions. Such solutions do not include government-guaranteed corporate bonds. The government guarantee given to the banks was a very extraordinary measure aimed at preventing the collapse of the financial sector following the failure of Lehman Brothers.

The public sector has also been affected by the slowdown after the financial crisis. Reforms that will not only balance the government budget in the short term, but also ensure the sustainability of our finances in the slightly longer term, are underway. It is not surprising

that politicians are facing increasing challenges at a time when unemployment has risen. But it is important to stay the course. We have already made much progress along the path of reform in Denmark. The best way to help our weakest citizens is by laying the foundations for long-term job creation.

Turning to the households, we can see that debt as a ratio of income has declined in recent years as a result of consolidation. All the same, it is a well-known fact that the Danish households' gross debt is high in relation to their income – both in a historical perspective and by international standards.

To examine whether the households' large gross debt is a problem for the economy, Danmarks Nationalbank and the Ministry of Business and Growth have collected an extensive and detailed data set that makes it possible to analyse the housing market, and especially home financing, at family level. I take this opportunity to thank the sector for its contribution to this unique data set. The analyses have not been completed, but various patterns are emerging.

If families are grouped by income after tax, the 20 per cent with the highest incomes account for more than half of the families' aggregate gross debt. The 50 per cent with the lowest incomes account for only 14 per cent of the gross debt. So the overall impression is that in general the families with debt also have incomes to service it. Furthermore, households with debt are usually also those that hold the most assets besides their homes, i.e. financial assets and pension savings.

Basically, this is reassuring, but new preliminary analyses represent a dark cloud on the horizon.

We have examined whether families that have opted for deferred-amortisation loans use the lower monthly payments to reduce other – often more expensive – debts, as we have often heard from those assembled here today. Some of the families do, but unfortunately they are a small minority.

In addition, more than half of the families with deferred-amortisation loans exceed the loan-to-value threshold of 80 per cent of the property value. So in many cases young families who already have limited liquidity at their disposal will have to start repaying their loans when the current period of deferred amortisation expires. Are they aware of that, I wonder?

The data shows that the widespread use of mortgage loans with 100 per cent deferred amortisation has been a very bad idea – since the system only operates smoothly if house prices continue to rise.

Finally, our preliminary analyses show that households with deferred amortisation have higher gross debt, both in nominal terms and relative

to income, than households opting for loans with amortisation. And there is a tendency for these families also to have more debt before they take out the deferred-amortisation loans.

In recent years, I have raised a few concerns about the continued stability of the mortgage-credit sector in view of the major changes that have taken place within the last 10 years. I know you are also aware of these issues and are addressing them, but nevertheless, we still have a long way to go in some respects.

Firstly, deferred amortisation has made it possible for people to borrow more without having to pay more per month. This has contributed to large house prices rises and increased the vulnerability of borrowers and mortgage banks.

Against this background, I welcome the initiative by the Minister for Business and Growth to introduce a code of good practice, so that consumers are offered variable-rate or deferred-amortisation mortgage loans only if they would be able to service a fixed-rate loan with amortisation. But the question is whether this will be a binding restriction, since I am told that you have previously introduced a similar rule yourselves. Time will show.

I am also pleased to note that the Danish Financial Supervisory Authority has decided to set up an expert group to look into the possibilities of dampening strong house price fluctuations. This will be a foretaste of the macroprudential work to be carried out by the new Systemic Risk Council. In connection with the study of the Danish housing market, Danmarks Nationalbank pointed out that the strong impact of house price fluctuations on the economy is inexpedient. At the time, Danmarks Nationalbank indicated a need to dampen future fluctuations by restoring the link between property value tax and current house prices and by phasing out access to deferred-amortisation mortgage loans for owner-occupied dwellings. I think you know what I mean.

Secondly, the need to pledge top-up collateral for covered bonds when property prices fall has given mortgage banks an extra obligation. This can be a challenge if new loans have been granted right up to the 80-per-cent threshold, especially if these loans are with deferred amortisation. At the same time, the rating agencies are imposing extra collateral requirements on the mortgage banks.

The working group on top-up collateral under the auspices of the Ministry of Business and Growth was established after Danmarks Nationalbank had pointed out the risks related to the need for top-up collateral. This group is to explore the opportunities for handling this requirement in an appropriate way. In this connection it is positive that the mortgage banks have taken specific initiatives and proposed solutions.

My third concern is the surge in adjustable-rate loans. I am not referring to the fact that the rate of interest may vary over the term of the loan, but to the way these loans are structured. This has created a refinancing risk because 30-year mortgage loans are based on short-term, often 1-year, bonds.

If a short rate fixation period is desired, the best option would be to discontinue the 1-year bonds in favour of, say, genuine variable-rate loans with longer maturities. Alternatively, if the auctions of the underlying bonds are spread, the refinancing risk becomes less concentrated.

We have called attention to this issue several times. In 2009, Danmarks Nationalbank concluded an agreement with the mortgage-credit sector to spread the refinancing auctions over the year. A number of initiatives have been taken in the three years since then. For example, new adjustable-rate loans are no longer offered with refinancing in December, and some mortgage banks have offered their borrowers to reschedule their refinancing free of charge. However, the figures show that several mortgage banks have in fact made little progress. The volume of refinancing in December is still far too high. That is not satisfactory.

So let me take this opportunity to encourage the mortgage banks to exploit the options available. These might include drawing attention to loan types that are less vulnerable to refinancing, or introducing differentiated administration margins to give borrowers the right incentives.

I suggest that we make a shared commitment to reduce the volume of deferred-amortisation loans and adjustable-rate loans with very frequent refinancing – and especially loans combining the two – within a few years. And we should also seek to spread refinancing of the remaining short-term bonds evenly over at least three annual dates.

Danmarks Nationalbank is of the opinion that the Danish mortgage-credit sector is systemically important. You are already subject to special legislation aimed at underpinning confidence in the mortgage-credit system at all times. The committee on systemically important financial institutions will be presenting its final report at the end of the year. I find that the SIFI committee provides a good opportunity to perform a service check to see whether this legislation ultimately contributes sufficiently and adequately to protecting mortgage bonds, also in connection with the new loan types.

This is the last time I have the privilege of addressing this assembly. So I would like to give you some advice – free of charge – or should we saywithout any fees?

For generations, Danish mortgage credit has been characterised by safety and predictability, often the same services – year after year – no surprises – a bit boring, in fact!

I think you would be doing yourselves and your customers a service if you strove once again to make mortgage credit a bit more boring – it should not be all that difficult.

Thank you for your attention and thank you to the Association of Danish Mortgage Banks for our smooth cooperation.

Speech by Governor Nils Bernstein at the Annual Meeting of the Danish Bankers Association on 3 December 2012

The sovereign debt crisis is still leaving its mark on the world economy, especially in the euro area. While the US economy seems to be in a moderate upswing, the euro area economy is shrinking. GDP growth has been negative in the last two quarters and the outlook for the 4th quarter is not bright. Even the German economy, which until recently had been less severely affected by the problems in Southern Europe, seems to be slowing down. The Swedish economy is holding its ground, but is also seeing lower growth. The international organisations all predict that the world economy will pick up only gradually in 2013, and growth estimates have generally been adjusted downwards, particularly for the euro area.

Although the USA seems to be faring a little better, its unsustainable budget deficit presents serious challenges. So far, political disagreement between the President and Congress has stood in the way of finding an effective solution to the problem. The risk is that the financial markets at some point begin to respond, as seen in other highly indebted countries. The USA is unique in a number of respects, such as the size of the economy, but all the same, the economic fundamentals still apply. The development in the USA will have a knock-on effect on the rest of the world.

In the summer of 2011, when the US debt ceiling was raised, a compromise was reached between the Democrats and Republicans, meaning that a number of summary budget reductions will be introduced at the turn of the year, and at the same time a number of tax cuts will expire.

The potential tightening accounts for 4 per cent of GDP and, if effected, it will plunge the US economy into a recession.

