Danmarks Nationalbank

Monetary Review 3rd Quarter Part 1

2011

DANMARKS NATIONALBANK 2011

MONETARY REVIEW 3rd QUARTER 2011

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

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SUMMARY

Following a period of sound economic recovery in the advanced economies, growth declined in the 1st half of 2011, primarily reflecting stagnation in the USA, while growth in the euro area overall was at a normal level. The developments confirm that the road out of a recession combined with a serious banking crisis is long and often bumpy. The slowdown in the 2nd quarter is to some extent attributable to temporary factors.

Over the summer, risk aversion in the financial markets soared, driven by factors such as doubts about fiscal and debt sustainability in several European countries, as well as the political process in the USA in connection with the raising of the federal debt ceiling and the unsustainable public finances. The uncertainty led to a shift from equities to bonds and other safer assets and worsening of money-market conditions. Falling stock indices dampen the economy, while falling interest rates stimulate growth. Overall the economic prospects have become more uncertain, however.

Growth in the Danish economy has been slightly above the potential level in the last two years, but with fluctuations from quarter to quarter. The outlook for the next few quarters is a little weaker on account of lower export market growth and continued consolidation within the private sector. On the other hand, accommodative fiscal policy and low interest rates help to buoy up the economy, which seems to be finding its way back to the normal track.

Growth is expected to be 1.4 per cent in 2011 and around 1.6 per cent in the two following years. The negative output gap has narrowed somewhat over the last couple of years and will shrink further in the coming years. Following a small increase in the 2nd half of 2011, unemployment is set to fall to a level close to the structural level by end-2013. Growth prospects in Denmark are in line with those in the euro area. From a stabilisation perspective there is no need to ease fiscal policy, and attempts at fiscal fine-tuning of the economy are assessed to entail greater risks than benefits. Economic policy should focus on the medium term and on restoring confidence in the private sector.

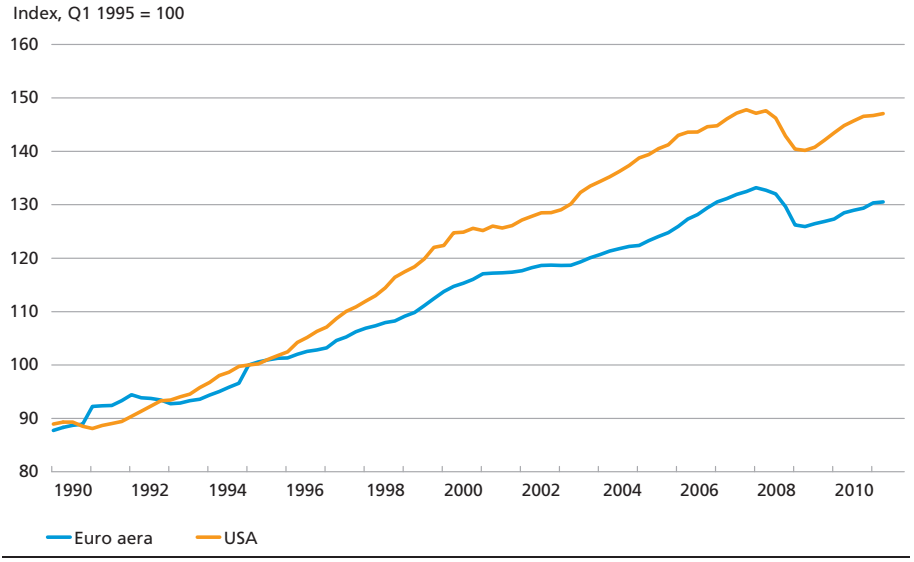
THE INTERNATIONAL ECONOMY AND THE FINANCIAL MARKETS

The cyclical situation and the financial markets

The upswing in the world economy has lost momentum after a period of sound growth and gradual adjustment towards the pre-crisis level of activity. The 1st half of the year ended on a weaker note than expected since national accounts data for the 2nd quarter showed lower growth than in the preceding quarter in most of the key economies. This can be attributed to the earthquake disaster in Japan and energy price hikes in the 1st half of the year, among other factors. Moreover, private consumption in the USA and the euro area has not been sufficiently strong to offset the fiscal tightening measures that, viewed in isolation, dampen domestic demand.

Recent developments are a reminder that the road out of a recession combined with a serious banking crisis is long and often bumpy. Hence, most advanced economies – especially parts of the euro area – have a long way to go before they can be expected to close their output gaps and return to a more normal labour market situation, cf. Chart 1. The growth prospects should be assessed in light of the slowdown in growth potential, one reason being that demographic changes will reduce the influx into the labour market. Furthermore, growth and capacity utilisation rates were unsustainably high in the pre-crisis years, and a return to that situation is neither likely nor desirable.

GDP IN THE USA AND THE EURO AREA, 1990-2011 Chart 1



Source: Reuters EcoWin.

Denmark's most important trading partners have shown diverging growth patterns. Sweden continued its strong upswing in the 2nd quarter, with GDP growing by 1.0 per cent relative to the 1st quarter. Domestic demand was the driving force, and industrial production rose strongly. All the same, growth is expected to be considerably lower next year. Growth in Germany declined from a high rate to 0.1 per cent in the 2nd quarter, reflecting factors such as lower private consumption despite falling unemployment and a negative contribution from net exports as a result of higher imports.

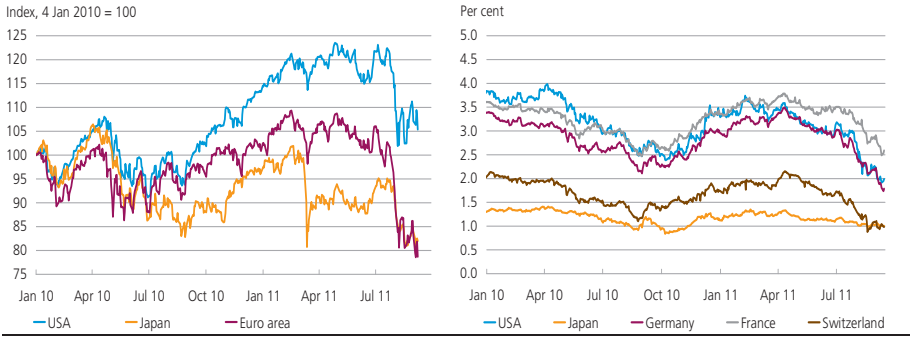
US growth was very low in the 1st half of 2011 – standing at 0.1 and 0.2 per cent in the 1st and 2nd quarters, respectively. This reflected falling public demand and in the 2nd quarter also stagnant private consumption. Revised national accounts data back to 2008 also showed a substantially lower GDP level and a larger fall in GDP from 2008 to 2009 than stated so far. Output for the 1st quarter of 2011 has also been revised significantly downwards. This paints a picture of a more subdued upswing characterised by a very weak housing market, continued high unemployment, uncertainty about fiscal sustainability and not least consumer price hikes. Moreover, growth in the manufacturing sector decreased due to disruptions after the earthquake in Japan in March, which affected the supply of electronic circuits for the US automobile industry, to take one example. The International Monetary Fund, IMF, and the OECD estimate that this may have reduced 2nd quarter growth in the USA by up to 0.25 percentage point,[1] while an equivalent positive growth contribution is to be expected in the 3rd quarter when the automobile industry returns to more normal output levels.

Stock indices have dropped considerably since June, and in mid-September the major US and European indices were back at the levels seen in autumn 2010 and summer 2009, respectively. The European indices saw the strongest downturn, diving by 26 per cent from early June to mid-September, while the US indices fell by 10 per cent, cf. Chart 2 (left). The strong fall in equity prices reflects the downward adjustment of the US gross domestic product, GDP, weaker growth prospects for both the USA and Europe and uncertainty about the content of the fiscal consolidation plans in several European countries and in the USA.

Falling equity prices mean lower wealth and hence reduced consumption opportunities. Stagnant or slightly falling real property prices in several countries have squeezed household wealth further. Low monetary-policy interest rates and falling bond yields in countries that have

[1] The IMF's spill-over report on Japan, prepared in connection with the IMF's Article IV report on Japan, July 2011, and OECD, Recent developments in the automobile industry, *OECD Economic Department Policy Note*, No. 7, 2011.

STOCK INDICES (LEFT) AND YIELD ON 10-YEAR GOVERNMENT BONDS (RIGHT) Chart 2



Note: The stock indices applied are: Standard & Poor's, 500 Composite; Nikkei 225; EUROSTOXX. The most recent observations are from 13 September 2011.
Source: Reuters EcoWin.

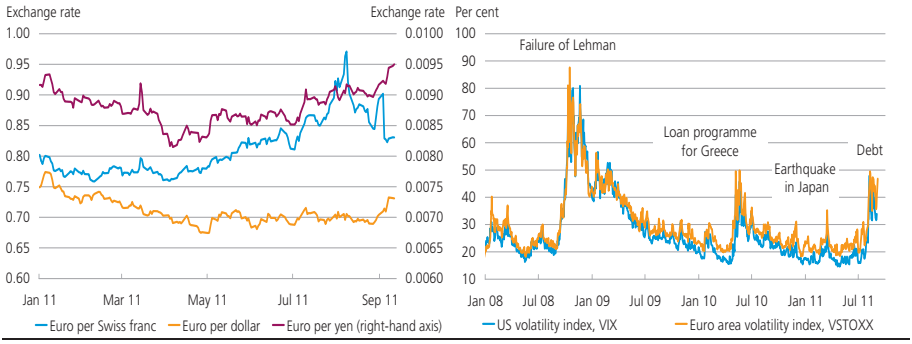
not attracted the attention of the financial markets, e.g. the USA and Germany, point in the opposite direction. Yields on 10-year German government bonds fell from 3.0 per cent in early June to 1.8 per cent in mid-September, cf. Chart 2 (right), and the yield on US government securities fell correspondingly.

The overall impact on economic activity from the opposite effects of lower equity prices and long-term interest rates does not in itself imply a negative contribution to growth. Although far from all countries have benefitted from lower interest rates, the stimulating effect of the falling interest rates would, in a normal business cycle, to some extent be expected to exceed the direct negative impact of the drop in equity prices. All the same, it is doubtful whether the pass-through from the lower government yields is normal due to the problems in the financial sector and the risk of liquidity squeezes. In addition, the uncertainty triggered by the European sovereign debt crisis may have substantial negative effects on both extension of credit by the financial sector, confidence in banks and hence economic activity.

Against the backdrop of the renewed turmoil in the financial markets and the flight to safety, the Swiss franc and Japanese yen rose over the summer vis-à-vis both the euro and the dollar, while the euro remained more or less stable against the dollar, cf. Chart 3 (left). But the dollar strengthened against the euro in the latter half of August and early September. In early August, the rising Swiss franc and Japanese yen led the Swiss and Japanese central banks to take action.[1] When the Swiss

[1] On 3 August the Swiss National Bank announced a narrower target range for 3-month Libor and an increased supply of liquidity in the money market. On 10 and 17 August this was followed up by further liquidity-enhancing measures. The Bank of Japan increased its asset purchase programme by 10 trillion yen and intervened in the foreign-exchange market.

EXCHANGE RATE OF THE EURO VIS-À-VIS SELECTED CURRENCIES IN 2011 (LEFT) AND STOCK MARKET VOLATILITY (RIGHT) Chart 3



Note: *Left:* An increase indicates appreciation of the currency in question against the euro. The Swiss National Bank's lower limit of 1.20 for the Swiss franc corresponds to a ceiling of 0.83 in the Chart. *Right:* The VIX index is the implied volatility on options based on the Standard & Poor's stock index, and the VSTOXX index is the corresponding measure for the EUROSTOXX 50 index. Implied volatility expresses the expected volatility (the expected relative fluctuations in equity prices). A high value of the indices means large expected fluctuations in the stock indices in question over the next 30 days. The most recent observations are from 13 September.

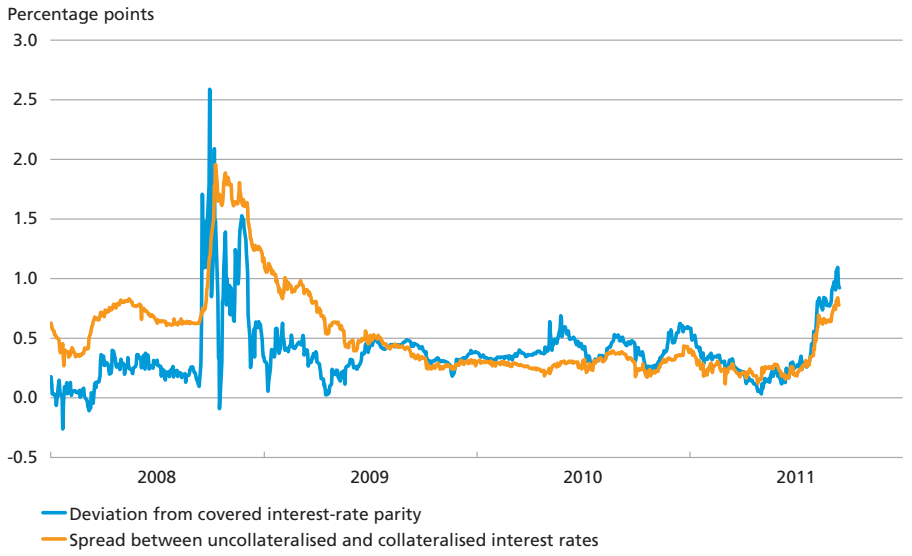
Source: Reuters EcoWin.

franc appreciated further against the euro in early September, the Swiss National Bank introduced a fixed lower limit of 1.20 for the exchange rate. In other words, the Swiss National Bank will intervene to ensure that the price of 100 euro remains higher than 120 Swiss francs. In early September gold also traded at a historically high price of around 1,900 dollars per ounce, and continued high, albeit declining, volatility is expected in the equity markets in the coming month, cf. Chart 3 (right).

From early July, the ongoing uncertainty about the debt situation in southern Europe was reflected in a worsening of conditions in the euro area money markets. Several indicators point to a deterioration. The spread between uncollateralised and collateralised money-market interest rates widened noticeably, but remained somewhat smaller in mid-September than during the crisis in 2008, cf. Chart 4. The banks increased their liquidity reserves and thus their use of the deposit facility of the European Central Bank, ECB, and they also used the marginal lending facility on a few days in order to secure overnight liquidity.

Furthermore, it has become harder and more expensive for European banks to raise dollars in the money market. This is reflected in e.g. the way banks increasingly raise dollars by borrowing in other currencies and swapping into dollars via the FX swap market rather than borrowing dollars directly in the money market, to which access is limited. As a result, the price of dollar funding via FX swaps has risen relative to direct loans in dollars, i.e. the deviation from the covered interest-rate parity between dollars and euro has increased substantially, cf. Chart 4. In two auctions in August and September, dollars were lent via the ECB's dollar

DEVIATION FROM COVERED INTEREST-RATE PARITY BETWEEN EURO AND DOLLARS AND SPREAD BETWEEN UNCOLLATERALISED AND COLLATERALISED MONEY-MARKET INTEREST RATES IN THE EURO AREA Chart 4



Note: The deviation from the covered interest-rate parity is the difference between the costs of borrowing in euro combined with FX swaps from euro to dollars and direct borrowing in dollars.
Source: Reuters EcoWin and Bloomberg.

facility, whereby the ECB on a weekly basis offers dollars against collateral at an excess rate of interest. These are the first times this facility has been tapped since February. The loan amounts were 0.5 and 0.575 billion dollars, respectively, which is far below the level of just under 300 billion dollars seen during the financial crisis in 2008. On 15 September, the ECB announced that in addition to the weekly operations, collateralised 3-month dollar liquidity-providing operations would be conducted in October, November and December.

The lower growth rates and falling energy prices have reduced inflationary pressures in the euro area. Both inflation and core inflation have declined a little in the euro area, where HICP inflation stood at 2.5 per cent in August. But inflation continues to rise in the USA, to 3.8 per cent in August. In mid-September the price of oil was 116 dollars per barrel, having peaked at 128 dollars in the 1st half of the year.

Growth prospects

Overall, the key indicators point to a weakened upswing in the near term, and growth prospects are uncertain. Falling equity prices are reflected in falling wealth, with a dampening effect on the business cycle. Furthermore, this may curb access to credit, and the turmoil will also

affect consumer and business confidence in general, which has traditionally led to postponement of consumption and investment decisions.

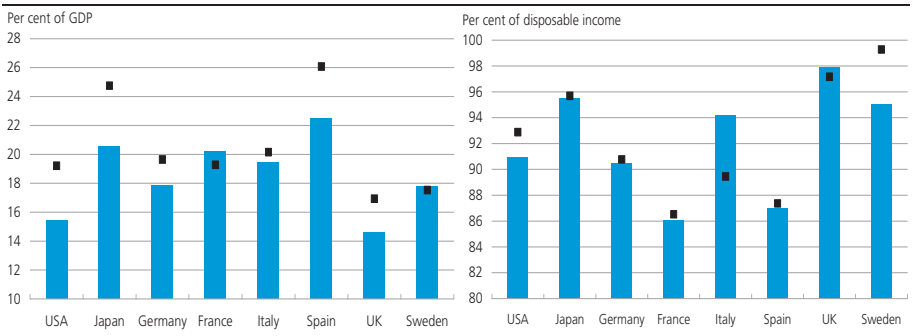
On the other hand, several factors support a continued upswing. Short-term interest rates are very low, and long-term interest rates are falling in many key economies. Add to this sustained high growth rates in the emerging economies and a downward trend in oil prices. Finally, consumption and investment ratios are below the historical averages in a number of countries, cf. Chart 5.

Normalisation of consumption and investment ratios would make a positive contribution to output growth. This process could be delayed by shrinking confidence and loss of wealth on equities, but the preceding relatively long period of restraint on consumption and investment and low and falling interest rates indicate that such further delay would be of limited duration. All in all, this points to a certain growth potential from domestic demand in several countries.

Nevertheless, planned fiscal consolidation measures may curb domestic demand in the short term. There is very little scope for short-term easing to boost growth. Only in countries that are not under pressure from the financial markets may fiscal consolidation be put on hold temporarily. But credible medium-term plans can restore confidence in the sustainability of public finances, thereby supporting growth and helping to keep long-term interest rates at a low level.

The US agreement to raise the federal debt ceiling and the decisions made at the euro area summit in July concerning the sovereign debt crisis in a number of euro area member states initially dampened the turmoil, but since then it has continued. The USA lacks a medium-term plan for fiscal consolidation that will address the current very large

INVESTMENT (LEFT) AND CONSUMPTION (RIGHT) RATIOS FOR SELECTED COUNTRIES, 2010 Chart 5



Note: The dots indicate the average for the period 1995-2008. The investment ratio is calculated as total gross investment relative to GDP, and the consumption ratio as the households' consumption relative to their disposable income.

Source: OECD, *Economic Outlook* 89, May 2011.

deficits and the mounting budget challenges posed by the ageing of the population. It would be an advantage to bring forward the necessary fiscal adjustment in all countries currently or potentially under pressure from the financial markets.

In Europe, renewed turmoil or further spill-overs from economies under pressure constitute the greatest risks to growth. Greece has particularly large debt problems, and both the political and administrative capacities to address the challenges have been weak. Ireland and Portugal are also subject to IMF programmes, and especially Ireland has performed well in terms of adopting and implementing the necessary measures. Ireland has succeeded in turning a large current-account deficit into a small surplus. Spain and Italy have also come under pressure as the markets in July responded to the combination of low growth, high debt and doubts as to whether the announced consolidation measures would be implemented. Unsustainable public finances weaken confidence, and until the public finances have been brought back on a sustainable course, they will pose a downside risk to growth. Moreover, indications of tensions in the euro area money market and vulnerabilities in relation to the banks' portfolios of government securities from the turmoil-ridden member states also cause concern in the financial markets.

US private consumption has stagnated. This reflects factors such as continued negative development in the US housing market, high consumer price inflation and an unchanged high level of unemployment. At the same time, the political stalemate in relation to the US debt problem increases the risk of renewed financial turmoil

In the emerging economies, growth declined in the 1st half of 2011, but from a high level. Although domestic demand is strong in a number of countries, exports may develop more weakly given the modest growth prospects and worsened financial conditions in the advanced economies.

The serious financial turmoil and concerns as to whether the upswing in the world economy can regain momentum in the 2nd half of the year result in a less positive macroeconomic outlook than before the summer. This is beginning to be reflected in the most recent estimates from the international organisations. It is also reflected, with only a short lag, in the consensus expectations of GDP growth, which were adjusted substantially downwards over the summer, particularly for the USA, cf. Table 1.

International economic policy

The renewed turmoil in the capital markets has increased the focus on implementation of monetary and fiscal policies. In the advanced econ-

ESTIMATES OF GDP GROWTH IN SELECTED ECONOMIES Table 1

Per cent	2010	2011	2012	Change since April 2011	
				2011	2012
USA	3.0	1.6	2.1	-1.3	-1.2
Euro area	1.8	1.7	1.0	0.0	-0.7
Germany	3.5	2.9	1.3	0.2	-0.6
France	1.4	1.7	1.2	0.0	-0.5
Italy	1.3	0.7	0.3	-0.3	-0.8
Spain	-0.1	0.7	0.8	0.0	-0.5
UK	1.1	1.2	1.8	-0.6	-0.4
Sweden	5.7	4.3	2.1	0.0	-0.8
Japan	4.0	-0.5	2.4	-0.8	-0.3
China	10.3	9.2	8.8	-0.1	-0.1
India	10.1	7.7	8.1	-0.5	-0.4

Note: Monthly estimates of GDP growth based on questionnaire surveys of more than 700 economists' expectations. The estimates are from September, except those for China and India (August).
Source: Consensus Economics.

omies most central banks have kept their official interest rates low and ensured ample liquidity in the money markets, and governments have introduced a number of fiscal consolidation measures.

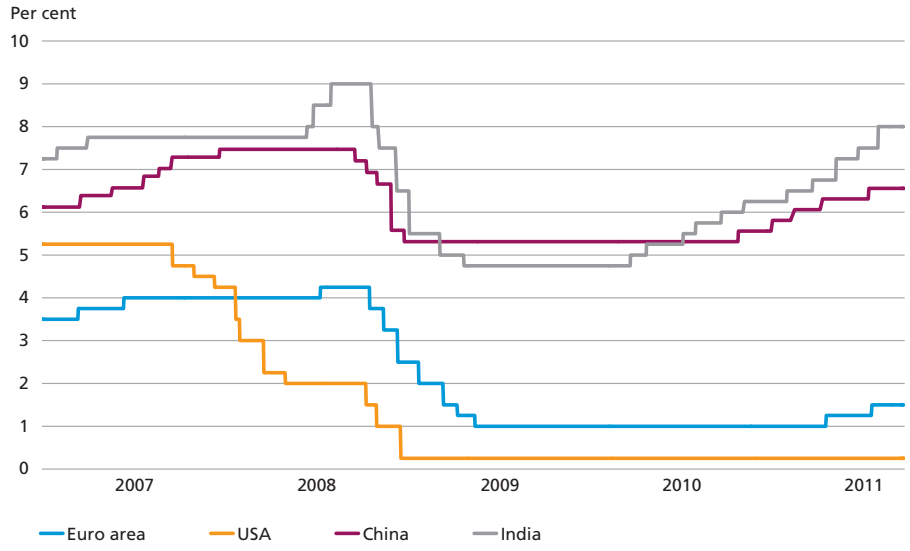
The financial turmoil and the resultant uncertainty about growth prospects has shifted attention away from normalisation of interest rates and rollback of extraordinary measures, which were focus areas in the early summer. Before the turmoil spread, the ECB on 7 July decided to raise its main refinancing rate by 0.25 percentage point to 1.5 per cent to counter inflationary pressures. The Federal Reserve and the Bank of Japan have kept their interest rates unchanged.

In response to the financial turmoil, the Federal Reserve in August announced that with the current economic prospects it would keep the federal funds target rate at an unchanged low level at least until mid-2013. Although interest rates have been raised in a few places, monetary-policy interest rates are generally low. This applies in both the advanced and the emerging economies, cf. Chart 6, where high inflation warrants tighter monetary policy.[1]

In Europe, the plans are to consolidate public finances in accordance with the programmes presented under the Stability and Growth Pact. The consolidation measures are to reduce the government budget deficits to less than 3 per cent of GDP, as required under the Pact. For the period 2010-14 overall, this will require considerable tightening in the

[1] To avoid inexpediently large capital inflows, several countries are applying other instruments in combination with interest rates, cf. the article Fluctuations in International Capital Flows: Challenges and Policy Responses, in this Monetary Review.

MONETARY-POLICY INTEREST RATES IN THE USA, THE EURO AREA, CHINA AND INDIA 2007-11 Chart 6



Source: Reuters EcoWin.

range of 8.5 to 11 per cent of GDP in the most severely affected euro area member states, i.e. Portugal, Greece and Ireland, cf. Chart 7.

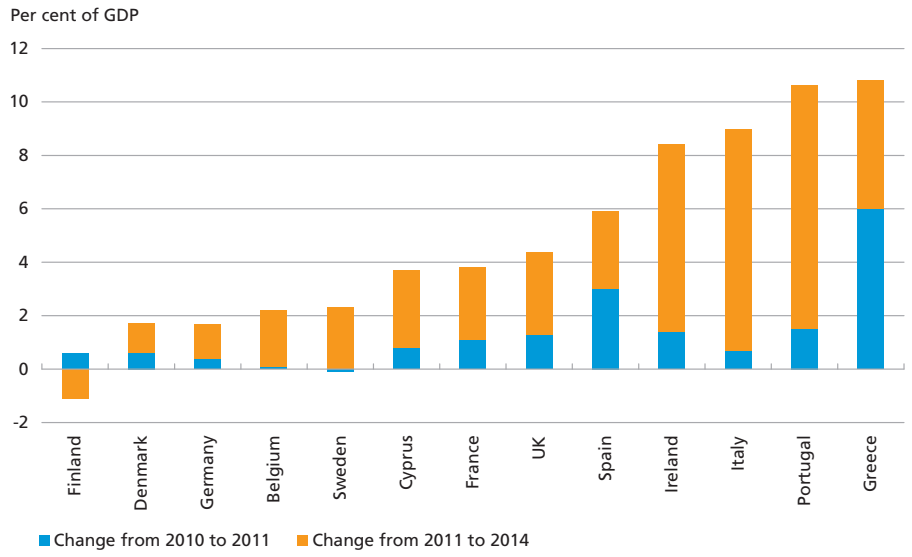
The markets seem to have responded to the postponement of tightening measures until late in the period that several fiscal consolidation plans operate with. Due to the financial turmoil during the summer, the original consolidation plan for Italy has been tightened further, and several measures have been brought forward to 2012-13. As regards structural changes, the plan operates with a higher retirement age. The French government has also launched plans for further fiscal tightening as the financial turmoil has had an impact on the market for French government bonds too.

In these years the advanced economies are feeling the consequences of previous years' boom and accumulation of debt. It takes time to reduce debt and other imbalances after a strong upswing. Credible medium-term consolidation plans and specific political decisions that are two steps ahead of the financial markets are important in order to dampen financial turmoil and rekindle the upswing.

New framework for economic policy cooperation in the EU

The first of the new "European semesters" was concluded at the meeting of the European Council on 23-24 June. In the last phase of the European semester the planned country-specific recommendations were prepared, following assessments of the member states' national reform

PLANNED CONSOLIDATION, CHANGE IN PRIMARY STRUCTURAL BALANCE, 2010-14 Chart 7



Note: The primary structural balance is the aggregate budget balance adjusted for cyclical fluctuations, excluding net interest costs and one-off effects. The European Commission's estimates for 2011-12; estimates stated in the national programmes for 2013-14. For Greece the estimates are stated in the stability programme adopted by the Greek parliament in late June 2011 and then submitted to the Commission. Italy's new measures corresponding to a further 0.5 per cent of GDP on the primary balance in 2014 relative to the stability and convergence programme from May have been included. Data for Ireland is exclusive of the effect of the Irish government's recapitalisation in 2010 of Irish banks for an amount corresponding to approximately 20 per cent of GDP. For Denmark, the Ministry of Finance statement of the primary structural balance as stated in Denmark's convergence programme from May 2011 is applied.

Source: Stability and convergence programmes 2011, Denmark's convergence programme May 2011, IMF's assessment when entering into programme with Portugal.

programmes and their stability or convergence programmes, among other things. Furthermore, the euro area heads of state or government agreed to raise the effective lending capacity of the temporary European Financial Stability Facility, EFSF, to 440 billion euro, and agreement was reached on the treaty concerning the permanent European Stability Mechanism, ESM, which will enter into force on 1 July 2013.

The "Euro Plus Pact", which comprises the euro area member states as well as other EU member states that choose to participate, was adopted in parallel with the first European semester. Moreover, agreement has nearly been reached on a number of other measures that will significantly strengthen economic policy coordination within the EU. These primarily include strengthening the Stability and Growth Pact, introducing surveillance of macroeconomic imbalances and strengthening the fiscal framework.

At an extraordinary summit meeting on 21 July, the euro area heads of state or government adopted a new financial assistance package for Greece totalling 109 billion euro. Furthermore, it was decided to reduce

the rate of interest on and extend the maturity of EFSF loans to Greece, Ireland and Portugal, while Greece will be granted a grace period of 10 years. In addition, the private sector is to be involved on a voluntary basis. But it was emphasised that the involvement of the private sector relates to the Greek sovereign debt only, and that all other euro area member states must and will still fully honour their payment obligations. Finland has demanded pledging of special collateral for the loans to Greece, which has subsequently led to concerns about the agreements made.

At the summit it was also decided to broaden the mandates of the EFSF and the ESM to strengthen these instruments for combating contagion effects in crisis situations. In future, the EFSF/ESM will be empowered to: 1) act on the basis of a precautionary programme, 2) finance recapitalisation of financial institutions through loans to member states – also member states that are not under any programme, and 3) intervene in the secondary sovereign debt markets if the member states in the EFSF/ESM agree on this and if an ECB analysis finds that exceptional financial market circumstances apply and there is risk to financial stability. The new instruments must be approved by the national parliaments before they can be implemented. This process is underway.

MONETARY AND EXCHANGE-RATE CONDITIONS

In recent months the krone has been stable vis-à-vis the euro at a level slightly stronger than its central rate in ERM 2.

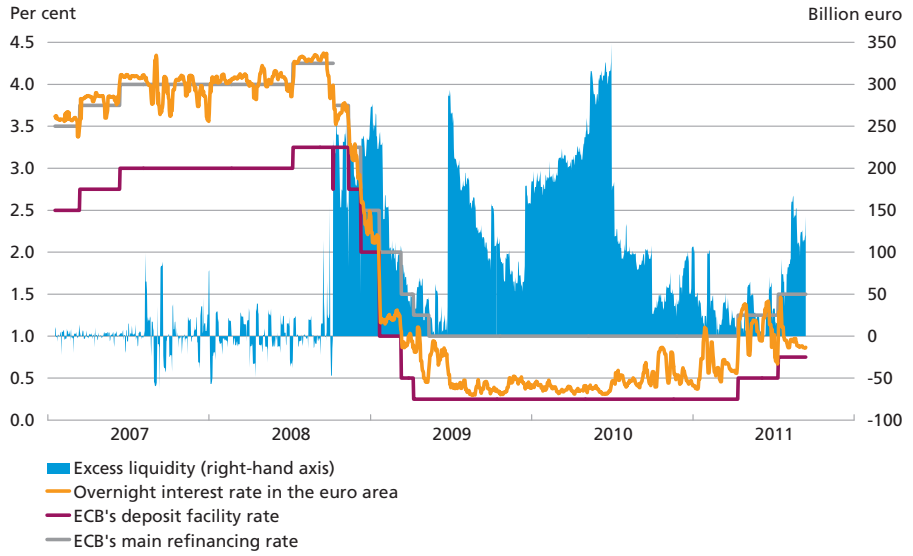
When the ECB raised its interest rates in early July, Danmarks Nationalbank followed suit, raising its monetary-policy interest rates by 0.25 percentage point with effect from 8 July. Renewed tensions in the financial markets in some euro area member states in early August prompted the ECB to announce measures to support liquidity conditions. After that, short-term collateralised money-market interest rates fell in the euro area, and the spread to the corresponding Danish interest rates widened, with a resultant tendency for the krone to strengthen. Against that background Danmarks Nationalbank lowered the rate of interest on certificates of deposit and the current-account rate by 0.1 percentage point, to 1.10 and 1.00 per cent, respectively, with effect from 26 August. With effect from 16 September the rate of interest on certificates of deposit and the current-account rate were reduced by a further 0.1 percentage point, to 1.00 and 0.90 per cent, respectively. On both occasions the lending and discount rates were kept at 1.55 and 1.25 per cent, respectively.

From the end of May to the end of August the foreign-exchange reserve increased by kr. 22.3 billion to kr. 475.7 billion. Most of the increase is attributable to intervention by Danmarks Nationalbank in the market to buy foreign exchange for kroner in August prior to the unilateral interest-rate reduction. The central government's net foreign borrowing also contributed to the increase in the foreign-exchange reserve. The central government contribution is expected to decline in November 2011 in connection with the repayment of kr. 32.1 billion on foreign loans.

The liquidity measures announced by the ECB in early August included to continue conducting its main refinancing operations as fixed-rate tenders with full allotment as long as needed and at least until 17 January 2012 and to supplement its longer-term refinancing operations. Immediately after the announcement, the ECB on 9 August conducted a 6-month refinancing operation in which the rate of interest was fixed at the average rate of the main refinancing operations over the life of the operation.

An amount of 49.8 billion euro was requested and allotted. After this, excess liquidity rose to the highest level since the beginning of July 2010, when two of the ECB's extraordinary 12-month operations were still outstanding, cf. Chart 8.

EXCESS LIQUIDITY AND OVERNIGHT INTEREST RATE IN THE EURO AREA — Chart 8

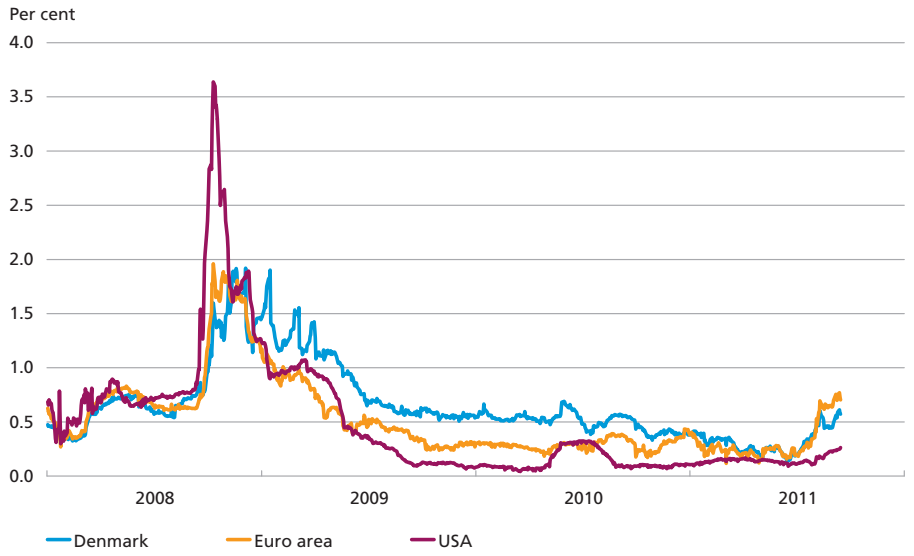


Note: Excess liquidity is the liquidity that exceeds the ECB's statement of the banks' liquidity requirements. The requirements are given by the ECB's reserve requirements and the autonomous factors such as banknotes in circulation and government deposits in the banks. 5-day moving averages for the overnight interest rate in the euro area (Eonia). The most recent observations are from 13 September 2011.

Source: Reuters EcoWin and ECB.

SPREADS BETWEEN UNCOLLATERALISED AND COLLATERALISED 3-MONTH MONEY-MARKET INTEREST RATES IN DENMARK, THE EURO AREA AND THE USA

Chart 9



Note: Uncollateralised interest rates in Denmark, the euro area and the USA are Cibor, Euribor and Libor, respectively. Collateralised interest rates are based on a 3-month interest-rate swap with the overnight interest rate. The most recent observations are from 14 September 2011.

Source: Reuters EcoWin.

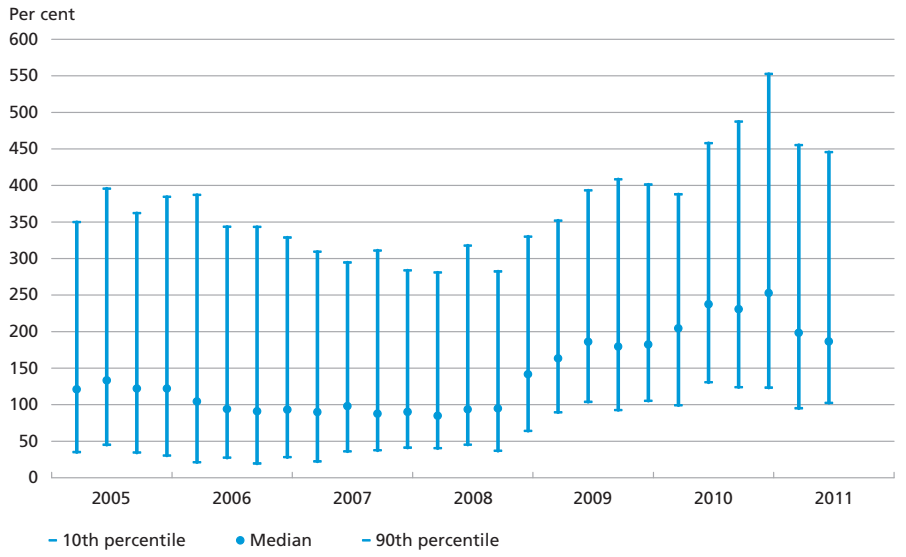
Conditions in the euro area money markets deteriorated in early July as described in the section on the international economy. Short-term money-market interest rates in the euro area and Denmark fell in the light of the rising trend in excess liquidity and the market turmoil in response to the euro area debt crisis. Since early July 2011 the spread between uncollateralised and collateralised money-market interest rates has widened considerably in the euro area and to a slightly lesser extent in Denmark. No similar trend has been seen in the USA, cf. Chart 9. The widening of the spread shows that some banks have difficulty in raising liquidity in the money market.