Negotiations to avoid this "fiscal cliff" are underway. It is scarcely possible to find a solution without addressing the long-term problems linked mainly to demographic change. The financial markets constantly reflect the changing prospects of reaching a compromise.

In some of the most heavily indebted countries, unemployment has reached alarming levels. Public opinion often ascribes this to the consolidation of public finances. But actually, there is no real alternative to consolidation. Sustainable public finances are a condition for reducing

the rate of interest on government debt to an acceptable level. Sovereign default is not an attractive alternative. And it will certainly not lower unemployment – on the contrary. The solution is the "long haul", to coin a phrase. The problems were caused by the imprudent economic policies pursued by these countries in the 10-15 years leading up to the crisis. They cannot be solved overnight. Ireland is an example of how resolute action to address budget and competitiveness problems can shorten the path back to tolerable conditions.

The ECB continues its efforts to contain the crisis. The Outright Monetary Transactions programme announced in September entails that the ECB may buy short-term government bonds from debt-ridden EU member states in the secondary market under certain conditions – for example that the EU member state accepts a programme to seriously address its structural problems. Following the announcement, 2-year yields immediately fell in e.g. Spain and Italy, while they rose in Germany. Activation of the programme requires an official request from the member state in question. Spain has been mentioned as a candidate.

Turning to Greece, we hope that last week's agreement between the euro area finance ministers can restore calm for a while. But the Greek debt will be a recurring theme for many years to come.

The Danish economy is well-balanced, but growth is on a slow track. The current-account surplus is large, and we hold considerable external assets. Inflation is moderate, and so is unemployment. In fact, if we disregard the most recent period of overheating, culminating in 2008, we have to go back to the first half of the 1970s, when things also went wrong, to find a lower number of unemployed people than today. Experience from the period of overheating has to some extent distorted our concept of normality. But the level of unemployment in that period was not normal, so it cannot be used as a yardstick. If we do that, things will go wrong again.

The private sector is consolidating in the wake of the financial crisis. That is understandable, but obviously it is curbing consumption and investment. This trend will cease when savings have reached the desired level – time will show when – and the economy will begin to pick up. The shift could come suddenly – but that is not a promise – especially if the signals from the rest of Europe become more positive.

The most recent national accounts figures for Denmark point to negative growth this year. We estimate that the economy will grow by 1-1½ per cent next year compared with this year.

Exports have buoyed up growth in Denmark. The reason is that some of our largest export markets, such as Germany and Sweden, have not been so severely affected by the crisis until now. In the short term this

somewhat cushions the impact of a deterioration of around 20 per cent in Denmark's competitiveness over the last decade, measured by relative unit labour costs. We have lost and are still losing manufacturing jobs in the competitive sectors. If we want to boost employment in these areas, we must improve competitiveness – there are no other options.

There are – tentative – signs that the housing market is recovering. Price falls have slowed down and the curve has flattened somewhat during the year, both for owner-occupied flats and for single-family houses. In the Copenhagen area, which typically feels the winds of change first, both turnover and prices have risen.

The low level of interest rates is supporting the market. Moreover, the number of homes for sale has dropped sharply over the last year, which helps to stabilise prices. As regards mortgages, we are seeing a shift from very short-term variable-rate loans to variable-rate loans with longer rate fixation periods, as well as a shift from lending by banks to lending by mortgage banks.

The agreed Finance Bill 2013 is in keeping with the 2020 plan for public finances, which allows public spending to grow by 0.8 per cent of GDP. But this year consumption growth will be considerably lower, presumably below 1/4 per cent. However, it is essential not only to set narrow limits on growth in public spending, but also to observe these limits. In that respect we have seen a change in recent years – unlike previously, local and regional governments are not overspending. When the new Budget Act with a tougher sanction regime comes into force, starting with the budgets for 2014 to 2017, there is a greater chance that this will also be the case in future. Prudent management of public finances is a precondition if the Danish government is to maintain its high credit rating and be able to borrow at low interest rates.

This year the government deficit is expected to be just over 4 per cent of GDP. This is to a large extent attributable to the extraordinary disbursements of early retirement contributions; many people said yes when this option was offered. Disbursements total some kr. 25 billion, corresponding to 1½ per cent of GDP.

The estimate of next year's deficit is subject to much uncertainty due to the new rules on taxation of capital pensions. The option to pay pension taxes in advance at a reduced rate will provide considerable one-off revenue for the government. How large this revenue will be I cannot say. But it should be used to reduce government debt.

The government has not yet introduced all the reforms – envisaged in the 2020 plan – required to ensure the sustainability of public finances. So keeping to the path of reform should be a main priority in the near term.

Bank lending rates and the banks' willingness to grant loans have been relatively high on the public agenda since the financial crisis. Since 2008, Danmarks Nationalbank has reduced its interest rates on a number of occasions. But individual bank customers have, perhaps, experienced a different reality. The banks have not reduced their lending rates by nearly as much as Danmarks Nationalbank has, and within the last six months many have announced higher interest rates, while the monetary-policy rates have continued to fall. There are several reasons for this.

The unusually low level of interest rates has made it difficult – not to say impossible – for banks to reduce deposit rates further. To avoid undermining their earnings, the banks are compelled to keep their lending rates unchanged.

At the same time, the banks have been met with tougher earnings requirements. While higher earnings must compensate for higher credit risk under less favourable business conditions, new and more stringent capital-adequacy rules mean increased capital requirements. Irrespective of whether a bank chooses to build up capital buffers by retaining profits or by raising capital from investors, this requires sound earnings. Many banks have taken major steps to reduce costs, sometimes at the expense of employees.

Credit policies have generally been tightened since 2008. This is reflected in lending rates, but also in the perception of the access to borrow. Overall, firms are saving up, and when asked they generally say that they do not see finances as an impediment to production.

With a view to increasing funding options for small and medium-sized enterprises, the opportunities to expand the use of corporate bonds are currently being explored. Danmarks Nationalbank welcomes this initiative, provided that it takes place on market terms.

It has attracted considerable international attention, most recently from the European Commission, that Danish households have far more gross debt relative to income than households in other countries. The low rate of interest on variable-rate mortgage loans has often been identified as the reason why the finances of the households are, nevertheless, generally sound. This raises the question of how robust household finances are to rising interest rates, and whether an increase could jeopardise financial stability. Today we are able to provide a fairly detailed answer to these questions. The main conclusion of an extensive study of household finances is that the threat to financial stability from household debt and its composition is limited. The assessment is based on the share of the debt held by families with particularly tight budgets.

Most families have robust finances and are resilient to negative events such as a strong increase in interest rates or a protracted period of un-

employment if they reduce consumption or savings, although this may entail considerable lifestyle changes. And this assessment does not even take into account that a continuous rise in interest rates is very likely to go hand in hand with an economic recovery and hence better employment opportunities.

Obviously this assessment of the risk to financial stability does not rule out the possibility that higher interest rates could have rather unpleasant implications for families with very tight finances.

Before I step down, it might be appropriate to reflect on some of the experience I have gained during my seven years as Governor of Danmarks Nationalbank. Naturally, it will only be a brief summary.

Without doubt, the financial crisis is the single event that has had the strongest impact on the financial sector during my tenure.

How prepared were we? How did we tackle the crisis itself? Which follow-up steps should we take? These are important questions.

Regardless of our actions, Denmark is a small, open economy and we would have been hit by the international financial crisis which from the autumn of 2008 caused international trade to contract by 20 per cent and later led to a European debt crisis that has descended like a fog of uncertainty on the European economies.

The key question is whether we in Denmark had made ourselves vulnerable to the severe shock that hit us from abroad. The answer is an unqualified "yes". Even without a financial crisis, the Danish economy would have been under pressure.

In this country, the preceding international boom with ample liquidity and low interest rates was allowed to develop into an unusual overheating of the economy, which was already slowing down when the shock hit us. The tax freeze, tax cuts, growth in public spending and new mortgage types were the domestic factors behind the overheating. The banks' lending growth, skyrocketing property prices and unsustainably low unemployment were manifestations of the overheating. Cause and effect worked both ways.