The Danish banks' excess liquidity cover relative to the statutory requirement has decreased in recent months, cf. Chart 10, but the median bank still has considerable excess cover. However, there are large spreads between the individual banks.

Banks that have used the government guarantee to bridge a customer funding gap are faced with a special challenge in relation to securing funding on market terms. For a few banks with customer funding gaps, government-guaranteed issuances account for a significant share of the balance-sheet total, cf. Chart 11. Debt with individual government guarantees will mature in the period 2011-13, most of it in 2013.

THE BANKS' EXCESS LIQUIDITY COVER RELATIVE TO THE STATUTORY REQUIREMENT

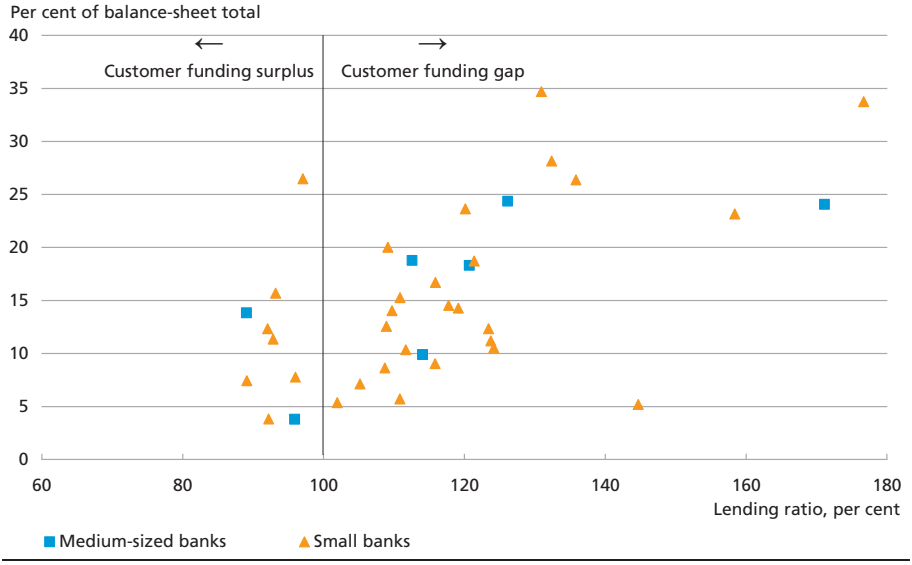
Chart 10



Source: Danish Financial Supervisory Authority.

LENDING RATIO AND GOVERNMENT-GUARANTEED ISSUANCES AS A PERCENTAGE OF THE BALANCE-SHEET TOTAL, END-JUNE 2011

Chart 11



Note: The lending ratio is calculated as lending as a percentage of deposits. Deposits have been adjusted for deposits with individual government guarantees from SPVs issuing bonds against loans with individual government guarantees as collateral. Data includes banks in the Danish Financial Supervisory Authority's groups 2 and 3 with individual government guarantees.

Source: Danmarks Nationalbank and the Financial Stability Company.

As from 10 August 2011, Danmarks Nationalbank expanded the collateral basis for borrowing by banks and mortgage banks from Danmarks Nationalbank to include a number of additional securities types, including "sector company shares", i.e. shares in companies such as DLR Kredit and Nets, which were also eligible as collateral from the autumn of 2008 until February 2011. The expansion of the collateral basis is expected to give the banks access to approximately kr. 10 billion.

On 16 August 2011, Danmarks Nationalbank announced that the collateral basis for borrowing by banks from Danmarks Nationalbank would be expanded with a view to improving the banks' access to liquidity. The expansion of the collateral basis will contribute to improving the banks' access to liquidity in the short term, as well as facilitating the process in connection with the expiry of the individual government guarantees. As is the case in e.g. the euro area and the UK, it will be possible for banks to pledge their lending of good quality as collateral. Danmarks Nationalbank plans to implement this arrangement from 1 October 2011. Further modalities will be laid down in the near future.

In August 2011, a majority of the Folketing (Danish parliament) decided to launch a number of initiatives to improve the opportunities for finding market-based solutions for distressed banks before winding-up under Bank Rescue Package 3 becomes necessary. This consolidation package, known as Bank Rescue Package 4, is described in Box 1.

Capital markets

In June and early July 2011 a number of banks announced that in July and August they would raise their lending rates vis-à-vis households and non-financial corporations by 0.25-0.5 percentage point. At the same time, some of the banks announced that deposit rates would not be raised correspondingly. The banks that have announced rising lending rates jointly account for around two thirds of the banks' total lending to households and the corporate sector. The banks cited increased funding costs in the financial markets and contributions to the Guarantee Fund for Depositors and Investors in connection with the winding-up of Amagerbanken and Fjordbank Mors as the reasons for taking this step. The interest-rate adjustments have not yet been fully reflected in the banks' rates of interest on outstanding loans to households and non-financial corporations. From June to end-July the rate of interest on loans to both sectors increased by just under 0.2 percentage point. Since the turn of the year, there has been an increase of almost 0.5 percentage point, cf. Chart 12, which is more or less in line with the development in monetary-policy interest rates over the same period.

BANK RESCUE PACKAGE 4[1] Box 1

Bank Rescue Package 4 includes the following initiatives:

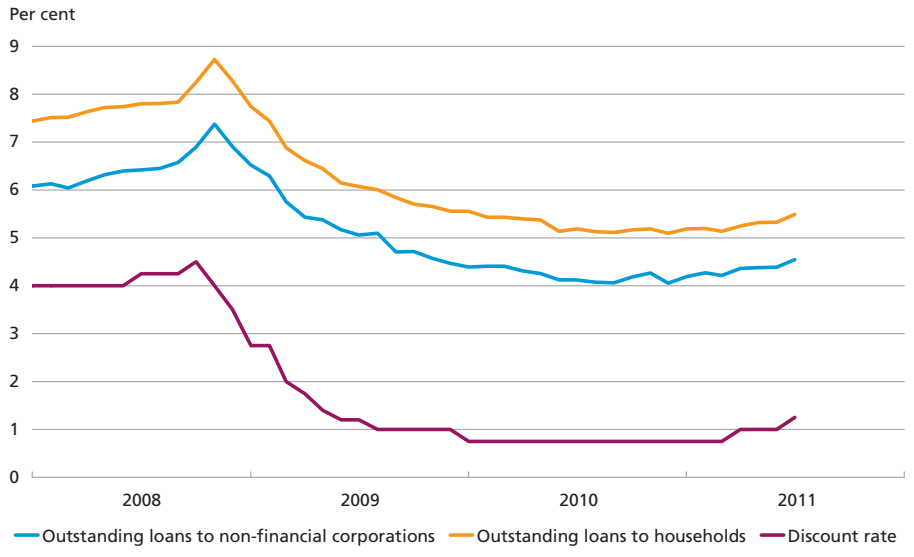
- To strengthen the opportunities for handling distressed banks, the existing compensation scheme will be extended. It will be possible for the government-owned Financial Stability Company to provide compensation to a sound bank that is willing to take over all parts of a distressed bank, except share capital and other subordinate capital. It is a precondition that the distressed bank has concluded an agreement on an individual government guarantee. So in future the sound bank will not only receive compensation from the Guarantee Fund for Depositors and Investors, but also from the Financial Stability Company if this is necessary in order to finalise the acquisition. Furthermore, it will be possible for the Financial Stability Company to provide compensation if a subsidiary of the Financial Stability Company acquires a distressed bank, except share capital and other subordinate capital, and immediately afterwards sells the sound part to a sound bank without any losses to non-subordinate creditors. In either case, the compensation will be determined on the basis of the loss which the government would be expected to incur on the individual government guarantee, were the distressed bank to be wound up under Bank Rescue Package 3.
- With a view to supporting consolidation among banks, a scheme is introduced whereby banks can, until end-2013, apply for individual government guarantees in connection with mergers. The scheme will be administered by the Financial Stability Company. Banks may apply for individual government guarantees if the merger means that existing senior debt matures. Furthermore, banks may apply for individual government guarantees if at least one of the two merging banks has an individual government guarantee. Bonds issued under a new individual government guarantee will be eligible as collateral vis-à-vis Danmarks Nationalbank.
- A working group will be set up under the Ministry of Economic and Business Affairs to look into the opportunities for establishing a consolidation fund under the auspices of the Guarantee Fund. This fund would be able to contribute to the costs of mergers. Moreover, the working group will look into the financing of the Guarantee Fund with a view to spreading the burden more evenly on the sector in connection with contributions to the Fund.
- An expert group will be set up under the Ministry of Economic and Business Affairs with a view to preparing future rules on systemically important financial institutions in Denmark. Among other things, this group is to consider the criteria to be met for an institution to be systemically important in Denmark and the instruments that may be used in relation to systemically important institutions that become distressed.

[1] Agreement of 25 August 2011 between the Danish government (Liberals and Conservatives) and the Social Democrats, the Danish People's Party, the Socialist People's Party, the Social Liberals and the Liberal Alliance on a number of consolidation initiatives.

The yield on short-term mortgage bonds fell considerably in July and the first part of August 2011, standing at 1.1 per cent in mid-September. The yield on long-term bonds has also fallen, to 4.4 per cent in mid-September, cf. Chart 13.

BANKS' INTEREST RATES ON OUTSTANDING LOANS TO HOUSEHOLDS AND NON-FINANCIAL CORPORATIONS

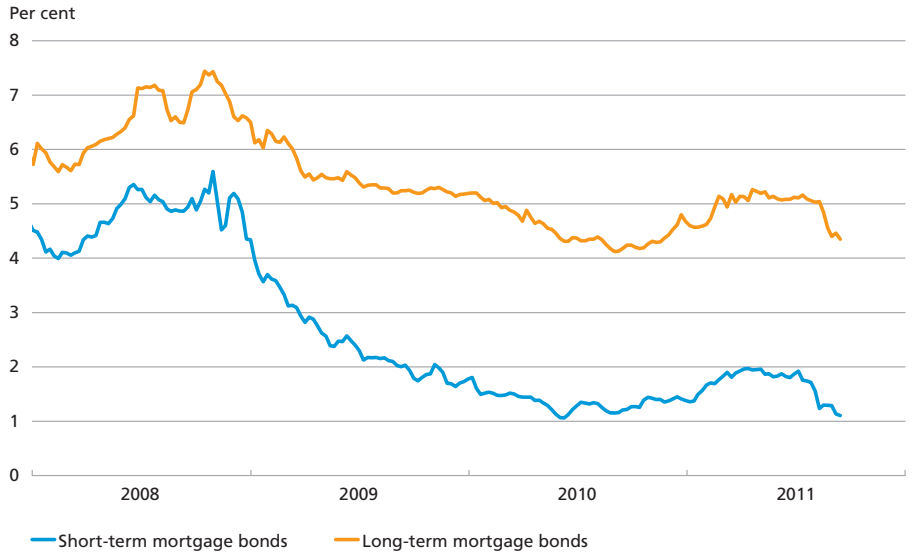
Chart 12



Note: The most recent observations are from July 2011.
Source: Danmarks Nationalbank.

YIELDS ON DANISH MORTGAGE BONDS

Chart 13

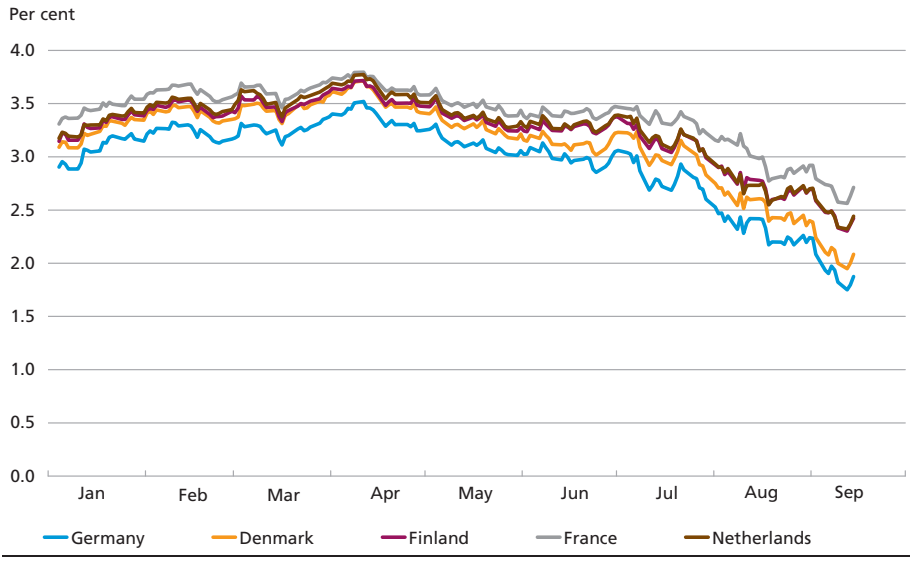


Note: The 1-year yield on short-term mortgage bonds (fixed bullets) is a weekly average, with 14 September 2011 as the most recent observation. The long-term mortgage bond yield is an average effective yield based on 30-year fixed-rate callable mortgage bonds, stated on a weekly basis, i.e. the average of the effective yield achieved by investors on newly issued mortgage bonds purchased that week. The most recent observations are from calendar week 37.
Source: Nordea Analytics and Association of Danish Mortgage Banks.

The yield on 10-year government bonds has declined in a number of countries since June 2011. This reflects the flight to safety as described in the section on the international economy. Since the turn of the year, the yield on 10-year Danish government bonds has fallen by 1.0 percentage point to 2.1 per cent in mid-September. The trend has in particular been evident since mid-July, cf. Chart 14. The development in 10-year Danish government bond yields mirrors the development in the corresponding German yields as the maturity-adjusted yield spread between Danish and German government bonds remained stable at around 0.2 percentage point in mid-September. Danish government bond yields remained a littler lower than those of e.g. the Netherlands and Finland.

Fjordbank Mors became distressed in June 2011 when it was no longer able to fulfil the solvency requirement. An attempt by the sector to find a market-based solution failed, and the bank therefore had to conclude an agreement with the Financial Stability Company to transfer the bank's assets to a subsidiary of the Financial Stability Company (Fjordbank Mors af 2011). The transfer took effect on 24 June 2011 and comprised all assets. Payment for the assets was initially set at kr. 7.8 billion, corresponding to approximately 74 per cent of the uncollateralised, non-subordinate claims. At the time of the transfer there were known obligations of kr. 3.6 billion that were not assumed. The payment may be increased at a later date. In that case, the subsidiary of the Financial

YIELDS ON 10-YEAR GOVERNMENT BONDS
IN SELECTED COUNTRIES IN 2011 Chart 14



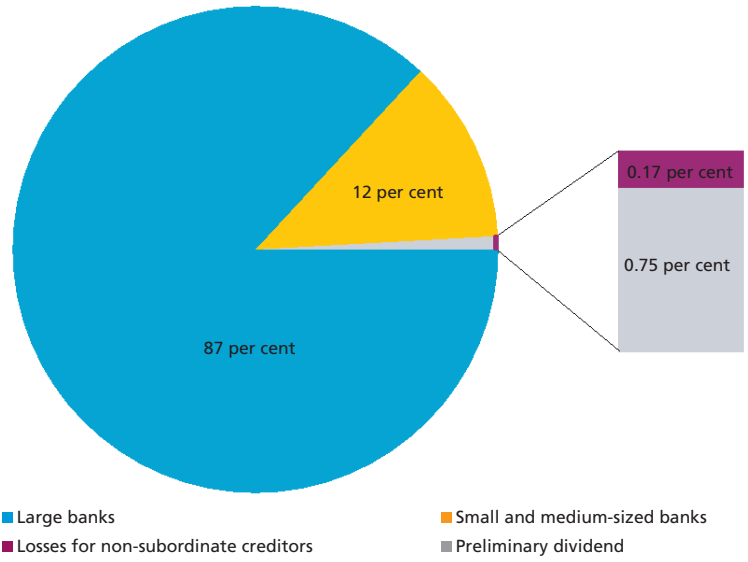
Note: Maturity-adjusted yields. The most recent observations are from 14 September 2011.
Source: Danmarks Nationalbank.

Stability Company will take over further obligations. Customers with net deposits up to an amount of 100,000 euro, equivalent to approximately kr. 745,000 were fully covered by the Guarantee Fund for Depositors and Investors, and the full amount of their claims remained at their disposal. According to the preliminary statement, creditors whose deposits exceeded this amount are likely to suffer losses in the range of 26 per cent of the excess amount. The customers did not experience any difference in the day-to-day handling of their bank transactions and were still able to use their payment cards, e-banking etc.

Fjordbank Mors became the second bank to be wound up under the scheme introduced by Bank Rescue Package 3. The aggregate losses of non-subordinate creditors of Amagerbanken and Fjordbank Mors amount to less than 2 per mille of the total non-subordinate claims on Danish banks, cf. Chart 15.

On 1 July, Nykredit Realkredit and BRFkredit, among others, were downgraded by one of the international credit rating agencies. The ratings of mortgage bonds are assessed on the basis of both the credit rating of the issuer and the quality of the underlying assets. Consequently, the downgrading of these issuers does not necessarily affect the classification of the bonds issued by the affected issuer. The down-

NON-SUBORDINATE OBLIGATIONS OF DANISH BANKS Chart 15



Note: Non-subordinate obligations as at 31 December 2010. Losses for non-subordinate creditors, including the Guarantee Fund for Depositors and Investors and the central government, have been stated on the basis of the Financial Stability Company's announcements of 29 June 2011 (Amagerbanken) and 26 June 2011 (Fjordbank Mors).

Source: Danish Financial Supervisory Authority, Financial Stability Company and own calculations.

grading of BRFkredit led to an immediate downgrading of covered bonds issued by BRFkredit. The downgrading of Nykredit did not have any immediate impact, but subsequently a small part of Nykredit's bonds, used for financing mortgage loans to non-financial corporations, have been downgraded. The downgrades have not had any significant price effect on the bonds.

The downgrades reflected factors such as a shift in the rating agency's view of the refinancing risk linked to adjustable-rate loans, as well as its expectations of the earnings potential of the mortgage banks.

On several occasions the mortgage banks have been met with requirements to increase the coverage behind the bonds issued in order to avoid downgrading. Several mortgage banks have chosen to do so. Moreover, several mortgage banks are adjusting their business models, including by raising the interest margin. This is done in order to strengthen their financial buffers, but also to contribute to appropriate price differentiation on the mortgage credit products offered.