It has been discussed whether Danmarks Nationalbank issued sufficient warnings against this overheating. The truth is that the Danish government in the autumn of 2006 ignored a clear encouragement to tighten fiscal policy by kr. 8 billion; in fact, it even eased fiscal policy in 2007. And the opposition wanted to spend even more.

Admittedly, such tightening measures should preferably have been introduced at an earlier stage, but even in the autumn of 2006 Danmarks Nationalbank could not find support for its view.

This goes to show how difficult it is to conduct countercyclical economic policy. Often there is lack of ability and willingness to acknow-

ledge problems in time and take action. So stabilisation policy should first and foremost be achieved by introducing automatic stabilisers in the economy, observing sustainable medium-term spending targets and aiming for structurally balanced government budgets. Labour market structures should be designed to promote growth and employment.

When the crisis really hit the financial sector in September 2008, a large majority in the Danish parliament – the Folketing – implemented the first of a series of bank rescue packages which have softened the worst blows against the financial sector. It has been a great strength that these initiatives have received broad political support.

The bank rescue packages were introduced as crisis measures. An actual revision of the rules on banking activities, based on the lessons learned from the financial crisis, is now underway and is to a large extent taking place at the international level. For Denmark, this will initially result in EU regulation, subsequently in Danish rules to fill in the EU framework.

A large financial legislation package is currently being submitted to the Folketing. I have the draft with me here. It weighs 1.37 kg. (Although I should add that the weight can be halved by printing on both sides of the paper.) And we will see much more in the coming years.

It is understandable that the rules are being tightened after the excesses of the financial crisis, and Denmark has very little scope for independent action. All the same, it is worth considering whether the growing volume of legislation and the increasing complexity of the rules will provide better assurance against future crises.

Professor and Doctor of Law Linda Nielsen, who works with banking law and investment, recently made a noteworthy contribution to the debate in the daily Politiken. Everyone working with these issues should read it. Her main point is that the number of rules aimed at regulating the financial sector's activities is overwhelming – and more are to come – and often the contents are so detailed and complex to read that even a person with a doctorate in law finds them very difficult to understand. There is a multitude of different rules with different structures, exemptions and levels of detail. It is completely overwhelming.

What does this mean to banks, their boards and their customers, and how about the legislators? Are we constructing a vehicle where the person in the driver's seat with a firm grip on the steering wheel believes to be steering it, while the car is in fact following its own path with considerable backlash? There is no simple answer to this question, which is not unique to financial regulation. As I have already said, individual countries have little room for manoeuvre as these activities take place at the international level. However, it is important to make the rules as clear

and simple as possible. That will make them easier to observe and control. Keep it simple.

Let me try to illustrate this. Since 2004, Danmarks Nationalbank has prepared so-called outlier memos, i.e. identified outlier banks. On the basis of – mainly – published financial statements for a large group of banks, we have been able to point out those that achieved the lowest scores for selected key ratios, such as excess capital adequacy, high lending growth, large exposures and earnings capacity. Using this simple method, we sought to identify potentially vulnerable banks. Subsequently, we have concluded that virtually all of the banks within this group that have actually become distressed had been identified beforehand using this relatively simple method. The Danish Financial Supervisory Authority was aware of this and included it in its supervisory activities. With the "Supervisory Diamond", the Danish Financial Supervisory Authority has taken a step in the right direction, with focus on observing a few key ratios – and now with sanctions for non-observance. And others can also monitor these key ratios.

Another interesting observation is that among the 10 banks identified before the crisis as having the highest exposures to the property sector, 8-9 have subsequently become distressed.

So the conclusion is that relatively simple key ratios can be used to identify the banks that could be at risk.

Aggressive lending growth combined with property speculation is the single factor with the greatest impact on the banks that have folded.

Seen in a broader perspective, Denmark has navigated the financial crisis fairly well so far. The weeding out of unsound banks has almost been completed, and after all less than 6 per cent of the banks became distressed – measured by balance-sheet total. Despite the large house price falls, the number of enforced sales is limited – especially when compared with the housing crisis in the early 1990s. If we disregard periods of unsustainable overheating and subsequent adjustment, unemployment has not been lower for the last 40 years. Denmark has sound economic ratios and internationally it is among the countries with the highest credit ratings. The reason why we have not been more severely hit is that we had the necessary buffers. All in all, this is no bad point of departure for meeting the challenges of the coming years.

In my seven years as Governor of Danmarks Nationalbank, 1/3 of Denmark's banks have disappeared – in numeric terms. The decline has been steady over this period and is in keeping with a trend that goes far back – crisis or no crisis. Danmarks Nationalbank will gladly assist you in calculating when you will be able to hold your annual meeting at a decent-sized dining table – if this trend continues. As I see it, the most signifi-

cant factor is the increasing complexity of banking. So if I may offer a piece of sound advice to a Director of the Danish Bankers Association (chief lobbyist) who wishes to continue to have a large number of paying members, I suggest that you give priority to clear and simple rules – especially for small banks. Regardless of the path you take, I would like to thank the Danish Bankers Association, its members, its employees and its Director for our good and constructive cooperation through seven years.

Thank you for your attention.

Press Releases

3 OCTOBER 2012: FINAL DANISH RESULTS OF THE EU-WIDE CAPITAL EXERCISE

Today the European Banking Authority (EBA) publishes the final re-port on the EU-wide capital exercise.

Last year the European Banking Authority (EBA) conducted a capital exercise of the largest European banks in cooperation with national authorities. The first results were published December 2011.

The purpose of the capital exercise was to ensure that participating banks had built up a buffer to reach a Core Tier 1 ratio of 9 per cent by end-June 2012, fully including sovereign debt exposures at market value as of end-September 2011. The buffer was intended to serve as a temporary boost to counter financial market turmoil.

The final report shows the following results for the four Danish participating banks by end-June 2012:

- Danske Bank: 14.3
- Jyske Bank: 13.1
- Nykredit: 14.5
- Sydbank: 12.8

Data disclosed together with the final report confirms that the Danish banks are not exposed to vulnerable sovereign debt issuers to any significant extent, neither directly via sovereign bonds nor indirectly in the form of credit protection on sovereign exposures (e.g. CDS con-tracts).

"The report confirms that the largest Danish banks are still well positioned to withstand potential future credit losses. Furthermore, the largest Danish banks have limited exposures towards countries with a strong impact from the euro crisis," says FSA Director General Ulrik Nødgaard.

"The final results of the capital test are consistent with Danmarks Nationalbank's analyses showing that the largest Danish banks are well capitalized and robust," says Governor Nils Bernstein, Danmarks Nationalbank.

12 OCTOBER 2012: BILATERAL LOAN AGREEMENT OF KR. 40 BILLION SIGNED BETWEEN DANMARKS NATIONALBANK AND THE IMF

Governor Nils Bernstein signed a bilateral loan agreement between Danmarks Nationalbank and the IMF today amounting to kr. 40 billion

(5.3 billion euro). The signing took place at a joint ceremony with other bilateral lenders at the IMF Annual Meeting in Tokyo, Japan.

Danmarks Nationalbank is thus among the first lenders to sign their bilateral agreement with the IMF. In addition to Denmark, France, Germany, Italy, Japan, Norway and Saudi Arabia have signed their agreements. The agreements follow up on the commitment from a large group of countries in the spring of 2012 to increase IMF re-sources by 456 billion dollars (about kr. 2,600 billion). The purpose of the bilateral loans is to support the IMF's capacity to promote global economic and financial stability.

Enquiries can be directed to Karsten Biltoft on tel.: (+45) 33 63 60 21.

5 NOVEMBER 2012: THE IMF'S REVIEW OF THE DANISH ECONOMY

As part of its surveillance, the International Monetary Fund (IMF) conducts regular reviews of the economies of individual member countries. For Denmark, such consultations take place biennially. Following the recent review, the IMF today presented its concluding statement on Denmark's economic situation and policies.

Danmarks Nationalbank shares the IMF's assessment that Denmark is in a good economic position with a sound current-account surplus, low public debt and access to inexpensive government borrowing. "In Danmarks Nationalbank's opinion, it is necessary to continue along the planned fiscal path with consolidation of public finances if we are also to have a strong economic foundation in the future," says Governor Nils Bernstein, Danmarks Nationalbank.

Danmarks Nationalbank shares the IMF's assessment that the financial system in Denmark has been strengthened and that dependence on individual government guarantees has been reduced. "Danmarks Nationalbank's stress test of the banks' capital and liquidity shows that the largest Danish banks are robust," says Nils Bernstein, adding, "As Danmarks Nationalbank sees it, any problems arising among the small banks can be solved through business initiatives or within the current framework for mergers and resolution without appreciably affecting financial stability. Like the IMF, Danmarks Nationalbank believes that, looking ahead, it is important for the banks to build up robust capital buffers. In this context we have previously pointed out the need to strengthen earnings."

The IMF proposes that deferred-amortisation loans be phased out, referring to their impact on house price fluctuations. Nils Bernstein says, "Danmarks Nationalbank has previously presented an analysis showing that the introduction of deferred-amortisation loans contributed to the

housing bubble and, like the IMF, we recommend that these loans be phased out." Nils Bernstein adds, "As we have said before, Danmarks Nationalbank also agrees that the link between property value tax and prices in the housing market should be restored with a view to ensuring a more stable economic development."

The IMF's conclusions have been published at Danmarks Nationalbank's website.

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 6 December 2012.

Danmarks Nationalbank is the source for Tables 1-15, 17-19 and 24-25, while the Nasdaq OMX Copenhagen is the source for series of bond yields and the share-price index in Table 1. Statistics Denmark is the source for Tables 16 and 20-23. The calculations in Tables 21 and 25 have been made by Danmarks Nationalbank on the basis of data from Statistics Denmark and OECD.

INTEREST RATES AND SHARE-PRICE INDEX — Table 1

Effective end-of-year/ from	Danmarks Nationalbank's interest rates: Lending	Certificates of deposit	Current-account deposits	Discount rate	The ECB's interest rate: Main refinancing operations, fixed rate[1]	End of period	Interbank interest rate, 3-months uncollateralized	Bond yields: 10-year central-government bond	30-year mortgage-credit bond	Share-price index OMXC20 (prev.KFX)
	Per cent per annum						Per cent per annum			3.7.89 =100
2007	4.25	4.25	4.00	4.00	4.00	2007	4.65	4.48	5.61	464.14
2008	3.75	3.75	3.50	3.50	2.50	2008	4.20	3.31	6.21	247.72
2009	1.20	0.95	0.85	1.00	1.00	2009	0.85	3.62	5.19	336.69
2010	1.05	0.70	0.60	0.75	1.00	2010	0.87	2.98	4.53	457.58
2011	0.70	0.30	0.25	0.75	1.00	2011	0.62	1.58	3.94	389.95
2011 8 Apr	1.30	0.95	0.85	1.00	1.25	Nov 11	1.10	2.04	4.21	385.19
8 Jul	1.55	1.20	1.10	1.25	1.50	Dec 11	0.62	1.58	3.94	389.95
26 Aug	1.55	1.10	1.00	1.25	1.50	Jan 12	0.60	1.75	4.01	408.53
16 Sep	1.55	1.00	0.90	1.25	1.50	Feb 12	0.75	1.78	3.98	453.77
4 Nov	1.20	0.65	0.55	1.00	1.25	Mar 12	0.75	1.82	3.96	444.71
9 Dec	0.80	0.40	0.30	0.75	1.00	Apr 12	0.77	1.63	4.00	458.75
16 Dec	0.70	0.30	0.25	0.75	1.00	May 12	0.40	1.08	3.96	432.26
2012 25 May	0.60	0.20	0.15	0.75	1.00	Jun 12	0.15	1.46	3.71	446.04
1 Jun	0.45	0.05	0.00	0.25	1.00	Jul 12	-0.01	1.09	3.57	484.14
6 Jul	0.20	-0.20	0.00	0.00	0.75	Aug 12	-0.25	1.11	3.51	490.06
	|	|	|	|	|	Sep 12	-0.15	1.23	3.57	493.22
						Oct 12	...	1.23	3.59	485.28
6 Dec	0.20	-0.20	0.00	0.00	0.75	Nov 12	...	1.05	3.46	490.93

[1] Until 7 October 2008 minimum bid rate.

SELECTED ITEMS FROM DANMARKS NATIONALBANK'S BALANCE SHEET Table 2

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						
2007	168.8	61.6	89.9	200.5	9.4	216.8	-6.9
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
Nov 11	467.7	61.0	256.4	89.3	14.3	0.2	103.4
Dec 11	481.7	62.4	223.5	150.0	23.2	24.0	149.1
Jan 12	492.6	60.2	219.7	137.7	19.5	0.4	156.8
Feb 12	498.7	60.1	274.4	100.6	10.4	0.4	110.7
Mar 12	483.0	60.7	214.3	165.9	17.2	23.2	159.9
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

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

Table 3

	Central-government finance			Net purchase of foreign exchange by Danmarks Nationalbank					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	Net purchase of bonds by Danmarks Nationalbank	Other factors	Change in net position	End of period
	Kr. billion									
2007	-26.1	2.9	-29.1	-1.7	7.2	5.5	-0.4	-1.4	-25.3	-6.9
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
Nov 11	13.0	6.9	6.1	10.7	-0.8	9.9	-0.3	8.3	24.0	103.4
Dec 11	24.0	-4.2	28.2	17.8	-0.9	16.9	-0.1	-1.1	45.7	149.1
Jan 12	14.3	10.8	3.6	0.0	1.2	1.2	-0.2	3.2	7.6	156.8
Feb 12	-32.6	19.3	-51.9	0.0	3.3	3.3	0.2	2.3	-46.1	110.7
Mar 12	34.1	-11.6	45.8	0.0	-1.2	-1.2	0.1	4.5	49.2	159.9
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	0.2	2.6	189.2

SELECTED ITEMS FROM THE CONSOLIDATED BALANCE SHEET OF THE MFI SECTOR

Table 4

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							
2007	5,446.2	117.5	3,356.1	43.3	63.5	1,224.7	1,505.2	-304.5
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
Oct 11	6,255.6	144.6	3,647.3	72.8	81.4	1,509.5	1,726.8	-245.9
Nov 11	6,225.2	145.1	3,630.6	51.5	82.7	1,460.1	1,757.0	-245.7
Dec 11	6,310.3	148.8	3,640.2	45.1	82.4	1,430.5	1,740.0	-330.9
Jan 12	6,353.8	148.4	3,672.5	41.9	85.8	1,449.1	1,798.2	-281.7
Feb 12	6,435.0	146.0	3,668.0	74.7	87.0	1,488.7	1,812.4	-242.8
Mar 12	6,380.8	147.5	3,688.0	57.8	85.9	1,414.4	1,818.7	-282.2
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
	Change compared with previous year, per cent							
2007	…	0.6	13.5	-16.4	5.2	13.4	5.0	…
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	…
Oct 11	…	2.2	-1.5	33.1	-5.2	4.4	-1.6	…
Nov 11	…	1.9	-1.9	75.7	-4.1	3.2	4.8	…
Dec 11	…	1.5	-1.5	7.9	-6.3	1.4	4.8	…
Jan 12	…	2.9	0.2	-2.2	-4.6	3.5	6.0	…
Feb 12	…	2.1	0.5	63.0	-8.5	2.5	8.2	…
Mar 12	…	1.1	0.4	25.2	-8.3	-2.3	8.4	…
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	…