In 2011, as in the two preceding years, the European Banking Authority, EBA, performed a stress test of the resilience of the European banks to a negative shock to the economy. The results of this year's test, comprising 90 banks in 21 EU member states, were published on 15 July 2011. Four Danish credit institutions participated: Danske Bank, Jyske Bank, Nykredit and Sydbank, all of which showed considerable resilience. At the end of the stress scenario, the Danish credit institutions had Tier 1 ratios in the range of 9.4-13.6 per cent, which is well above the test's minimum criterion of 5 per cent. The stress test also showed that the exposure of Danish credit institutions to the most vulnerable EU member states is very limited.

In autumn 2010 a working group was established to examine the opportunities for introducing a supplementary reference rate besides Cibor in the Danish money market. Danmarks Nationalbank, the Danish Bankers Association, the Association of Danish Mortgage Banks and the Danish Mortgage Banks' Federation are represented in the working group. The group published its findings on 8 July 2011. In the assessment of the group, Cita swaps would, at present, provide the best basis for a supplementary reference rate curve.[1] The work to prepare rules and practices is ongoing under the auspices of the Danish Bankers Association and is expected to be completed by the end of 2011.

[1] See the article on the money market in this Monetary Review for a more detailed description of the Danish money market and Cita swaps.

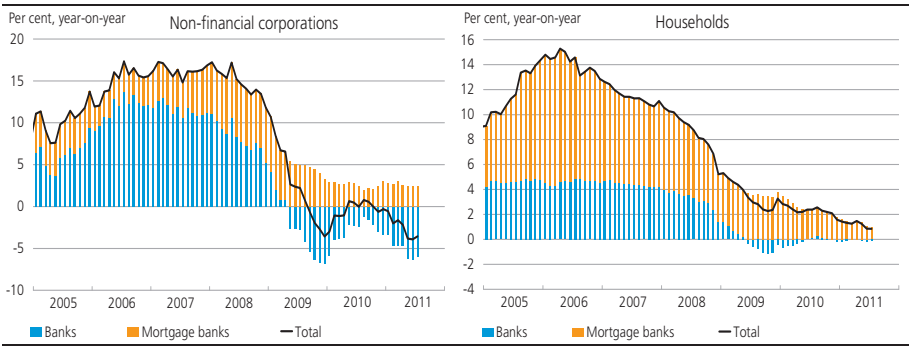
Credit developments

Total lending by banks and mortgage banks to households and non-financial corporations was more or less unchanged from May to end-July 2011. Total lending to households has risen moderately by kr. 5.6 billion since the turn of the year, to kr. 2,319 billion at end-July. At the same time, total lending to non-financial corporations has declined by kr. 15.5 billion, to kr. 1,005 billion. Year-on-year growth in lending to non-financial corporations has been negative since October 2010, while growth in lending to households was 0.8 per cent in July 2011, cf. Chart 16. For lending to non-financial corporations, a shift is still seen from banks to mortgage banks.

Around two thirds of the decline in bank lending to the corporate sector from January to July 2011 is attributable to the compilation method. Changes to the group structure of the Financial Stability Company meant that the previous subsidiaries which were acquired under Bank Rescue Package 1, as well as Roskilde Bank, were merged into FS Bank A/S and FS Finans A/S. The latter does not have a banking licence and is therefore not included in Danmarks Nationalbank's lending statistics, which contributes to a substantial fall in total lending. Moreover, some foreign banks with branches or subsidiaries in Denmark have repatriated their operations. Finally, the banks' losses increased during the financial crisis, and as these losses are removed from their balance sheets they are also eliminated from the lending portfolio. The rest of the decline in corporate lending is broadly distributed on the banks.

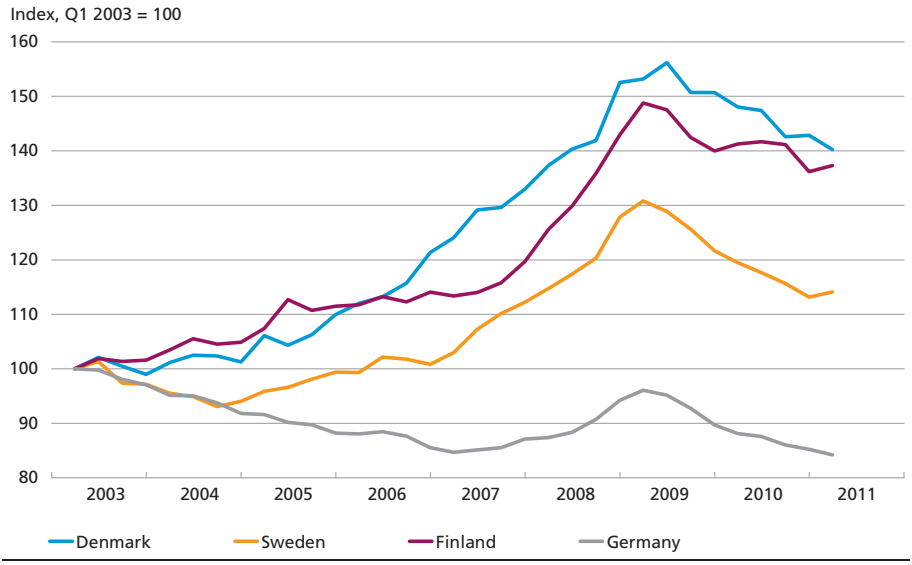
Danmarks Nationalbank's lending survey points to waning demand for loans, which is supported by the current cyclical position with firms saving up. The lending survey also shows that the banks' credit policies

GROWTH IN LENDING TO NON-FINANCIAL CORPORATIONS AND HOUSEHOLDS BROKEN DOWN BY BANKS AND MORTGAGE BANKS — Chart 16



Note: Seasonally adjusted lending by banks and mortgage banks located in Denmark. Contribution to year-on-year growth. The most recent observations are from July 2011.
Source: Danmarks Nationalbank.

LENDING TO NON-FINANCIAL CORPORATIONS RELATIVE TO GDP Chart 17



Note: Portfolios of loans from MFIs to domestic non-financial corporations relative to the annual seasonally adjusted GDP. For Finland, the counterparty area is the euro area, with other member states than Finland accounting for only a very small share of total loans. Quarterly data. The most recent observations are from the 1st quarter of 2011.
Source: ECB's Statistical Data Warehouse, Deutsche Bundesbank and Reuters EcoWin.

have remained basically unchanged since the strong tightening in 2008 and early 2009, but that the banks now to a greater extent differentiate between their various customer groups. Conditions have been tightened for firms with poor earnings, while those with sound earnings have gained easier access to loans.

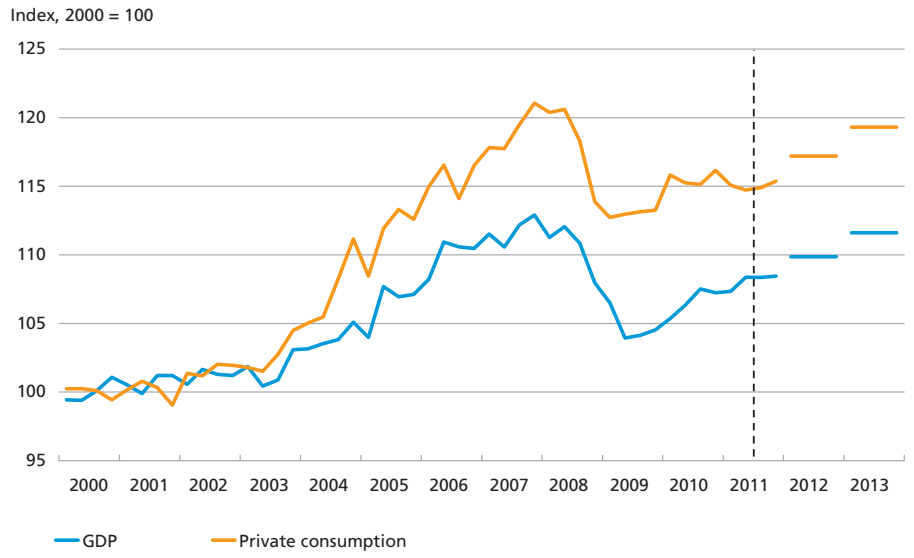
Total lending by banks and mortgage banks to non-financial corporations as a ratio of GDP has been declining over the last two and a half years, but remains higher than in the period before the autumn of 2008. The same pattern has been seen in other countries, cf. Chart 17.

THE DANISH ECONOMY

Growth in the Danish economy has hovered around an annual rate of approximately 2 per cent since mid-2009, cf. Chart 18. This is slightly higher than the growth in the output potential, thereby contributing to reducing the spare capacity that arose after the crisis. This trend continued in the 1st half of 2011.

Growth in the economy in 2010 was mainly driven by private consumption, exports and public investment. In the 1st half of 2011 private consumption declined a little, while exports continued to grow. Public consumption has also risen in this period, while business investment has been falling.

GDP AND PRIVATE CONSUMPTION Chart 18



Note: GDP and private consumption in volumes. The projection after 2011 is shown as annual averages.
Source: Statistics Denmark and Danmarks Nationalbank's forecast.

For the period since 2000 overall, private consumption has risen considerably more than GDP. One reason is that growth in disposable income has exceeded output growth due to tax cuts and falling interest costs.

The outlook for the next few quarters points to weaker growth than in the 1st half of the year. This is mainly attributable to worsened prospects among Denmark's trading partners, which has led to a sizeable downward adjustment of export market growth, both in the 2nd half of 2011 and in 2012, cf. Appendix 1. This will invariably have an impact on growth and employment in Denmark. On the other hand, fiscal policy remains expansionary following considerable easing in 2009 and 2010, as only few of these measures have been rolled back.[1] At the same time, the level of interest rates is unusually low. This buoys up the economy. For 2011 as a whole, GDP growth is estimated at 1.4 per cent.[2] For the next two years a growth rate of around 1.6 per cent is anticipated, cf. Table 2.

Private consumption fell in the 1st half of 2011 after having increased steadily for a while. Households continue to save up a large share of their disposable income, and the consumption ratio is somewhat below its long-term average.

1 The retirement reform which the Liberals, the Conservatives, the Danish People's Party and the Social Liberals agreed on in May has not been included in the forecast as it has not been adopted by the Folketing. If the reform is adopted, fiscal policy will be more accommodative in 2012 due to disbursement of contributions made to the early retirement scheme, cf. *Monetary Review*, 2nd Quarter 2011. It is assessed that such disbursements will boost growth in private consumption by 0.6 percentage point and GDP growth by 0.2 percentage points in 2012.

2 Based on statistical information available up to and including 12 September 2011.

KEY ECONOMIC VARIABLES Table 2

Real growth on previous year, per cent	2010	2011	2012	2013
GDP	1.7	1.4	1.6	1.6
Private consumption	2.3	-0.5	1.9	1.8
Public consumption	0.7	0.3	0.7	0.2
Residential investment	-9.0	8.2	2.4	4.0
Public investment	6.9	5.2	-4.8	-7.2
Business investment	-2.6	-5.0	8.3	7.1
Inventory investment[1]	0.9	0.6	0.1	0.1
Exports	3.8	7.1	2.1	2.6
Manufactured exports	6.1	7.5	4.2	3.7
Imports	3.9	5.7	3.3	3.4
Total employment, 1,000 persons	2,764	2,761	2,764	2,778
Gross unemployment, 1,000 persons	165	164	162	148
Net unemployment, 1,000 persons	114	110	112	102
Balance of payments, per cent of GDP	5.3	5.9	5.2	5.0
Government balance, per cent of GDP	-2.8	-4.0	-3.9	-2.8
Cash prices, per cent year-on-year	2.8	-0.9	0.8	1.6
Consumer prices, per cent year-on-year	2.2	2.6	1.9	1.8
Hourly wages, per cent year-on-year	2.6	2.2	2.9	3.2

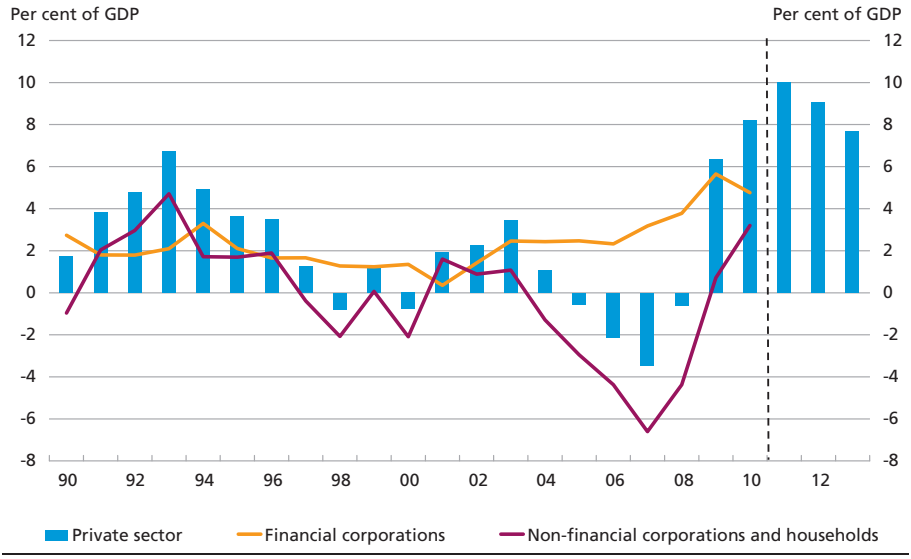
[1] Contribution to GDP growth.

In the last three years non-financial corporations have increased their savings and reduced their level of investment. Taken as one, households and non-financial corporations have turned a large savings deficit of almost 7 per cent of GDP in 2007 into a savings surplus of just over 3 per cent of GDP in 2010, cf. Chart 19. Last year's savings surplus was curbed by the fact that the proceeds from pension yield taxation were very large. This year, normalisation of the pension yield tax will contribute to increasing the private sector's savings surplus. In relation to the consolidation taking place in the household sector, it should be borne in mind that household loan to value ratios surged when house prices fell in 2007-09.

There are no indications that the weak development in private consumption will change in the 2nd half of 2011. Retail sales have been waning over the summer, consumer confidence has declined, and the housing market is weak. Households are expected to continue to consolidate in the coming years. The private sector savings surplus is expected to be substantial in 2011-13 as a result of an almost unchanged consumption ratio and a slightly increasing investment ratio. The savings ratio of the financial corporations is also considerable, and hence the private sector's aggregate savings ratio of 8 per cent of GDP in 2010 is very high in a long-term perspective.

Corporate investment has been declining in recent years and is currently very low in relation to output. It is expected to rise in the coming

SAVINGS IN CORPORATIONS AND HOUSEHOLDS Chart 19



Note: Savings in the private sector are the sum of savings in financial and non-financial corporations and households. The savings surplus remained high in the financial sector during the crisis, despite the banks' poor financial performance. This is because loan impairment charges reduce the financial result in the period when the impairment charges are made, while the sector's net lending is only affected to the extent that the impairment charges are subsequently realised as losses.

Source: Statistics Denmark and Danmarks Nationalbank.

years, thereby making a positive contribution to demand. This development should be seen in the light of a reduction of the considerable spare capacity that arose after the slowdown. This is particularly true of the industrial sector, where capacity utilisation is now back at the average level. Residential investment has risen from a low level since mid-2010 and a modest increase is expected in the projection.

The import ratio dropped in connection with the downturn, but has been rising again since 2009. This undoubtedly reflects the re-establishment of some of the production chains across national borders that were disrupted in connection with the plunge in demand. However, it also shows that some imports cannot simply be replaced by Danish production, even in a situation with spare capacity.

All in all, the Danish economy is assessed to be moving ahead at a moderate pace with prospects of growth a little above its potential rate, although the course remains uneven. Over the forecast period actual output continues to rise towards potential output, defined as the output level that is sustainable in the long term. The rise in unemployment in 2008-10 brought it back to and slightly above the level that is compatible with stable price developments in the long term.

THE HOUSING MARKET

Following a moderate recovery in the 2nd half of 2009 and in 2010, the housing market has slowed down again. According to Statistics Denmark, seasonally adjusted cash prices for single-family houses fell by 0.7 per cent in the 1st quarter of 2011 compared with the preceding quarter. Hence, prices were only marginally above the level one year earlier. According to the statistics of the Association of Danish Mortgage Banks, prices fell further in the 2nd quarter of 2011. While prices in the rest of Denmark have been more or less flat since 2009, prices in the Capital Region have risen by 11 per cent. But in the 1st half of 2011 house prices also fell in this region, so that they declined in all regions of the country.

In recent years housing sales have been at a level well below the historical average. At the same time, the number of homes for sale continues to rise, also in the Capital Region. With a large supply of homes for sale and modest turnover, the time on market remains very long – typically almost 9 months for houses and slightly less for owner-occupied flats, but there are large regional differences.

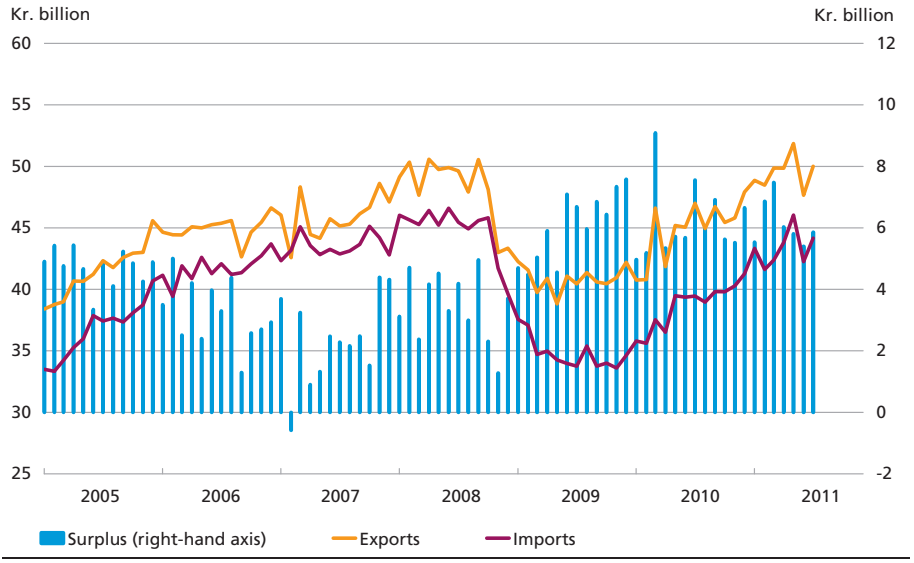
Overall the housing market is still in an adjustment phase. Prices are declining and the low turnover, the large supply and hence the long time on market should be expected to squeeze prices further. Buyers and sellers are still far apart. The financial turmoil over the summer, lower growth prospects and, recently, uncertainty about potential housing policy initiatives may have led to increased uncertainty among buyers. On the other hand, the considerable fall in both short-term and long-term interest rates helps to buoy up the market. Furthermore, household incomes are increasing. In view of these factors house prices are expected to fall by around 1 per cent this year and to rise only slightly in the coming years.