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 5

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	Repur-chase agree-ments	Bonds, etc. issued with original maturity =< 2 years	M3
	Kr. billion								
2007	51.9	703.1	755.0	204.8	18.0	977.8	6.2	61.5	1,045.6
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
Oct 11	51.8	732.9	784.8	135.9	17.0	937.7	65.2	141.9	1,145.1
Nov 11	52.1	727.4	779.5	135.8	17.0	932.3	58.5	180.1	1,171.2
Dec 11	52.5	727.2	779.7	134.1	17.2	931.0	59.1	196.5	1,186.9
Jan 12	51.4	731.2	782.6	145.0	18.3	945.9	64.4	287.5	1,297.9
Feb 12	51.5	726.8	778.3	143.8	19.5	941.5	54.2	297.0	1,292.9
Mar 12	52.3	722.3	774.5	133.1	19.3	926.9	57.3	345.3	1,329.7
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
	Change compared with previous year, per cent								
2007	…	…	8.0	…	…	13.3	…	…	17.2
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
Oct 11	…	…	-4.8	…	…	-6.5	…	…	-9.7
Nov 11	…	…	-4.5	…	…	-5.2	…	…	-6.5
Dec 11	…	…	-2.6	…	…	-3.3	…	…	-5.9
Jan 12	…	…	-1.5	…	…	-0.7	…	…	14.9
Feb 12	…	…	-2.1	…	…	-1.4	…	…	14.4
Mar 12	…	…	-0.7	…	…	-1.4	…	…	15.8
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

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

SELECTED ITEMS FROM THE BALANCE SHEET OF THE BANKS Table 6

End of period	Total balance	Assets					Liabilities	
		Lending to MFIs	Domestic lending			Holdings of securities	Loans from MFIs	Deposits
			Total	of which:				
				Households, etc.	Non-financial companies			
	Kr. billion							
2007	3,940.0	924.3	1,333.6	557.3	551.8	1,065.7	1,433.6	1,353.8
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
Oct 11	4,045.9	734.2	1,252.7	561.9	447.5	1,122.1	978.8	1,453.2
Nov 11	4,022.8	747.5	1,229.4	556.6	446.7	1,119.1	977.6	1,462.2
Dec 11	4,234.7	841.3	1,230.0	562.0	434.1	1,151.6	1,052.5	1,483.6
Jan 12	4,237.3	762.8	1,258.4	553.8	431.2	1,169.4	1,051.2	1,491.8
Feb 12	4,241.5	801.9	1,244.0	550.7	431.8	1,144.2	1,091.2	1,437.5
Mar 12	4,288.8	843.4	1,262.6	558.4	437.8	1,192.9	1,192.8	1,436.5
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
	Change compared with previous year, per cent							
2007	…	29.3	18.6	17.3	20.5	19.8	27.1	17.3
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
Oct 11	…	-20.3	-7.1	-0.3	-9.8	-2.8	-16.6	-4.0
Nov 11	…	-23.5	-8.2	-0.7	-10.4	-5.1	-20.9	-3.1
Dec 11	…	-6.8	-7.8	-1.4	-12.3	-0.5	-5.9	-0.4
Jan 12	…	-8.5	-3.2	-1.3	-11.8	0.8	0.1	1.1
Feb 12	…	-3.6	-2.8	-1.4	-11.0	0.8	8.8	-1.9
Mar 12	…	5.9	-2.9	-1.2	-9.3	5.3	19.7	-0.4
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

Note: Excluding Danish banks' units abroad.

SELECTED ITEMS FROM THE BALANCE SHEET OF THE MORTGAGE BANKS

Table 7

End of period	Total balance	Assets					Liabilities	
		Lending to MFIs	Domestic lending			Holdings of securities	Loans from MFIs	Bonds, etc. issued
			Total	of which:				
				Households, etc.	Non-financial companies			
	Kr. billion							
2007	3,088.2	362.8	2,015.5	1,549.2	404.0	649.2	344.2	2,495.2
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
Oct 11	3,339.0	510.7	2,379.3	1,763.7	551.8	336.8	553.7	2,588.5
Nov 11	3,439.7	517.8	2,385.3	1,768.0	554.2	417.8	554.7	2,690.6
Dec 11	3,996.4	602.9	2,396.2	1,775.5	558.1	869.9	660.9	3,135.3
Jan 12	3,377.5	543.8	2,398.1	1,777.8	558.4	321.6	569.3	2,635.9
Feb 12	3,471.1	573.0	2,402.8	1,781.5	559.5	374.2	591.6	2,697.5
Mar 12	3,733.1	674.0	2,407.9	1,782.3	561.8	535.0	644.9	2,890.4
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
	Change compared with previous year, per cent							
2007	…	48.0	9.9	9.1	12.8	13.1	52.0	8.6
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
Oct 11	…	2.4	1.8	1.1	5.0	-3.1	3.2	0.9
Nov 11	…	-1.3	1.7	1.1	4.8	-1.6	-2.5	2.2
Dec 11	…	5.3	2.1	1.5	4.9	-11.0	4.6	-0.1
Jan 12	…	19.7	2.2	1.8	4.7	4.6	7.5	6.3
Feb 12	…	25.9	2.3	1.9	4.6	19.7	12.6	8.5
Mar 12	…	32.2	2.3	1.9	4.2	15.0	14.6	9.7
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

LENDING TO RESIDENTS BY THE BANKS AND THE MORTGAGE BANKS

Table 8

End of period	Total lending			The banks' lending			The mortgage banks' lending		
	Total	House-holds, etc.	Business, etc.	Total	House-holds, etc.	Business, etc.	Total	House-holds, etc.	Business, etc.
	Kr. billion								
2007	3,387.7	2,106.6	1,173.0	1,372.2	557.3	760.5	2,015.5	1,549.2	412.4
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
Oct 11	3,650.5	2,325.6	1,234.3	1,271.3	561.9	670.5	2,379.3	1,763.7	563.8
Nov 11	3,633.3	2,324.6	1,218.6	1,248.0	556.6	652.4	2,385.3	1,768.0	566.2
Dec 11	3,644.8	2,337.5	1,216.5	1,248.6	562.0	646.3	2,396.2	1,775.5	570.1
Jan 12	3,674.1	2,331.5	1,253.3	1,276.0	553.8	682.9	2,398.1	1,777.8	570.4
Feb 12	3,664.4	2,332.2	1,246.1	1,261.6	550.7	674.2	2,402.8	1,781.5	571.9
Mar 12	3,688.1	2,340.7	1,258.6	1,280.2	558.4	683.9	2,407.9	1,782.3	574.7
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	3,657.6	2,341.6	1,225.9	1,216.2	536.4	641.8	2,441.4	1,805.2	584.1
	Change compared with previous year. per cent								
2007	12.9	11.2	17.0	17.7	17.3	19.4	9.9	9.1	12.8
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
Oct 11	-1.6	0.8	-4.7	-7.3	-0.3	-11.7	1.8	1.1	5.1
Nov 11	-2.0	0.6	-5.8	-8.3	-0.7	-13.4	1.7	1.1	4.9
Dec 11	-1.6	0.8	-5.1	-8.0	-1.4	-12.5	2.1	1.5	5.0
Jan 12	0.2	1.0	-0.5	-3.3	-1.3	-4.5	2.2	1.8	4.8
Feb 12	0.4	1.1	0.0	-2.9	-1.4	-3.7	2.3	1.9	4.7
Mar 12	0.4	1.2	-0.4	-3.0	-1.2	-4.0	2.3	1.9	4.4
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	0.2	0.7	-0.7	-4.3	-4.5	-4.3	2.6	2.4	3.6

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 9

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						
2007	77.9	889.2	1,045.6	796.6	2,012.7	123.8	547.3
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
Oct 11	62.3	639.9	1,678.9	1,207.6	2,381.1	227.8	769.5
Nov 11	61.9	636.5	1,688.8	1,210.9	2,387.1	226.3	774.6
Dec 11	59.8	619.2	1,715.3	1,229.5	2,394.4	219.0	780.2
Jan 12	60.1	617.2	1,722.1	1,253.8	2,399.5	212.6	781.6
Feb 12	60.3	614.8	1,729.3	1,252.1	2,404.4	211.9	784.6
Mar 12	60.5	600.9	1,747.7	1,259.0	2,409.2	210.5	786.8
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

Note: The Table includes the mortgage-credit lending to residents only, whereas Tables 7 and 8 include the institutes' total lending to residents.

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

THE BANKS' EFFECTIVE INTEREST RATES — Table 10

	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 07	5.7	7.1	5.5	3.6	3.1	2.8	3.2	3.4
Q2 07	5.9	7.2	5.7	4.0	3.4	3.1	3.4	3.8
Q3 07	6.1	7.4	6.0	4.1	3.6	3.3	3.6	4.0
Q4 07	6.2	7.4	6.1	4.3	3.7	3.4	3.7	4.1
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	4.2	5.8	4.7	1.5	1.1	1.3	0.8	1.0
Q1 12	4.0	6.0	4.7	1.0	0.9	1.2	0.6	0.6
Q2 12	4.0	6.1	4.7	1.0	0.9	1.1	0.5	0.5
Q3 12	3.6	5.8	4.3	0.6	0.7	1.1	0.4	0.2
Q4 12	...	...	...	...	...	...	...	...
Oct 11	4.2	5.7	4.7	1.6	1.2	1.3	0.9	1.2
Nov 11	4.3	5.8	4.8	1.5	1.1	1.3	0.8	1.0
Dec 11	4.1	5.7	4.6	1.3	1.0	1.2	0.7	0.9
Jan 12	3.9	5.8	4.6	1.1	0.9	1.2	0.6	0.7
Feb 12	4.0	6.1	4.8	1.0	0.9	1.2	0.6	0.7
Mar 12	4.1	6.1	4.8	1.0	0.9	1.2	0.6	0.6
Apr 12	4.1	6.3	4.9	1.1	0.9	1.2	0.5	0.5
May 12	4.0	6.1	4.7	1.0	0.9	1.2	0.5	0.6
Jun 12	3.8	5.9	4.5	0.9	0.8	1.1	0.5	0.5
Jul 12	3.7	5.8	4.4	0.7	0.8	1.1	0.4	0.3
Aug 12	3.7	5.8	4.3	0.6	0.7	1.1	0.4	0.2
Sep 12	3.6	5.7	4.3	0.5	0.7	1.1	0.4	0.2
Oct 12	3.6	5.7	4.1	0.5	0.7	1.1	0.4	0.1

DANMARKS NATIONALBANK'S LENDING SURVEY — Table 11

	Changes in banks and 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			
Q1 09	-59.8	-27.6	-23.1	-5.2
Q2 09	-10.4	-6.7	-1.0	-5.0
Q3 09	-3.7	-0.9	-0.1	-4.7
Q4 09	2.4	-4.1	-4.5	0.0
Q1 10	-7.3	-0.2	-4.5	-4.8
Q2 10	0.6	0.9	0.0	4.7
Q3 10	1.1	-0.1	-0.3	4.6
Q4 10	8.4	10.1	0.0	0.1
Q1 11	-2.7	3.0	4.4	-5.7
Q2 11	-8.5	0.9	0.0	-4.4
Q3 11	-20.7	-1.9	-23.3	0.3
Q4 11	-4.2	-10.3	-6.0	-22.3
Q1 12	-5.6	-2.1	-25.0	-0.2
Q2 12	-15.3	-0.3	-16.1	-14.7
Q3 12	-11.1	-3.3	-29.0	-7.8

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 12

End of period	Total balance	Assets		Liabilities			
		Holdings of securities		Investment fund shares/units broken down by sector			
		Bonds, etc.	Shares, etc.	House-holds	Insurance compa-nies and pension funds	Other	Abroad
	Kr. billion.						
2007	1,020.7	477.9	411.6	295.2	336.8	322.1	29.2
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	185.1	22.7
2010	1,287.6	768.8	385.9	299.1	653.1	235.5	25.2
2011	1,424.5	872.5	356.1	300.0	682.5	316.4	25.6
Oct 11	1,383.4	836.8	364.3	292.9	660.5	300.5	24.7
Nov 11	1,400.8	849.4	375.8	293.7	661.1	318.3	24.8
Dec 11	1,424.5	874.5	357.3	300.0	682.5	316.4	25.6
Jan 12	1,486.5	893.5	395.4	309.4	704.3	329.9	26.7
Feb 12	1,511.8	902.8	409.9	314.5	714.8	333.7	27.3
Mar 12	1,512.6	896.3	396.8	313.1	717.2	331.5	27.2
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	1,727.7	971.9	424.5	335.4	779.3	370.3	30.9

SECURITIES ISSUED BY RESIDENTS BY OWNER'S HOME COUNTRY — Table 13

End of period	Bonds, etc.						Shares	
	Total		of which:					
			Central-government securities		Mortgage-credit bonds			
	Denmark	Abroad	Denmark	Abroad	Denmark	Abroad	Denmark	Abroad
	Market value, kr. billion							
2007	2,701.2	475.8	301.9	176.2	2,247.1	287.7	996.1	445.4
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
Oct 11	2,928.0	641.3	513.3	264.9	2,216.4	357.8	593.1	438.7
Nov 11	3,104.5	663.2	496.8	263.0	2,412.2	383.3	596.0	454.7
Dec 11	3,539.0	647.9	513.6	263.3	2,828.7	368.6	601.6	471.9
Jan 12	2,936.3	666.8	514.8	258.6	2,230.5	392.7	658.3	489.6
Feb 12	3,015.8	658.9	527.9	258.9	2,296.7	386.9	709.6	544.4
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

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

HOUSEHOLDS' FINANCIAL ASSETS AND LIABILITIES — Table 14

End of period	Assets					Liabilities		
	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							
2007	902	188	1,453	1,722	4,264	2,273	1,991	4,264
2008	905	173	794	1,786	3,659	2,418	1,241	3,659
2009	936	165	1,032	1,924	4,057	2,542	1,515	4,057
2010	967	148	1,299	2,128	4,541	2,657	1,884	4,541
2011	948	136	1,107	2,379	4,570	2,726	1,844	4,570
Q2 11	933	144	1,269	2,150	4,496	2,668	1,828	4,496
Q3 11	931	141	1,093	2,328	4,493	2,685	1,808	4,493
Q4 11	948	136	1,107	2,379	4,570	2,726	1,844	4,570
Q1 12	945	137	1,213	2,429	4,725	2,751	1,974	4,725
Q2 12	977	124	1,153	2,490	4,743	2,765	1,978	4,743

COMPANIES' FINANCIAL ASSETS AND LIABILITIES — Table 15

End of period	Assets				Liabilities				
					Debt				
	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								
2007	911	134	2,923	3,968	1,732	118	4,284	-2,166	3,968
2008	1,048	110	1,788	2,947	1,936	108	2,518	-1,615	2,947
2009	1,041	107	2,225	3,373	1,894	136	3,062	-1,718	3,374
2010	1,105	123	2,750	3,978	1,923	143	3,902	-1,990	3,978
2011	1,203	111	2,337	3,652	1,858	158	3,195	-1,559	3,652
Q2 11	1,075	127	2,675	3,876	1,840	151	3,740	-1,854	3,876
Q3 11	1,116	119	2,356	3,591	1,858	155	3,211	-1,633	3,591
Q4 11	1,203	111	2,337	3,652	1,858	158	3,195	-1,559	3,652
Q1 12	1,188	129	2,586	3,904	1,872	175	3,559	-1,702	3,904
Q2 12	1,179	115	2,474	3,768	1,898	166	3,364	-1,660	3,768

Note: Companies are defined as non-financial companies.