FOREIGN TRADE

Exports rose from the trough in early 2009 until the spring of 2011, and exports of goods are back at the level seen just before the crisis in 2008, cf. Chart 20. However, exports have slowed down in recent months, in step with the flattening of world trade.

Imports of goods have developed in parallel with exports. The rise in imports in the last six months has mainly been driven by imports of semi-manufactured goods for the corporate sector. This is in line with the perception that Danish growth was to a large extent supported by exports in the 1st half of 2011.

FOREIGN TRADE, GOODS — Chart 20



Note: The most recent observations are from July 2011.
Source: Statistics Denmark.

In the projection, exports take a more negative course than assessed in June as a result of the worsened prospects in many of Denmark's export markets. All the same, Danish industrial firms had a relatively positive view of the situation in relation to export orders at the start of the 3rd quarter. In 2012 export volumes are expected to rise by a mere 2.1 per cent. This is substantially lower than the 7.1 per cent expected for this year.

In volume terms, the market shares of the Danish industrial sector have been decreasing for some years, but in value terms they have remained unchanged since 2006. The more positive development in value terms reflects how Danish industrial firms have achieved higher prices in the export markets, while at the same time the price of imports has fallen, i.e. Denmark's terms of trade have improved.

In the 12 months until July, the balance of payments showed an accumulated surplus of kr. 110 billion. This is an increase on the preceding 12-month period, in which the surplus was kr. 75 billion. The increase is primarily attributable to surpluses on trade in services and on the investment income item, while the surplus on trade in goods has been flat over the last year. The current-account surplus is expected to fall a little over the forecast period.

LABOUR MARKET AND CAPACITY

Employment

Employment has been more or less unchanged since the beginning of 2010, but rose in the 2nd quarter of 2011, cf. Chart 21. In the projection, a small fall is expected in the coming quarters. As growth picks up again, employment rises towards the end of the forecast period, by some 20-25,000 persons compared with the trough at the end of 2010.

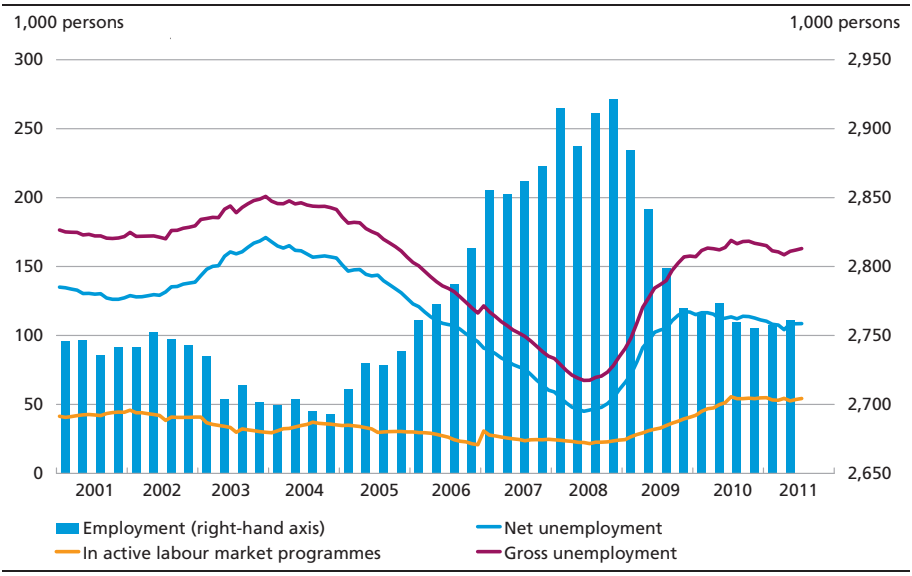
Despite having fallen by almost 160,000 since 2008, employment is still above the level seen before the boom. Since the extraordinarily high level of employment in 2007-08 was to a large extent a result of overheating of the economy, it was not sustainable. It is assessed that there is scope for a sustainable increase in employment of approximately 45,000 compared with the present level.

Having fallen strongly during the downturn, employment in the construction sector has been flat in the last few years. The current level of employment in the sector, i.e. 165,000, is far higher than in the 1990s and in line with the level in the early 2000s before the boom set in.

Capacity

Assessments of capacity pressures in the economy are often based on a measure of the output gap, cf. Box 2 and the article "Potential Output

EMPLOYMENT AND UNEMPLOYMENT — Chart 21



Note: From January 2007, recipients of social benefits in activation (ready to enter the labour market) are included in those in active labour market programmes. The most recent observations are from July 2011 for unemployment and the 2nd quarter of 2011 for employment.

Source: Statistics Denmark and own calculations.

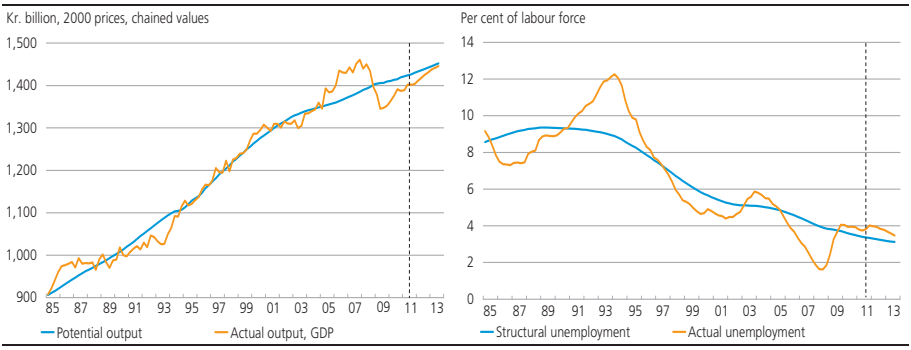
in Denmark" in this Monetary Review. The output gap indicates how much actual output deviates from potential output, defined as the output level that the economy can sustain without inflationary pressures arising. The output gap was positive and very large during the most recent boom, but narrowed abruptly and became clearly negative during the downturn. The development in the output gap illustrates a very uneven cyclical pattern in the latter half of the 2000s.

The last two years' recovery has caused the output gap to narrow compared with 2009, when the economy bottomed out. This trend is expected to continue in the coming years so that the gap will almost have closed by end-20013, cf. Chart 22, left.

The reason why the gap is narrowing despite the prospect of a moderate economic recovery is that the underlying output potential in the Danish economy is rising by only around 1 per cent a year. This should be viewed against the backdrop of relatively low underlying productivity growth, among other factors, following a period with a very low level of investment. Although investment is set to rise, the level will be so low in the coming years that it will only just be sufficient to sustain the present capital stock. This will reduce the growth potential of the Danish economy in the near term. Potential output is expected to continue to grow at a moderate pace beyond the forecast period. The Ministry of Finance estimates that the annual increase in the potential of the economy will be 1.3 per cent from 2014 to 2020, but somewhat higher if the retirement and unemployment benefit reforms are implemented as planned.

Quarterly GDP growth varies from quarter to quarter and the statements are subject to considerable uncertainty. The dampening of potential growth relative to the level of the 1990s means that if GDP growth

OUTPUT AND UNEMPLOYMENT RELATIVE TO STRUCTURAL LEVELS — Chart 22



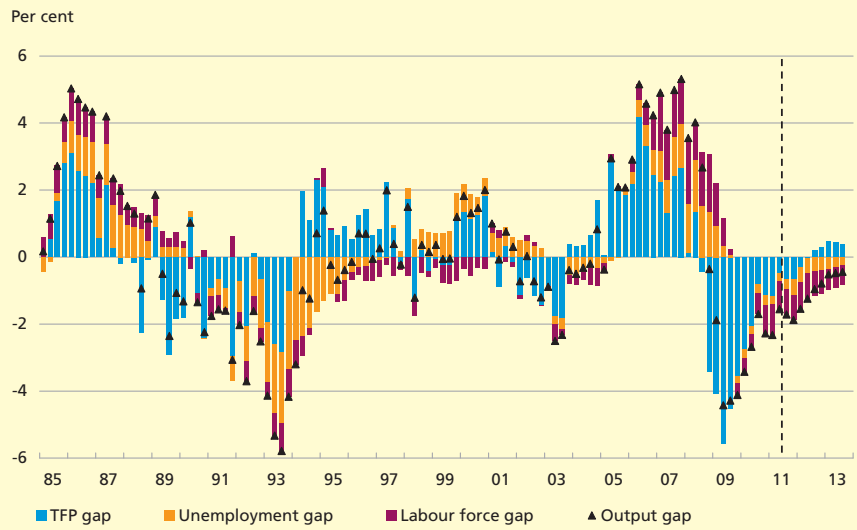
Note: The structural levels for output and unemployment are the levels that can be achieved without generating inflationary pressures in the long term.
Source: Statistics Denmark and own calculations.

BREAKDOWN OF THE OUTPUT GAP Box 2

The output gap can be broken down into contributions from unemployment, the labour force and total factor productivity, which is an aggregate expression of how efficiently the factors of production are used in the production process.[1]

The large negative output gaps that followed in the wake of the financial crisis initially materialised as sharp declines in total factor productivity, TFP, which in 2009 was well below the level that would have been consistent with a normal business cycle, cf. Chart 23. This is in contrast to the large negative output gaps in the early 1990s, which were mainly attributable to high unemployment. One reason could be the sudden eruption of the financial crisis in 2008, as it typically takes some time for firms to adjust their demand for labour in connection with cyclical reversals. If the downturn is abrupt, firms therefore initially respond by utilising resources less intensively, which makes TFP fall, while the effect of the cyclical reversal on the labour market is somewhat lagged.

BREAKDOWN OF THE OUTPUT GAP Chart 23



Note: Data after the 2nd quarter of 2011 is based on Danmarks Nationalbank's forecast.
Source: Statistics Denmark and own calculations.

Indeed, the composition of the output gap has changed as expected since the onset of the crisis: TFP is almost back at a normal, cyclically neutral level, and hence the current negative output gap is primarily reflected in modest spare capacity in the labour market.

All the same, it is worth noting that the net unemployment gap still makes a very modest contribution to the output gap; in other words adjustment of the labour market to the cyclical reversal has to a large extent taken place via a pronounced decrease in the labour force. Again, this contrasts with the typical pattern in the 1990s, when the cyclical shift was chiefly reflected in fluctuations in the unemployment gap, while the cyclical sensitivity of the labour force was limited.

CONTINUED Box 2

Compared with this pattern, recent years have seen a shift in the typical composition of the output gap, in that cyclical fluctuations are now to a larger extent than previously reflected in cyclical changes in the size of the labour force.

Part of the explanation could be increased use of active labour market programmes: those in activation are not included in the compilation of net unemployment and hence not in the labour force either if the latter is calculated as the sum of those in employment and net unemployment. So if a person goes from, say, employment to activation, this is registered as a decline in the labour force, while net unemployment remains unchanged. Cyclical fluctuations in the number of people in activation will thus result in cyclical fluctuations in the labour force.

However, the overall picture does not change much if we apply an alternative unemployment measure, gross unemployment, which does include those in activation. In that case the unemployment gap becomes a bit larger, but on the other hand the labour force gap becomes correspondingly smaller in numerical terms, cf. Part 2 of this Monetary Review. In short, the overall output gap does not change much if gross unemployment is applied rather than net unemployment.

[1] The underlying method is described in detail in Danmarks Nationalbank, *Monetary Review*, 3rd Quarter 2011, Part 2.

continues to fluctuate as much as it has done historically, there will be negative growth in many quarters in the future, without the economy necessarily having reversed.

Unemployment

Both net unemployment and gross unemployment, defined as the number of registered unemployed plus those in active labour market programmes, have declined slightly since mid-2010. In July 2011, gross unemployment was just over 160,000, equivalent to 6.1 per cent of the labour force. Sample-based LFS unemployment fell by 7,000 in the 2nd quarter of 2011, to a seasonally adjusted level of 215,000. Of these, almost 50,000 were jobseekers in education (not seasonally adjusted), who are not included in gross unemployment. Long-term unemployment in Denmark is well below the level in most other EU member states, both as a ratio of the total number of unemployed and as a ratio of the labour force.

In the remainder of 2011 unemployment is expected to increase a little. After that, the economic recovery will be sufficiently strong to generate a fall in unemployment, to approximately 100,000 for net unemployment by 2013. This is assessed to be close to the structural level, cf. Chart 22, right.

WAGES AND PRICES

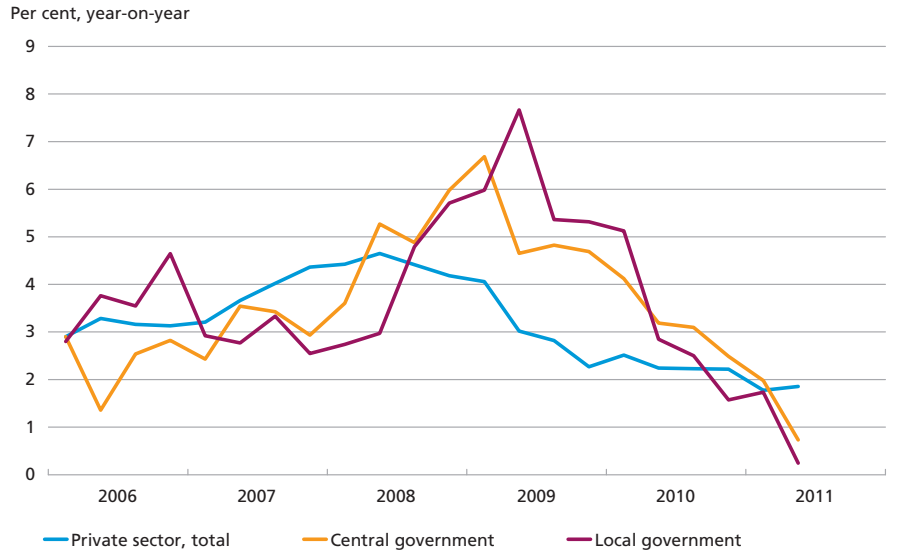
Wages

According to Statistics Denmark, private sector wages rose by 1.8 per cent in the 2nd quarter of 2011 compared with the same period of the preceding year, cf. Chart 24. Wage inflation in 2010 was to some extent overrated in the statistics due to the introduction of the multimedia tax. Adjusted for this factor, wage inflation has been fairly stable at around 2 per cent since early 2010. This is the lowest rate of increase since the statistics were introduced in 1994.

The subdued trend in wages applies to practically all groups of wage earners. In the industrial sector, wages rose by 2.1 per cent year-on-year in the 2nd quarter of 2011, while wages in the very cyclically sensitive building and construction sector were a mere 0.6 per cent above the level in the same period of 2010. During the boom, wages in the construction sector rose at a substantially higher pace than in the rest of the economy, but the low rate of increase in recent years has counterbalanced this.

Public sector wage inflation is also low. Compared with one year earlier, wages rose by 0.7 per cent in central government and 0.2 per cent in local government in the 2nd quarter of 2011. Under the collective agreements, public sector wage inflation mirrors that of the private

WAGE DEVELOPMENTS — Chart 24



Note: The most recent observations are from the 2nd quarter of 2011.
Source: Statistics Denmark.

sector with a certain lag. Currently, this means that public sector wage inflation should be zero.

Over the last year, wage inflation in Denmark in the highly competitive industrial sector has come closer to that of Denmark's competitors; in fact, it was slightly lower in the 2nd quarter of 2011. But for a long period Danish wages rose faster than those abroad without a correspondingly higher rate of productivity growth. This has weakened the wage competitiveness of Danish firms. This development must be halted and reversed, which will require a lengthy period of wage restraint.

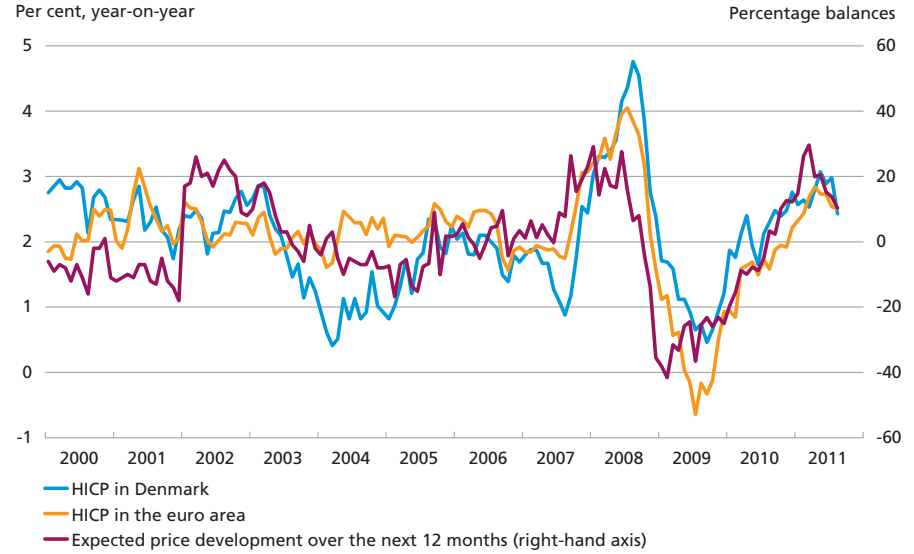
Industrial wages are expected to rise a little more rapidly in 2012 and 2013 than in 2011 as labour market conditions improve. However, a return to the high rates of increase seen in 2007 and 2008 is not likely in the coming years.

The expected rate of wage increase combined with relatively strong price inflation will lead to a weaker development in real wages than in productivity. Hence, the profit ratio, which declined sharply during the upswing in 2004-08, will rise to its long-term average in the forecast.

Prices

Inflation, stated as the year-on-year increase in the Harmonised Index of Consumer Prices, HICP, rose in the first part of 2011, reaching 3.1 per cent in May, cf. Chart 25. Subsequently it has declined again, to 2.4 per cent in August. Euro area inflation was 2.5 per cent in August 2011. This

INFLATION AND INFLATION EXPECTATIONS — Chart 25



Note: HICP is the Harmonised Index of Consumer Prices. The most recent observations are from August 2011.
Source: Statistics Denmark.

means that Danish consumer price inflation has fallen slightly below that of the euro area after having been higher for some time.

The relatively high price inflation is mainly attributable to rising energy and food prices. Core inflation, which excludes the food and energy components of the consumer price index, has risen only slightly in recent months, standing at 1.2 per cent in August.

Rising commodity prices last autumn and winter have pushed up the year-on-year increase in wholesale prices. Wholesale prices rose by 6.6 per cent in August 2011 compared with August of the year before. For the last six months, the wholesale price index has been virtually flat.

Temporary fluctuations in the energy and food component of the consumer price index do not in themselves lead to inflationary pressures in the long term, unless they have a rub-off effect on wage inflation, i.e. second-round effects. That would be the case if expectations of continued and more prolonged high inflation lead to demands for compensation by way of higher wages.

Consumer expectations of future inflation rose until the spring of 2011, by which time they were almost back at the high level seen in the late stages of the boom. Since then they have fallen back again and are currently not much above the normal level. Against that background, the risk of second-round effects is assessed to be modest at present.