CURRENT ACCOUNT OF THE BALANCE OF PAYMENTS (NET REVENUES) Table 16

	Goods (fob)	Services	Goods and services	Wages and property income	Current transfers	Total current account
	Kr. billion					
2007	2.1	40.3	42.5	9.7	-29.2	23.0
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
Oct 10 - Sep 11	55.3	44.8	100.1	36.0	-30.8	105.3
Oct 11 - Sep 12	45.1	42.5	87.6	50.1	-33.8	103.9
Sep 11	4.4	4.7	9.1	4.4	-2.6	10.9
Oct 11	3.6	4.0	7.5	3.2	-2.6	8.2
Nov 11	5.2	4.0	9.2	3.6	-2.6	10.1
Dec 11	2.5	3.6	6.1	4.0	-2.2	7.8
Jan 12	1.8	2.0	3.7	5.0	-4.1	4.7
Feb 12	3.3	2.1	5.4	4.7	-3.9	6.3
Mar 12	3.7	1.0	4.7	-0.2	-3.7	0.7
Apr 12	2.9	3.6	6.4	5.2	-2.4	9.2
May 12	4.2	3.0	7.2	7.5	-2.4	12.3
Jun 12	5.4	4.7	10.2	7.6	-2.4	15.4
Jul 12	6.0	2.8	8.8	3.7	-2.5	10.0
Aug 12	3.5	6.5	9.9	2.8	-2.6	10.1
Sep 12	3.1	5.3	8.4	3.2	-2.5	9.0

FINANCIAL ACCOUNT OF THE BALANCE OF PAYMENTS
(NET PAYMENTS FROM ABROAD) Table 17

	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						
2007	23.3	-112.3	64.3	-32.0	56.5	-1.0	-1.2
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
Oct 10 – Sep11	109.7	-22.3	21.0	152.9	-126.9	-72.3	62.7
Oct 11 – Sep12	105.2	-52.9	7.9	-183.6	68.5	61.2	5.9
Sep 11	11.0	-35.3	31.7	30.0	-37.7	13.2	12.8
Oct 11	8.3	-3.3	8.0	-17.8	29.2	-24.7	-0.3
Nov 11	10.2	-10.3	2.0	-44.6	1.1	18.2	-23.4
Dec 11	7.9	8.5	-7.0	-48.7	18.0	33.4	12.1
Jan 12	4.8	-6.9	-3.4	-37.2	41.4	1.4	0.0
Feb 12	6.4	-16.4	-2.4	31.9	-44.7	32.4	7.2
Mar 12	0.9	-2.6	-4.1	-21.2	24.0	-10.6	-13.6
Apr 12	9.3	-0.9	-3.1	-2.2	-53.6	49.0	-1.5
May 12	12.4	-21.0	4.7	-29.3	75.8	-22.4	20.2
Jun 12	15.5	11.5	8.0	-34.6	7.5	-0.4	7.4
Jul 12	10.1	-10.3	11.0	3.7	-11.4	-4.7	-1.6
Aug 12	10.3	-2.5	-5.0	6.0	5.2	-14.3	-0.4
Sep 12	9.1	1.3	0.0	7.8	-27.6	9.1	-0.2

[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 18

	Danish securities			Foreign securities		
	Krone-denominated bonds, etc.	Foreign currency denominated bonds, etc.	Shares	Bonds, etc.	Shares	Total [1]
	Kr. billion					
2007	26.2	73.4	15.0	-96.4	-50.1	-32.0
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
Oct 11	3.0	-12.8	-1.0	-10.4	3.4	-17.8
Nov 11	7.7	-29.1	1.7	-36.7	11.7	-44.6
Dec 11	-14.3	-16.4	3.3	-7.5	-13.8	-48.7
Jan 12	4.6	7.4	0.5	-40.2	-9.5	-37.2
Feb 12	-1.3	0.6	7.8	23.4	1.4	31.9
Mar 12	-15.5	0.1	5.8	-4.8	-6.9	-21.2
Apr 12	-8.9	5.9	-6.8	3.6	3.9	-2.2
May 12	25.4	-45.0	3.5	-12.1	-1.2	-29.3
Jun 12	43.0	-55.3	-1.4	-18.2	-2.7	-34.6
Jul 12	10.6	3.1	2.6	-9.0	-3.5	3.7
Aug 12	14.9	6.1	-0.1	-10.0	-5.0	5.9
Sep 12	21.4	-0.2	1.0	-7.0	-4.7	10.5
Oct 12	32.8	3.9	0.4	-7.4	-11.3	18.4

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 17, as the rest of the balance of payments is published 1-2 weeks later.

DENMARK'S EXTERNAL ASSETS AND LIABILITIES — Table 19

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										
2007	650	288	794	733	0	47	1,035	32	176	3,755
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	823	407	763	1,058	37	47	997	33	432	4,597
2011	844	475	735	1,043	121	50	938	35	492	4,732
Q2 11	799	447	764	1,006	41	52	920	32	459	4,520
Q3 11	829	464	690	981	132	49	968	33	497	4,644
Q4 11	844	475	735	1,043	121	50	938	35	492	4,732
Q1 12	894	463	796	1,064	122	52	999	34	487	4,911
Q2 12	926	457	794	1,090	134	56	1,049	35	519	5,060
Liabilities										
2007	543	277	422	1,123	•	36	1,409	38	5	3,853
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	491	293	520	1,436	•	41	1,539	40	5	4,365
2011	503	301	450	1,467	•	43	1,421	44	5	4,233
Q2 11	469	303	487	1,493	•	41	1,368	41	2	4,204
Q3 11	503	303	400	1,510	•	40	1,388	43	3	4,191
Q4 11	503	301	450	1,467	•	43	1,421	44	5	4,233
Q1 12	507	297	529	1,458	•	42	1,515	45	2	4,394
Q2 12	527	302	537	1,455	•	40	1,603	46	4	4,513
Net assets										
2007	108	11	372	-390	0	11	-375	-6	171	-98
2008	139	87	208	-415	83	4	-297	-3	105	-89
2009	233	73	264	-436	21	3	-475	-6	395	73
2010	331	114	242	-378	37	6	-542	-7	428	231
2011	341	174	285	-424	121	7	-483	-9	487	498
Q2 11	330	144	277	-487	41	11	-448	-9	457	316
Q3 11	326	161	290	-529	132	10	-420	-10	494	453
Q4 11	341	174	285	-424	121	7	-483	-9	487	498
Q1 12	387	167	267	-394	122	10	-516	-11	485	516
Q2 12	399	155	257	-365	134	17	-554	-11	515	547

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

GDP BY TYPE OF EXPENDITURE Table 20

	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							
2007	1,695.3	820.4	440.0	371.4	24.8	1,656.5	885.2	846.5
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
Q3 11	444.4	213.1	125.9	77.3	3.5	419.8	243.6	219.0
Q4 11	457.8	228.3	128.8	83.8	-5.6	435.4	243.3	220.9
Q1 12	442.2	221.5	126.4	77.1	3.7	428.6	238.3	224.8
Q2 12	456.3	225.7	129.5	79.6	-2.0	432.8	252.2	228.7
Q3 12	454.6	221.0	129.7	80.3	-3.0	427.9	255.1	228.5
	Real growth compared with previous year, per cent							
2007	1.6	3.0	1.3	0.4	...	2.3	2.8	4.3
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
Q3 11	-0.1	-1.0	-1.8	1.4	...	0.0	5.2	6.5
Q4 11	0.3	-0.4	-1.8	4.0	...	-0.4	4.4	3.5
Q1 12	0.1	0.8	-0.8	6.6	...	1.6	0.5	3.6
Q2 12	-1.0	0.9	-0.8	-0.9	...	-1.1	3.3	3.5
Q3 12	-0.5	1.5	0.5	2.0	...	-0.3	1.5	2.1
	Real growth compared with previous quarter (seasonally adjusted), per cent							
Q3 11	-0.4	-0.9	-1.2	-0.4	...	-0.5	0.8	1.6
Q4 11	-0.1	1.5	-0.4	1.6	...	-0.4	-0.1	-0.8
Q1 12	0.1	0.2	0.3	0.6	...	1.1	0.1	1.8
Q2 12	-0.7	0.2	0.5	-2.5	...	-1.3	2.4	0.9
Q3 12	0.1	-0.1	0.2	2.2	...	0.7	-0.8	0.3

EU-HARMONIZED INDEX OF CONSUMER PRICES (HICP) AND UNDERLYING INFLATION (IMI) Table 21

	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	11.4	18.1	70.5	8.2	4.1	58.2	53.1	14.7	38.4
	Year-on-year growth, per cent									
2007	1.7	0.3	3.7	1.3	2.1	0.6	1.2	1.4	1.4	1.4
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
Q1 09	1.7	-4.6	3.2	2.2	2.7	4.2	2.0	2.3	-1.9	4.4
Q2 09	1.1	-5.5	0.7	2.2	3.1	5.0	1.9	2.1	-4.2	5.2
Q3 09	0.6	-5.9	-0.5	2.0	3.5	5.1	1.6	1.9	-6.0	6.0
Q4 09	0.9	0.3	-1.5	1.6	2.9	4.9	1.2	1.6	-5.0	4.9
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

Note: The weights reflect the weighting basis as of January 2012.

[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 60.9 per cent of HICP's weight basis and 53.2 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 22

	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			
2007	3.7	2.8	107.0	105.7	1,392	162,482	7.5	5	9	20
2008	2.7	1.9	106.7	103.3	2,840	150,665	-7.7	-7	-16	3
2009	4.9	3.6	88.2	99.4	4,140	112,250	-5.0	-14	-44	-13
2010	6.3	4.4	90.6	97.9	5,222	153,616	1.8	3	-35	4
2011	6.2	4.2	94.9	95.6	5,025	169,794	-1.9	4	-20	4
					Seasonally adjusted					
Nov 11	6.2	4.2	95.3	94.7	459	14,346	-9.0	3	-19	-5
Dec 11	6.1	4.1	95.8	94.8	465	14,638	-6.3	6	-22	-1
Jan 12	6.1	4.1	95.0	94.2	405	13,902	-7.6	4	-22	-1
Feb 12	6.2	4.2	95.5	93.7	469	17,701	-4.1	8	-21	-4
Mar 12	6.2	4.3	94.7	94.2	485	12,380	1.7	1	-14	-8
Apr 12	6.1	4.4	95.2	93.3	396	12,845	-2.2	3	-16	-7
May 12	6.2	4.5	94.8	93.5	412	13,773	-2.5	-1	-21	-6
Jun 12	6.2	4.6	96.1	93.1	447	12,314	-2.3	1	-21	-9
Jul 12	6.3	4.7	100.3	92.8	438	17,467	-1.6	5	-24	-6
Aug 12	6.2	4.7	98.6	92.6	440	14,042	-1.4	-1	-19	-7
Sep 12	6.3	4.7	95.4	93.1	410	14,499	-2.3	0	-18	-7
Oct 12	6.3	4.8	...	92.3	421	14,745	-3.4	-6	-13	-6
Nov 12	...	...	...	...	455	...	-1.2	2	-13	-4

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

SELECTED QUARTERLY ECONOMIC INDICATORS — Table 23

	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			
2007	2,903	2,061	151.4	152.1	137.9	104.8
2008	2,952	2,114	158.1	158.5	142.6	100.1
2009	2,883	2,024	162.9	163.2	145.2	88.1
2010	2,817	1,948	166.6	167.4	149.1	90.5
2011	2,806	1,949	169.6	171.2	152.7	88.0
			Seasonally adjusted			
Q3 11	2,808	1,953	170.0	171.9	153.2	87.5
Q4 11	2,800	1,950	170.9	173.1	153.9	84.8
Q1 12	2,798	1,950	171.6	173.5	154.9	84.5
Q2 12	2,793	1,944	171.8	174.2	156.3	85.0
Q3 12	2,793	1,943	172.3	174.7	156.6	...
			Change compared with previous year, per cent			
2007	2.8	4.1	3.8	4.0	3.0	4.6
2008	1.7	2.6	4.4	4.2	3.4	-4.5
2009	-2.3	-4.2	3.0	2.9	1.8	-12.0
2010	-2.3	-3.7	2.3	2.6	2.7	2.8
2011	-0.4	0.1	1.8	2.3	2.4	-2.8
Q3 11	-0.3	0.4	1.7	2.2	2.5	-4.2
Q4 11	-0.4	0.1	1.9	2.5	2.4	-6.7
Q1 12	-0.3	0.3	1.8	2.1	2.3	-5.5
Q2 12	-0.6	-0.4	1.6	2.0	2.7	-5.8
Q3 12	-0.5	-0.5	1.4	1.6	2.2	...

EXCHANGE RATES — Table 24

	EUR	USD	GBP	SEK	NOK	CHF	JPY
	Kroner per 100 units						
	Average						
2007	745.06	544.56	1,089.81	80.57	92.99	453.66	4.6247
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
Nov 11	744.12	549.01	867.90	81.43	95.56	604.63	7.0872
Dec 11	743.41	564.20	880.88	82.44	95.99	605.63	7.2509
Jan 12	743.53	576.24	893.58	84.02	96.88	614.10	7.4870
Feb 12	743.41	562.22	888.28	84.29	98.44	615.89	7.1696
Mar 12	743.54	563.27	891.03	83.66	98.74	616.49	6.8302
Apr 12	743.93	565.01	905.33	83.89	98.28	618.75	6.9535
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

EFFECTIVE KRONE RATE — Table 25

Average	Nominal effective krone rate	Consumer-price indices		Real effective krone rate based on consumer prices	Real effective krone rate based on hourly earnings	Consumer-price index in the euro area
		Denmark	Abroad			
	1980=100					2005=100
2007	103.2	250.5	238.7	108.3	113.1	104.4
2008	105.8	259.0	246.9	111.1	117.1	107.8
2009	107.8	262.4	247.3	114.9	121.0	108.1
2010	104.0	268.4	251.6	111.6	116.8	109.8
2011	103.6	275.8	258.5	111.1	116.1	112.8
Nov 11	103.3	277.1	260.2	110.9	...	114.0
Dec 11	102.4	277.1	260.9	109.9	116.1	114.4
Jan 12	101.4	278.0	260.6	109.4	...	113.4
Feb 12	101.7	281.5	262.1	110.3	...	114.1
Mar 12	101.9	282.8	263.4	110.5	114.3	115.5
Apr 12	101.7	282.8	264.2	109.9	...	116.0
May 12	101.1	282.8	263.9	109.7	...	115.9
Jun 12	100.5	282.4	263.5	109.1	113.2	115.8
Jul 12	99.3	282.4	263.5	107.8	...	115.1
Aug 12	98.9	283.3	264.2	107.3	...	115.6
Sep 12	99.9	283.9	264.9	108.2	111.4	116.4
Oct 12	100.3	283.7	265.4	108.4	...	116.7
Nov 12	100.0	...	...	...	...	...
	Change compared with previous year, per cent					
2007	1.6	1.7	2.3	0.9	2.4	2.2
2008	2.5	3.4	3.4	2.6	3.5	3.3
2009	1.9	1.3	0.2	3.4	3.4	0.3
2010	-3.6	2.3	1.7	-2.8	-3.5	1.6
2011	-0.3	2.8	2.7	-0.5	-0.5	2.7
Nov 11	-0.5	2.6	2.8	-0.4	...	3.0
Dec 11	-0.3	2.5	2.5	0.1	-0.1	2.7
Jan 12	-1.1	2.8	2.5	-0.3	...	2.7
Feb 12	-1.1	2.8	2.5	-0.3	...	2.7
Mar 12	-1.8	2.7	2.4	-0.8	-1.0	2.7
Apr 12	-2.9	2.3	2.2	-2.0	...	2.6
May 12	-3.0	2.1	2.0	-1.9	...	2.4
Jun 12	-3.8	2.2	1.9	-2.4	-2.9	2.4
Jul 12	-4.6	2.3	1.8	-3.2	...	2.4
Aug 12	-5.1	2.6	2.0	-3.6	...	2.6
Sep 12	-3.4	2.5	2.0	-2.4	-4.1	2.6
Oct 12	-3.1	2.3	2.0	-2.5	...	2.5
Nov 12	-3.2	...	...	...	...	...

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.

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