Inflation is deemed to have peaked. It is expected that growth in consumer prices will subside further towards the end of 2011 and that price inflation will be below 2 per cent in 2012 and 2013, cf. Table 3. This reflects a certain amount of spare capacity in the corporate sector, as well as the assumption that there will not be any significant further increases

CONSUMER PRICES — Table 3

Per cent, year-on-year	Weight[1]	2010	2011	2012	2013	2011					
						Q2	Q3	Q4	Aug.	Sep.	Oct.
HICP		2.2	2.6	1.9	1.8	2.9	2.6	2.4	2.4	2.4	2.5
Index of net retail prices	100	2.0	2.6	2.1	1.9	2.9	2.5	2.3	2.6	2.4	2.4
Exogenous:											
Energy	7.1	12.3	12.4	4.3	1.0	12.7	13.3	10.5	12.9	13.0	12.4
Food	13.1	-0.2	3.7	2.1	1.9	4.9	4.0	3.1	3.7	3.8	3.4
Adm. prices ...	4.2	3.9	2.0	2.5	3.1	2.0	1.7	0.7	1.7	1.6	0.8
Rent	23.6	2.6	2.9	3.0	2.9	2.9	2.8	2.9	2.9	2.9	2.9
Excl. exogenous	52.0	0.6	0.5	1.4	1.5	0.9	0.4	0.6	0.6	0.2	0.4
Imports	15.6	0.8	4.3	1.6	1.5	5.3	3.2	4.0	3.1	3.1	3.9
IMI	36.4	0.5	-0.9	1.3	1.6	-0.9	-0.7	-0.8	-0.6	-1.0	-1.0

Note: The most recent actual figures are from August 2011.

[1] Weight in the index of net retail prices, per cent.

in energy prices from the current level of around 115 US dollars per barrel of oil (Brent). This is in line with the price of oil futures.

THE DANISH ECONOMY IN A LONGER-TERM PERSPECTIVE

Over the period 1995-2010, the average annual rate of increase in GDP in volume terms was 1.4 per cent in Denmark. This is among the weakest rates of increase in the OECD and considerably below the level in the other Nordic countries. However, there are a number of problematic issues in relation to merely focusing on GDP growth when making international comparisons.

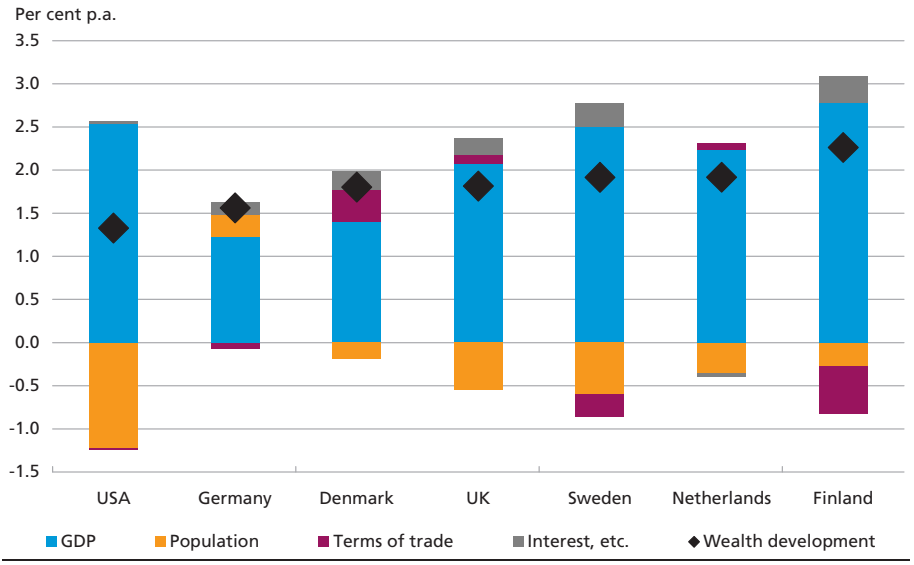
Over the period in question, population growth in the OECD countries has varied considerably. The number of Danes of working age has increased by 2.9 per cent since the mid-1990s. This is far less than in many other countries. For example, the equivalent figure for Sweden is 9 per cent, while the populations of Germany and Japan have shrunk. Growth that simply reflects an increase in the population does not increase wealth per capita.

Since the mid-1990s, Denmark's terms of trade have improved by approximately 10 per cent. This is one of the highest improvement rates among the OECD countries. In contrast, the terms of trade of e.g. Sweden and Finland have deteriorated in the same period. The terms of trade reflect certain price effects which GDP in volume terms is designed to eliminate. But improved terms of trade provide consumption opportunities beyond those reflected in the development in GDP in volume terms. Estimates of the significance of the terms of trade to consumption opportunities in a country can be obtained by calculating what GDP would have been if export prices had developed in parallel with import prices.

Moreover, Denmark's foreign debt has made way for net external assets. This has led to net interest and investment income from abroad, so that the gross national product, GNP, is higher than GDP. The shift in net interest payments has been so pronounced that it has resulted in a measurable extra contribution to income over the period. This has further increased consumption opportunities in relation to the contribution from growth in GDP.

If adjustment is made for population growth, terms of trade and net interest expenses, the differences in growth performance between the countries from the mid-1990s to 2010 are ironed out. In an international comparison, Denmark's position improves substantially, so that growth in Denmark has been in line with growth in Sweden and higher than in e.g. Germany and the USA, cf. Chart 26. The adjustment corresponds to

WEALTH DEVELOPMENT, AVERAGE ANNUAL INCREASE 1995-2010 Chart 26



Note: Wealth development, indicated by a black diamond, is real GNP per capita adjusted for terms-of-trade effects. For a more detailed account of the adjustments made, see the article "The Relevance of GDP Growth Rates" by Christian Ølgaard, Danmarks Nationalbank, *Monetary Review*, 4th Quarter 2006.
Source: *OECD Economic Outlook* and own calculations.

a further 10 per cent increase in consumption opportunities in Denmark since 1995.

The assessment of the Danish economy in a longer-term perspective should also take into account that macroeconomic balances are better than in many comparable countries. Denmark has a considerable current-account surplus due to the high propensity to save in the private sector. In addition, unemployment is not much above its structural level, and the level is in the low range among OECD countries and better than previously. This applies irrespective of the measure of unemployment applied, and also in relation to the level of long-term unemployment. Government debt relative to the size of the economy is lower than in many other countries, but increasing rapidly.

One of the challenges for the Danish economy is the erosion of competitiveness that has taken place over the last 15 years. Wage inflation has been higher than abroad, and the level of wages in Denmark is now the second highest among the OECD countries. In contrast, growth in labour productivity has been low. From a wealth perspective, the improved terms of trade have partly made up for low growth in productivity, but this cannot be expected to continue. Efforts to boost productivity growth should be given higher priority in economic policy. That is necessary if the potential growth in the economy is to be increased. However, there is no silver bullet. Solutions include improving

the quality of education, research and development, strengthening competitiveness, close economic cooperation and mobility in relation to other countries, as well as generally ensuring good framework conditions for production in Denmark. But such measures work with a lag, and it is a huge challenge to design and implement genuine improvements.

ECONOMIC POLICY

Like the rest of the West, Denmark is faced with a fairly strong dampening of growth opportunities in the coming decade compared with the 1990s. Hence, the typical GDP growth rate in most western European countries will not be around 2-3 per cent a year, but is more likely to be 1-2 per cent. A large part of the explanation is that the populations of working age are growing at a slower pace and in many cases not at all.

The transition to lower growth is by and large unavoidable, although it can be softened by introducing reforms to increase the supply of labour, e.g. through later retirement and by boosting productivity growth. A more accommodative economic policy stance cannot facilitate the transition.

For the last two years, growth in Denmark has exceeded its potential, and following an expected dampening in the next few quarters, it looks as if the economy will find its way back to the normal track. This does not mean a return to the unsustainably high employment level reached during the overheating in 2006-07, when output was considerably above its potential level. That would not be realistic and should not be a policy target.

The notable reduction in spare capacity seen since the summer of 2009 is expected to continue in 2012 and 2013, supported by the very low interest rates, among other things. From a cyclical point of view, there is no reason to stimulate demand via fiscal policy.

Subdued developments abroad and problems within the international financial system may trigger a strong downturn. This makes it important to maintain some room for manoeuvre in fiscal policy in case the cyclical position should deteriorate.

While the 1st half of 2011 saw sound growth in GDP, this is hardly to be expected in the 2nd half. All the same, economic policy should not be determined by developments in single quarters. Instead, it should reflect the underlying capacity pressure in the economy, the forces already at work and the limitations set by considerations such as competitiveness and the situation in the financial markets.

At the current juncture it would therefore be prudent not to launch government initiatives to stimulate demand, but rather to introduce measures to boost confidence. The best response to the basic challenges is a sustainable medium-term fiscal policy stance, supported by structural reforms. The retirement reform should be adopted and labour-market policies should still be aimed at keeping structural unemployment at a low level.

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 quarterly national accounts for the 2nd quarter of 2011.

This projection is based on a number of assumptions concerning the international economy, financial conditions and fiscal policy.

The international economy

Data for the 2nd quarter for the euro area, the UK and the USA were weaker than expected, and several international organisations have reduced their growth expectations for both 2011 and 2012. Weaker growth prospects among Denmark's trading partners have led to a pronounced downward adjustment of export market growth in 2011 and 2012 compared with the most recent forecast from June. The market for Danish exports is assumed to grow by around 5 per cent in 2011 and 2012, while growth is assumed to be a little higher in 2013, cf. Table 4.

Since the spring, the prices of energy and other commodities have declined. Price increases for foreign goods imported into Denmark this year are lower than assumed in the last forecast. Price rises are expected to be higher in 2012. The same applies to price increases in the export markets. Wage inflation abroad is expected to be modest over the entire projection period on account of weak labour markets in most countries.

Interest rates, exchange rates and oil prices

In the forecast, the development in short-term and long-term interest rates is based on the expectations that can be derived from the term structure of interest rates in the financial markets.

Short-term Danish money-market interest rates are expected to mirror those of the euro area. Short-term interest rates in Denmark have declined since early July, and by mid-September 2011 the 3-month money-market interest rate was 0.7 per cent, which is 0.6 percentage point lower than assumed in the June forecast. The short-term money-market interest rate in 2013 is expected to be in the range of 0.8 per cent, which is 1.2 percentage points lower than in the last forecast.

The average bond yield is defined as an average of the yields to maturity on outstanding government and mortgage bonds. The average

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

OVERVIEW OF FORECAST ASSUMPTIONS Table 4

	2010	2011	2012	2013
International economy:				
Export market growth, per cent year-on-year	11.1	5.0	4.8	5.6
Export market price[1], per cent year-on-year	-0.7	1.6	1.9	1.2
Foreign price[2], per cent year-on-year	-0.5	1.6	1.9	1.2
Foreign hourly wages, per cent year-on-year	2.6	2.4	2.2	2.7
Financial conditions, etc.:				
3-month money-market interest rate, per cent p.a.	0.6	0.9	0.5	0.8
Average bond yield, per cent p.a.	2.7	2.7	2.8	3.1
Effective krone rate, 1980 = 100	104.0	103.7	103.5	103.5
Dollar exchange rate, DKK per USD	5.6	5.3	5.3	5.3
Oil price, Brent, USD per barrel	80.3	111.9	107.9	104.4
Fiscal policy:				
Public consumption, per cent year-on-year	0.7	0.3	0.7	0.2
Public investment, per cent year-on-year	6.9	5.2	-4.8	-7.2
Public-sector employment, 1,000 persons	840	835	838	839

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

bond yield is expected to rise over the projection period. The average bond yield was 2.2 per cent p.a. in mid-September and is expected to rise to 3.1 per cent p.a. by 2013.

The effective exchange rate of the krone is a little weaker than in the June forecast. In the projection the dollar rate and the effective krone rate are assumed to remain constant at the level from mid-September.

At the time of forecasting, the price of oil was around 115 dollars per barrel. This is slightly lower than in the June forecast. Oil prices are assumed to develop in line with futures prices, falling to around 105 dollars per barrel by 2013.

Fiscal assumptions

Fiscal policy in the forecast is based on the Finance Act for 2011, regional and local government budgets for 2011 and agreements on local and regional government finances in 2012. Public consumption is assumed to increase by 0.3 per cent in 2011, 0.7 per cent in 2012 and 0.2 per cent in 2013. Public investment is expected to rise by a good 5 per cent this year and then to fall in 2012 and 2013 in step with the planned consolidation.

APPENDIX 2: REVISIONS IN RELATION TO THE PREVIOUS FORECAST

The estimated growth in GDP in 2011 and 2012 has been adjusted downwards relative to the June forecast, cf. Table 5, which shows a breakdown of GDP and consumer prices by key background factors. Downward adjustment of export market growth is the main reason for reducing GDP growth over the projection period. On the other hand, the falling interest rates and the weakening of the effective krone rate since June contribute to boosting growth in 2012 and 2013.

Consumer price inflation has been revised slightly downwards in 2011 and 2012 on account of developments that have already taken place. The weaker effective exchange rate of the krone contributes to higher consumer price inflation in 2012 and 2013. On the other hand, lower oil prices and lower export market growth help to keep inflation down. Other factors make only small contributions to the revision of the consumer price estimates.

REVISIONS IN RELATION TO THE PREVIOUS FORECAST Table 5

	GDP			Consumer prices, HICP		
Per cent, year-on-year	2011	2012	2013	2011	2012	2013
Forecast, June 2011	1.7	2.0	1.6	2.9	1.9	1.8
Contribution to revised estimate from:						
Export market growth	-0.2	-0.7	-0.3	0.0	0.0	-0.1
Interest rates	0.0	0.2	0.2	0.0	0.0	0.0
Exchange rates	0.0	0.1	0.1	0.0	0.1	0.1
Oil prices	0.0	0.0	0.0	0.0	-0.1	0.0
Other factors	0.0	0.0	0.0	-0.2	0.0	0.1
This forecast	1.4	1.6	1.6	2.6	1.9	1.8

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

Potential Output in Denmark

Asger Lau Andersen and Morten Hedegaard Rasmussen, Economics[1]

INTRODUCTION AND SUMMARY

The concepts of *potential output* and *output gap* are among the most widely used concepts in macroeconomic analysis. Potential output is the output level that the economy can sustain without inflationary pressures arising in the longer term. The output gap is the deviation of actual output from this level and is often regarded as a summary indicator of the cyclical position. Moreover, the output gap is often seen as an indicator of the balance between supply and demand and hence of the pressure on the economy's resources. If output exceeds the potential level, meaning that the output gap is positive, this is an indication of capacity pressures in the economy that will result in higher inflation in the longer term. A negative output gap, on the other hand, indicates that the economy has spare capacity and that activity could be increased without generating inflationary pressures in the longer term. Output gap estimates therefore play an important role in the conduct of macroeconomic stabilisation policies. Finally, output gap estimates are used in calculations of the underlying fiscal position, and are thus a key element in assessments of the long-term fiscal outlook.

In Part 2 of this Monetary Review, we present calculations of the potential output level and output gap in the Danish economy for each quarter since 1985. This article provides a brief, non-technical description of the overall approach and a summary of the most important findings and conclusions.

Our calculations indicate that, in the current situation, the Danish economy has modest spare capacity. The output gap in the 2nd quarter of 2011 is estimated to be -1.6 per cent. The gap between actual and potential output has narrowed considerably since 2009, and despite the outlook for limited growth in the current six-month period, we expect this gradual closing of the negative output gap to continue in the coming years.

The spare capacity in the economy is reflected primarily in a participation rate that is below its structural level, while unemployment is

[1] In writing this article, we have benefited from comments and suggestions by Christian Møller Dahl. The views and conclusions expressed in this article are strictly those of the authors. Any errors or omissions remain the responsibility of the authors.

assessed to be very close to the level consistent with a stable medium-term development in wages and prices. Productivity in the Danish economy, measured in terms of total factor productivity, TFP, fell strongly in the wake of the financial crisis in 2008 and 2009. The TFP level has recovered somewhat since the trough in 2009, but remains below its 2006 peak. Based on the calculations in Part 2, we find, however, that productivity is currently close to its structural level.

The outbreak of the financial crisis in 2008 resulted in large negative output gaps in 2009 and 2010 In the years leading up to the financial crisis, in 2005-07, the Danish economy experienced severe overheating with large positive output gaps and massive labour market pressure, causing wages to increase significantly faster than labour productivity. The calculations in Part 2 indicate that the gap between actual and potential output was wider during this period than indicated by previous estimates from other institutions. But the analyses also show that – based on the information available at the time – the estimation method applied in this article would not have been sufficient to reveal the strength of the overheating.

This highlights a limitation in the use of output gap estimates, as such estimates are inherently subject to great uncertainty. This especially applies to the estimates of the elements of greatest natural interest, i.e. the current size of the output gap and its near-term development. Early estimates of the output gap are often revised due to revisions of existing national accounts data or new data releases. Consequently, output gap estimates can never stand alone in assessments of the current cyclical position, but must always be integrated as an important element of the overall assessment.

ESTIMATION OF POTENTIAL OUTPUT

In this article, the potential output level of the Danish economy is estimated using the production function methodology. This approach is one of the most frequently used methodologies, used by e.g. the OECD, the European Commission, the Economic Councils and the Danish Ministry of Finance. A key element of this approach is that the total output in the economy, measured by the gross domestic product, GDP, is modelled as a specific function of capital, labour and TFP. The latter is an overall measure of how efficiently the production factors labour and capital are used in the production process.

Potential output is then calculated as the output level achieved when each production factor is at its *structural* level. The structural level may be described as the long-term, underlying level achieved in a "normal"

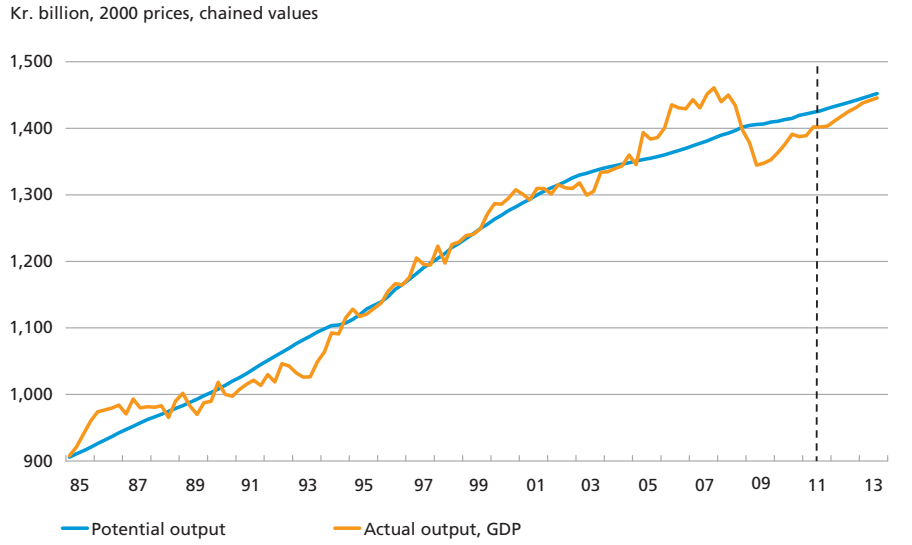
cyclical position. As regards the capital stock, cyclical fluctuations are very small relative to the overall factor, so in this case, the structural level is defined as being equal to the actual level. In other words, the task is to calculate structural levels of TFP and total labour input. The latter is calculated on the basis of estimates of structural unemployment and the structural labour force participation rate.

POTENTIAL OUTPUT AND THE OUTPUT GAP SINCE 1985

Estimates of the potential output level in Denmark show that the growth rate of potential output in recent years has been lower than in the preceding decades, cf. Chart 1, due to a weaker rate of increase in productivity and the ageing population, among other factors. In particular, the curve flattened in the early 2000s when growth in potential output declined. Another "break" can be observed in the autumn of 2008 in the wake of the global financial crisis.

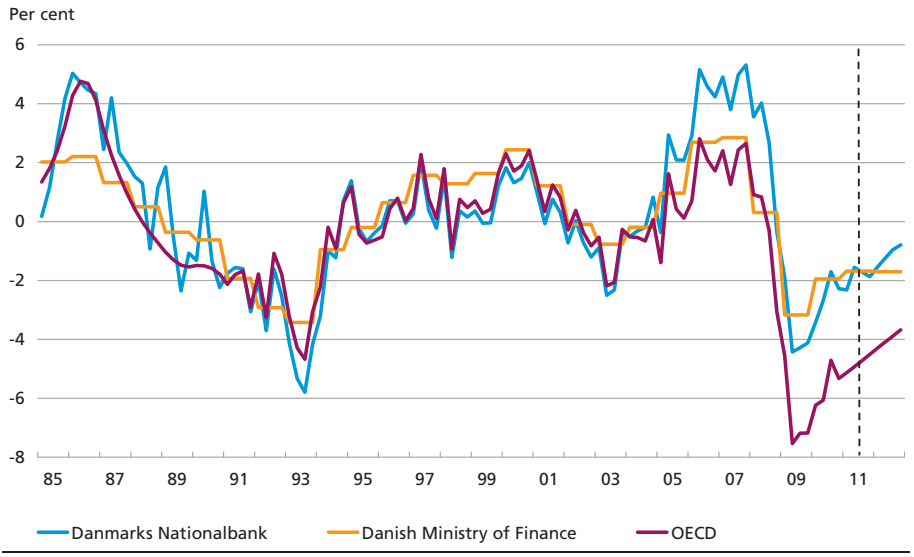
The output gap is calculated by combining the estimated development in potential output with the development in actual output. The resulting time series broadly tells the same story of the cyclical patterns in the Danish economy since 1985 as corresponding estimates from the OECD and the Danish Ministry of Finance, cf. Chart 2. The output gap was large and positive at the beginning of the period, followed by a

ACTUAL AND POTENTIAL OUTPUT Chart 1



Note: The figures to the right of the dashed line are based on Danmarks Nationalbank's latest forecast of the Danish economy, cf. "Recent Economic and Monetary Trends".
Source: Statistics Denmark and own calculations.

OUTPUT GAP ESTIMATED BY VARIOUS INSTITUTIONS Chart 2



Source: Danish Ministry of Finance, OECD *Economic Outlook* and own calculations.

marked economic slowdown in the early 1990s. The decade ended with a strong boom, which was replaced by a short-lived downturn in the first years of the 2000s.

In the years 2005-07, the Danish economy experienced a strong boom and overheating. Our estimates indicate that, during this period, the output gap exceeded 4 per cent, which is significantly more than what corresponding estimates from other institutions have suggested. Thus, our results indicate that the overheating of the economy in the years leading up to the financial crisis was stronger than previously believed.

Late 2007 saw a slowdown in the Danish economy and the cyclical downturn was strongly reinforced by the outbreak of the financial crisis in 2008 and the resulting sudden braking of the world economy. The recession bottomed out in the 2nd quarter of 2009, when, according to our estimates, GDP was more than 4 per cent below its potential level. However, the GDP level has recovered since then. Together with modest growth rates in the level of potential output, this has led to considerable narrowing of the output gap, which is estimated at -1.6 per cent of potential output in the 2nd quarter of 2011. This is in line with the Ministry of Finance's assessment for the full year 2011, while the OECD assesses the current output gap to be even more negative.

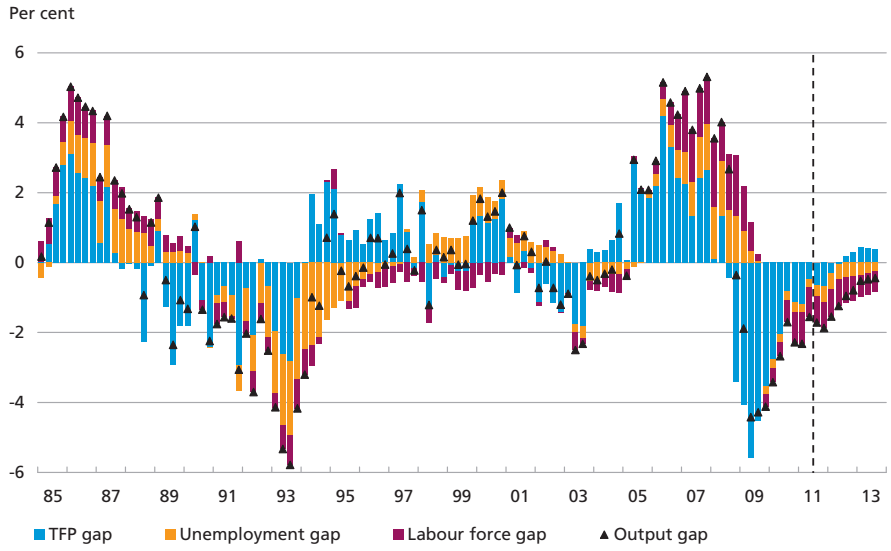
The differences between the three assessments illustrate that estimates of the size of the output gap depend on the specific choice of estimation method.

DECOMPOSITION OF THE OUTPUT GAP: UNEMPLOYMENT, PARTICIPATION RATE AND TOTAL FACTOR PRODUCTIVITY

The output gap can be decomposed into contributions from the TFP gap, the unemployment gap and the labour force gap. Each gap represents the deviation of the respective component from its structural level. For instance, a positive labour force gap means that the labour force is above its structural level, which, everything else equal, results in a larger positive output gap.

A general pattern is that cyclical turning points are initially characterised by strong fluctuations in the TFP gap, while the labour market turning point typically lags behind by a few quarters, cf. Chart 3. For example, the large positive output gaps in the years 2006-08 at first took the form of large positive TFP gaps. Towards the end of the strong boom, in the run-up to the financial crisis, the composition of the output gap shifted, however, as the boom resulted in considerable labour market pressures. Similarly, the sudden cyclical reversal after the outbreak of the financial crisis was initially reflected in large negative TFP gaps, while the current negative output gap is primarily attributable to spare capacity in the labour market. In this context, it is worth noting that the labour market's response to the latest cyclical reversal has first and foremost taken the form of a marked labour force gap, while the contribution of the unemployment gap to the overall output gap remains modest.

DECOMPOSITION OF THE OUTPUT GAP — Chart 3



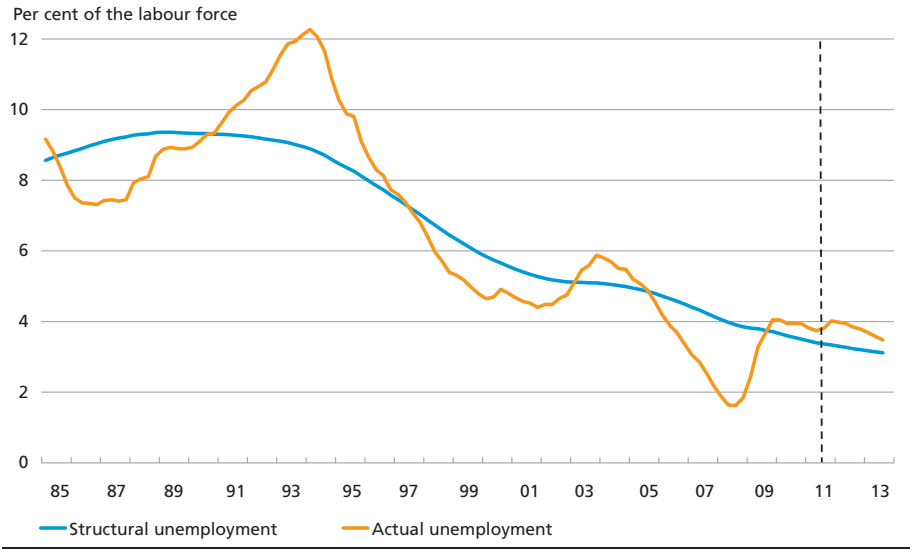
Note: The figures to the right of the dashed line are based on Danmarks Nationalbank's latest forecast of the Danish economy.
Source: Statistics Denmark and own calculations.

In the following, unemployment and labour force developments are discussed further. Structural unemployment is the level of unemployment that is consistent with stable wage and price developments in the medium term. In the article in part 2, we estimate this level by exploiting a negative relationship between the unemployment gap and the development in the wage share in the private non-agricultural sector: when unemployment is low and the labour market is tight, wages typically rise faster than productivity. This will exert upward pressure on prices. In a small economy such as Denmark, conducting a fixed-exchange-rate policy against the euro, prices are anchored to price developments in the euro area. Labour market pressures will therefore cause the wage share, i.e. the ratio of total wage compensation to value added, to increase. Conversely, the wage share declines when unemployment is high and the labour market has spare capacity.

This entails that the development in the wage share may be used to extract information about the structural unemployment level: a high and rising wage share indicates, all things being equal, that unemployment is below its structural level. Conversely, a low and falling wage share indicates that unemployment is higher than its structural level.

Our estimates show that structural unemployment has declined significantly over the period under review, cf. Chart 4. While structural unemployment was more than 9 per cent of the labour force, correspond-

ACTUAL AND STRUCTURAL NET UNEMPLOYMENT — Chart 4



Note: Unemployment is calculated as registered net unemployment. The labour force is calculated as the number of employed persons plus net unemployed persons. The figures to the right of the dashed line are based on Danmarks Nationalbank's latest forecast of the Danish economy.
Source: Statistics Denmark and own calculations.

ing to more than 260,000 persons, at the beginning of the 1990s, the current level is estimated to be approximately 3.4 per cent of the labour force, or just under 100,000 full-time equivalents. The principal driver of these developments is the labour market reforms – introduced particularly in the 1990s – which *inter alia* reduced the unemployment benefit entitlement period, while also implementing a far more active labour market policy. Before the reforms, the focus was on securing income support for the unemployed, but with the reforms, it shifted to ensuring their return to employment.

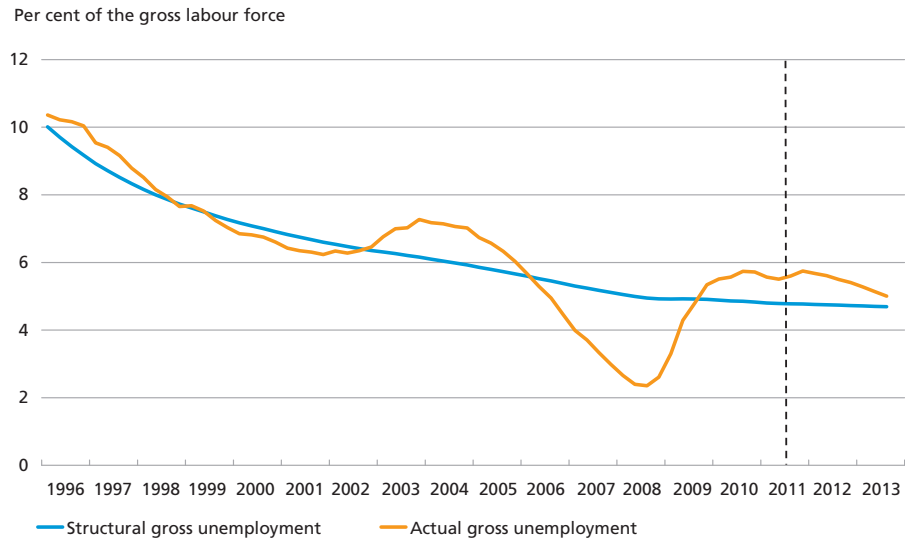
The result of the reforms was a notable and sustained drop in structural unemployment. It is unlikely, however, that structural unemployment will continue to decline at the same rate in future. There will always be some level of unemployment in the economy, e.g. because people who are changing jobs often have a short spell of unemployment in between jobs. This short-term unemployment constitutes a lower boundary to structural unemployment. In our assessment, the very low level of unemployment recorded in 2008 is below this limit and, accordingly, pushing unemployment back to this level would not be sustainable.

The calculations referred to above are based on registered *net unemployment*. In the article in Part 2, we have made similar calculations based on another concept, *gross unemployment*. In contrast to net unemployment, gross unemployment includes the number of persons in active labour market schemes who are ready for employment. Therefore, gross unemployment is higher than net unemployment, meaning that estimates of structural unemployment are also higher when based on this concept. If the focus is on developments over time, however, the overall picture is the same as for net unemployment. Structural gross unemployment has declined from approximately 10 per cent of the labour force in 1996 to just under 5 per cent in the 2nd quarter of 2011, cf. Chart 5.

In the article in Part 2, we analyse developments in the structural labour force by estimating a structural participation rate. The participation rate is here defined as the percentage of the population aged 16-66 participating in the labour force. The structural participation rate dropped sharply during the period 1992-96, cf. Chart 6. This is directly attributable to a steep increase in the number of persons in leave schemes and early retirement programmes in those years, resulting in the withdrawal of a large number of people from the labour force. The gradual phasing out of leave schemes caused the structural participation rate to increase in the following years.

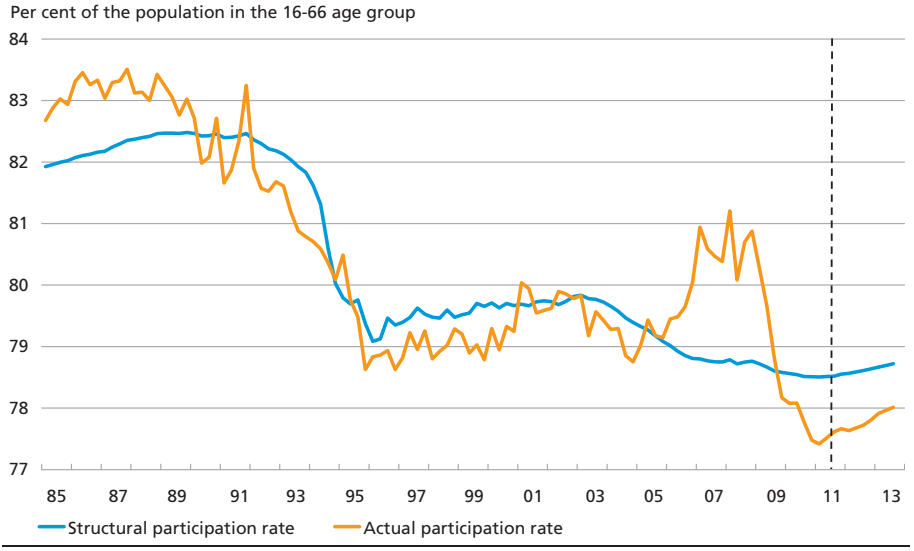
From 2003 until today, the structural labour force participation rate has fallen gradually by just over 1 percentage point in total, whereby it

ACTUAL AND STRUCTURAL GROSS UNEMPLOYMENT — Chart 5



Note: Unemployment is calculated as registered gross unemployment. The gross labour force is defined as the number of employed persons plus gross unemployed persons. The figures to the right of the dashed line are based on Danmarks Nationalbank's latest forecast of the Danish economy.
Source: Statistics Denmark, Ministry of Employment and own calculations.

ACTUAL AND STRUCTURAL PARTICIPATION RATE — Chart 6



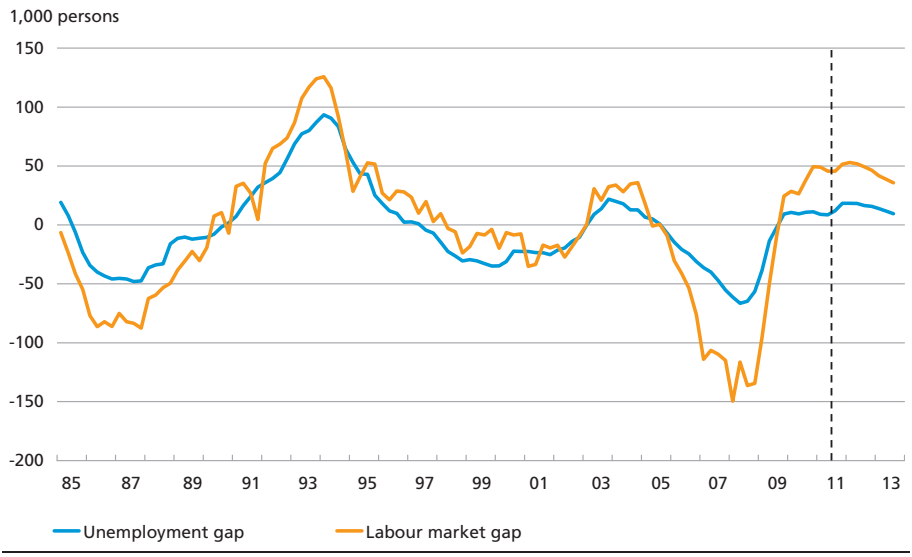
Note: The participation rate is calculated as the number of persons in the labour force divided by the number of persons in the population in the 16-66 age group. The figures to the right of the dashed line are based on Danmarks Nationalbank's latest forecast of the Danish economy.
Source: Statistics Denmark and own calculations.

is estimated at 78.5 per cent in the 2nd quarter of 2011. Demographics explain the fall, due to an increase in the share of the 60-66 age group in the population of working age. As this age group tends to have a lower participation rate than the general population of working age, e.g. due to access to early retirement schemes, this lowers the structural participation rate.

Chart 7 focuses on the unemployment gap and the labour force gap, i.e. the deviations in unemployment and the labour force from their respective structural levels, expressed in number of persons. The overall size of the two gaps may be expressed by the *labour market gap*, representing the gap between the structural and actual input of labour. A positive labour market gap indicates that spare capacity exists in the labour market, while a negative gap indicates a tight labour market.

The overheating of the economy in the years leading up to the financial crisis caused unemployment to be pushed far below its structural level and, at the same time, the labour force increased considerably. As a result, the labour market gap turned negative, reaching almost 150,000 persons in early 2008. This development came to an abrupt end with the outbreak of the financial crisis, resulting in a significant increase in unemployment and a massive reduction of the labour force. In view of

UNEMPLOYMENT AND LABOUR MARKET GAPS Chart 7



Note: The labour market gap is defined as the unemployment gap minus the labour force gap; the latter is calculated as the participation rate gap multiplied by the number of persons in the population in the 16-66 age group. A positive labour market gap indicates that the total input of labour is below the structural level, e.g. because unemployment is higher than the structural unemployment rate or because the labour force is below its structural level. The figures to the right of the dashed line are based on Danmarks Nationalbank's latest forecast of the Danish economy.

Source: Statistics Denmark and own calculations.

the unusually severe drop in demand in 2009, it is noteworthy that unemployment did not rise more than it actually did, and our analyses indicate that it was only slightly above its structural level in the 2nd quarter of 2011. Fluctuations in the labour market gap were previously driven primarily by developments in the unemployment gap, but in recent years such fluctuations have increasingly been reflected in labour force patterns, cf. Chart 7.

Part of the explanation is the increased extent of active labour market programmes, since participants in these programmes are not included in net unemployment figures – and thus not in the labour force, when defined as the sum of employed and net unemployed persons. With this definition of the labour force, labour market flows from employment to active labour market programmes are recorded as reductions in the labour force. This means that greater variation in the number of people enrolled in such programmes results in larger cyclical fluctuations in the labour force.

Using gross unemployment as the unemployment concept does not significantly alter the overall picture, however. The fluctuations in the labour market gap in recent years may thus, to a greater extent than previously, be attributed to variations in the size of the labour force, even when including the people in active labour market programmes. Increased use of foreign labour may have contributed to this trend. The reason is that foreigners employed by Danish firms are included in employment figures – and hence in the labour force – but not in population figures. Consequently, increased use of foreign labour during economic upswings contributes to greater cyclical fluctuations in the labour force. This should be seen as a reminder that it is not sufficient to focus solely on the unemployment gap when assessing labour market pressures.

POTENTIAL OUTPUT BEFORE AND AFTER THE FINANCIAL CRISIS

The outbreak of the financial crisis in 2008 triggered a sharp decline in economic activity in Denmark. As a result, investment levels plummeted, and our calculations show that the ensuing slowdown in the accumulation of capital has lowered potential output by just under 1 per cent, compared to the level it would have reached if capital accumulation had continued at the pace seen in 2000-08.

On the other hand, we find that the financial crisis has had limited or no impact on structural unemployment and the structural participation rate. The best way to characterise the sudden increase in unemployment in 2009 is to think of it as the closing of a large, negative unemployment gap. In our assessment, the decline in the participation rate in 2009

should also be seen as a cyclical phenomenon. In this context, it should be noted that the participation rate was unusually high in the years leading up to the financial crisis. Moreover, the decline in the participation rate may be attributed, to a greater extent than during previous recessions, to an increase in the number of students. It is likely that part of this group will be willing to return to the labour market when cyclical conditions normalise, suggesting a limited negative impact on the structural participation rate.

It should be emphasised, however, that this does not mean that unemployment and participation rates will return to their pre-2007 levels. The overheating of the Danish economy caused unemployment to fall far below its structural level in 2009, while the participation rate was significantly *above* its structural level. Therefore, a return to this situation would not be sustainable.

Economic Costs of Financial Crises

Kim Abildgren, Economics, Birgitte Vølund Buchholst and Atef Qureshi, Financial Markets and Jonas Staghøj, Statistics

INTRODUCTION AND SUMMARY

The Danish economy has been characterised by substantial fluctuations in recent years. The years prior to the Financial Crisis saw considerable overheating and soaring prices of both commercial and residential properties. The strong increases in house prices throughout the first part of the 2000s were to a large extent driven by the introduction of new loan types (adjustable-rate loans and deferred amortisation), and from the middle of the decade, the housing market became so frenzied that it can justly be described as a genuine house price bubble with unrealistic expectations of future house prices, cf. Dam et al (2011).

The downturn in the housing market and an economic slowdown started in late 2007. In the 4th quarter of 2007, both house prices and the seasonally adjusted quarterly real gross domestic product, GDP, fell. This means that the Danish economy was already slowing down before the global financial crisis and the recession in the world economy really took off. The global financial crisis originated in the USA, which had also seen a strong increase in house prices and a build-up of imbalances in the economy in the pre-crisis years. The same applied in several other countries.

The decline in the Danish housing market reinforced the contractive effects of the global financial crisis. Part of the banks' lending is collateralised on real property, and a number of banks have had to make substantial impairment charges on property-related exposures in step with the reversal of property prices. Many banks had also increased their lending far beyond the level of their deposits prior to the crisis, thereby accumulating considerable customer funding gaps. This meant that Danish banks had to rely on the financial markets as a source of financing, which made them particularly vulnerable in connection with the eruption and global spreading of the international liquidity crisis. During the financial crisis in recent years, four out of Denmark's 15 largest banks have ceased to exist as independent firms, and the government has intervened extensively to support financial stability.

Historical experience from many other countries shows that economic downturns that coincide with financial crises are longer and deeper than other economic downturns, and that economic upswings following a banking crisis are weaker than normal. Part 2 of this Monetary Review provides an empirical analysis of the extent to which financial crises have a negative impact on the Danish economy compared with business cycles without a financial crisis, cf. Abildgren et al. (2011). In this overview article, we present a non-technical summary of the most important results and conclusions of the analyses.

In summary, the analyses in this article show that a financial crisis has a substantial negative impact on the real economy in the short and medium term. This highlights the importance of an economic policy aiming for stable economic development to avoid a massive build-up of imbalances followed by a crisis when the bubble bursts and the imbalances are redressed. The costs of financial crises should also be borne in mind when assessing the proposals for future regulation of the banking sector that are currently being prepared in international forums. Depending on the pace, the phasing-in of new capital and liquidity requirements may have some minor transitional consequences for the economy, cf. Christensen (2011). But, as shown by the analyses in this article, there will be large potential gains for the economy if the future regulation contributes to fewer and less serious financial crises in the future.

ECONOMIC DOWNTURNS WITH BANKING CRISES ARE LONGER OR DEEPER THAN OTHER ECONOMIC DOWNTURNS

Table 1 presents an overview of the length and amplitude of Danish business cycles in the past almost 200 years. Business cycles characterised by banking crises are highlighted in bold in the Table.

There is a clear pattern of economic downturns with banking crises being deeper or longer than economic downturns without banking crises:

- The economic downturn of 2007-09, which was characterised by the Financial Crisis, was the deepest downturn since World War II.
- The economic downturn of 1855-58, which included the Monetary Crisis, was the deepest downturn in the period 1821-1915.
- The economic downturn of 1876-77, which was characterised by the Savings Bank Crisis, was the deepest downturn in the gold standard period.
- The economic downturn of 1986-93, during which a number of banks experienced a crisis, is unique in that it was the longest economic downturn (7 years) since 1821. On the other hand, it was not much deeper than the average depth of the downturns since 1975.

CHRONOLOGY OF DANISH BUSINESS CYCLES 1821-2009 TABLE 1

Turning points			Length (years)			Amplitude (% of GDP)	
Trough	Peak	Trough	Upswing	Downturn	Cycle	Strength of upswing	Depth of downturn
...	1821	1823	...	2	...	...	2.4
1823	1824	1825	1	1	2	1.7	1.3
1825	1828	1833	3	5	8	2.7	3.7
1833	1834	1836	1	2	3	3.7	3.3
1836	1840	1842	4	2	6	2.1	3.5
1842	1845	1847	3	2	5	4.0	4.3
1847	1850	1854	3	4	7	7.3	7.2
1854	**1855**	**1858**	1	**3**	4	8.8	**8.8**
1858	1859	1861	1	2	3	4.9	3.5
1861	1863	1864	2	1	3	4.1	3.3
1864	1865	1868	1	3	4	1.9	3.6
1868	1870	1871	2	1	3	3.6	2.1
1871	1872	1873	1	1	2	2.5	2.4
1873	**1876**	**1877**	3	**1**	4	2.0	**4.3**
1877	1879	1881	2	2	4	3.3	1.6
1881	1883	1885	2	2	4	2.6	3.1
1885	**1887**	1889	**2**	2	4	**2.6**	2.8
1889	1890	1894	1	4	5	3.0	2.9
1894	1896	1898	2	2	4	2.7	2.2
1898	1903	1906	5	3	8	2.6	2.1
1906	**1911**	1912	**5**	1	6	**2.3**	2.4
1912	1914	1915	2	1	3	6.0	7.0
1915	1916	1918	1	2	3	4.8	10.5
1918	1920	1921	2	1	3	10.3	8.0
1921	**1923**	**1925**	**2**	**2**	4	**10.9**	**8.7**
1925	**1930**	**1932**	**5**	**2**	7	**6.5**	**5.8**
1932	1939	1941	7	2	9	12.4	20.1
1941	1944	1945	3	1	4	15.4	12.8
1945	1950	1952	5	2	7	10.2	4.5
1952	1954	1958	2	4	6	2.9	3.1
1958	1961	1963	3	2	5	2.9	2.9
1963	1965	1966	2	1	3	3.0	2.3
1966	1973	1975	7	2	9	3.8	5.8
1975	1979	1981	4	2	6	5.3	4.5
1981	**1986**	**1993**	**5**	**7**	12	**5.0**	**5.1**
1993	2000	2003	7	3	10	3.9	2.8
2003	**2007**	**2009**	4	**2**	6	3.9	**6.1**
Average of monetary regimes:							
1823-1842 ("Return to par of the rigsdaler")			2.3	2.5	4.8	2.6	3.0
1842-1873 ("Silver standard")			1.8	2.1	3.9	4.6	4.4
1873-1912 ("Gold standard")			2.8	2.1	4.9	2.6	2.7
1912-1945 ("Wars and inter-war period")			3.1	1.6	4.7	9.5	10.4
1945-1975 ("Bretton Woods")			3.8	2.2	6.0	4.6	3.7
1975-2009 ("Post-Bretton Woods")			5.0	3.5	8.5	4.6	4.6
Total 1823-2009			2.9	2.2	5.2	4.9	4.9

Note: The depth of an economic downturn is measured from peak to trough. The strength of an economic upturn is measured from trough to peak. The monetary regimes are stated in quotation marks as the breakdown into periods is based on whole business cycles and therefore may not coincide fully with the monetary regimes. The business cycles characterised by banking crises are highlighted in bold.

Source: Abildgren et al. (2011).

Finally, it should be noted that the banking crisis in the 1920s and the early 1930s lasted for a very long time, and that the economy was characterised by strong upturns as well as deep downturns during this period.

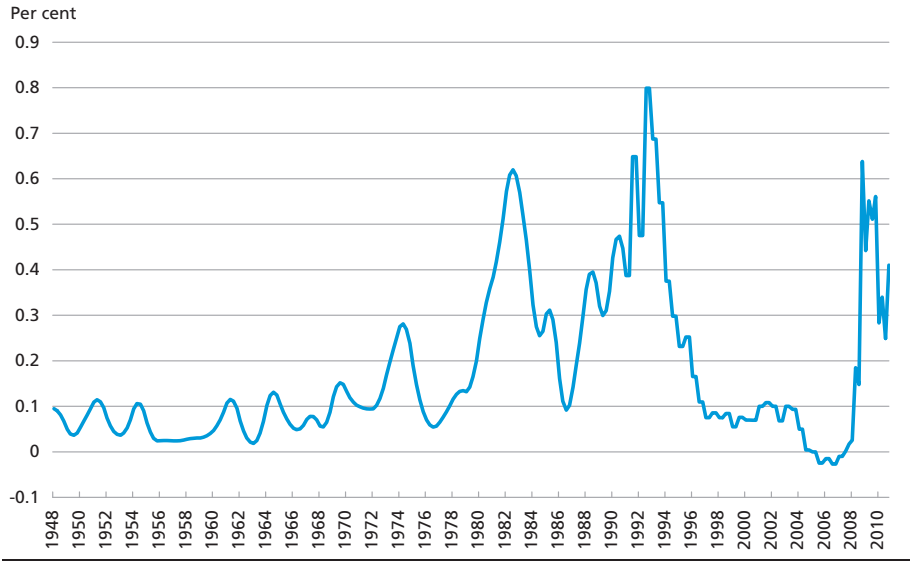
Economic downturns with banking crises tend to be deeper or longer than economic downturns without banking crises. The reason may be that economic downturns are aggravated by banking crises, but it may also merely reflect the tendency for banking crises to occur during deep economic downturns. The following sections will further discuss the extent to which effects of the former type apply.

SUBSTANTIAL AND LONG-TERM NEGATIVE ECONOMIC IMPACTS OF A FINANCIAL CRISIS

Due to the complicated interaction between the real and financial parts of the economy it is difficult to quantify the extent to which a financial crisis aggravates a business cycle compared with a business cycle without a financial crisis.

This can be illustrated on the basis of Chart 1, which shows the banks' write-down ratio since 1948. Usually, the banks' write-downs increase in connection with a recession – whether there is a banking crisis or not.

THE BANKS' QUARTERLY WRITE-DOWN RATIO 1948-2010 Chart 1



Note: Write-downs as a ratio of loans and guarantees.
The quarterly write-down ratio is not annualised and is partly interpolated on the basis of half-year and full-year data.
Negative write-down figures indicate that previous write-downs are reversed as revenue.
Source: Abildgren et al. (2011).

Accordingly, write-downs rose in connection with the first oil crisis in the mid-1970s, in connection with the downturn related to the second oil crisis in the late 1970s and early 1980s, during the seven-year slump in the late 1980s and early 1990s and finally in the period from 2008 onwards.

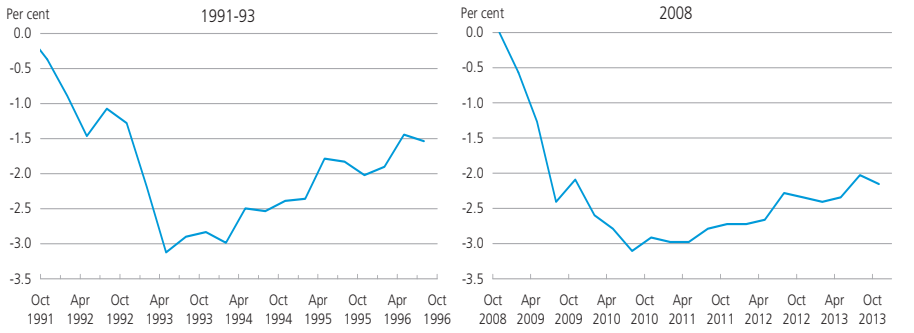
The write-downs increase in connection with a downturn because poor sales opportunities and rising unemployment reduce the earnings base of firms and households and thus their ability to service their bank loans. Furthermore, downturns may be accompanied by falling stock and house prices, which reduces the value of the collateral for the bank loans. They may also lead to higher write-downs in the banking sector. Finally, write-downs may rise during a slump if the banks become more cautious in their lending portfolio quality assessment.

Normally, a downturn will also be accompanied by a decline or low growth in the demand for credit due to a weak development in consumption and investment ("demand effect"). To counter the risk of losses on loans, the banks' interest-rate margins will often increase and their credit standards will be tightened in connection with a slump. Viewed in isolation, this also reduces bank lending ("supply effect").

Therefore, a slump typically implies increasing write-downs in the banking sector and lower lending volumes, regardless of whether there is a financial crisis or not. During a financial crisis, however, the banks' write-downs may increase more than warranted by the general economic development. Thus, the write-downs are indicators of the impact of the financial crisis on the economy. For example, the write-downs may grow more than warranted by the general cyclical development because a financial crisis leads to extraordinarily high uncertainty about the future economy and thereby the future finances of bank customers. Write-downs may also increase more than usual because the banks become extra cautious in their lending portfolio quality assessment. A calculation of the real economic effects corresponding to such "extraordinary" increases in the banks' write-downs during a financial crisis can be interpreted as an expression of the negative impact of the financial crisis, viewed in isolation, on the business cycle.

Abildgren et al. (2011) perform such a calculation on the basis of a summary model of the Danish economy since 1948, comprising a number of selected real economic as well as monetary and financial variables. The calculations comprise the extraordinary negative real economic impacts of a financial crisis, adjusted for developments in output, interest rates, stock prices, house prices, etc. during the crisis. The calculations indicate that in the period 2009-13 real GDP is on average 2.25-2.5 per cent below what it would have been in the absence of the Financial

DEVELOPMENT IN REAL GDP CORRESPONDING TO THE EXTRAORDINARY INCREASES IN THE BANKS' WRITE-DOWN RATIOS IN 1991-93 AND 2008 Chart 2



Note: The charts show the deviations from the baseline scenario in per cent. The left-hand chart concerns the effects corresponding to the extraordinary increases in the banks' write-down ratios in the period from the 3rd quarter of 1991 to the 3rd quarter of 1993, while the right-hand chart concerns the effect corresponding to the extraordinary increase in the banks' write-down ratios in the 4th quarter of 2008. The effects shown are related to non-seasonally adjusted variables.

Source: Abildgren et al. (2011).

Crisis, cf. Chart 2. This corresponds to a total accumulated output loss of around 12 per cent of GDP over the period 2009-13.

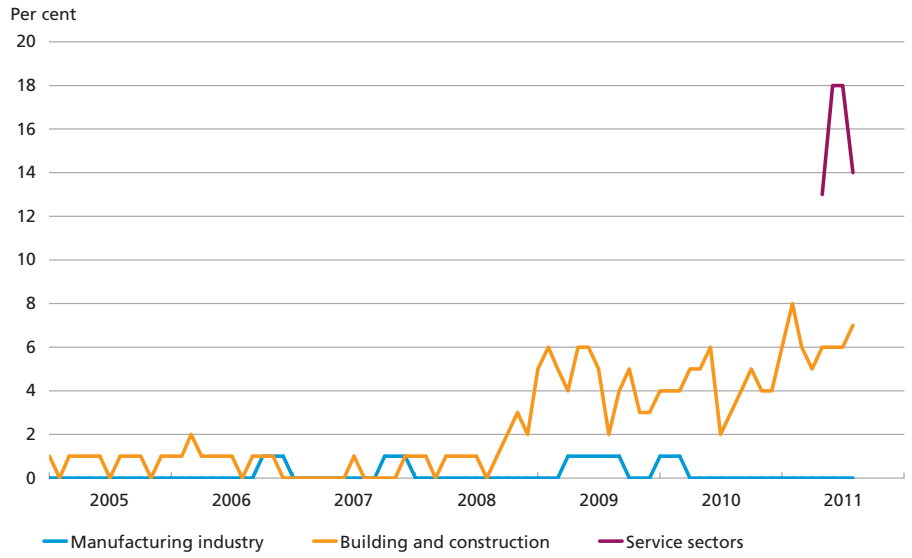
An important question when reviewing the calculation results is whether there have been periodic signs of a general credit crunch during the Financial Crisis. A credit crunch may occur if the banks reduce the supply of credit considerably more than the weak economic development would warrant, making it difficult for creditworthy borrowers to obtain financing, cf. Danmarks Nationalbank (2009).

This question cannot be answered on the basis of the above model calculation. Firstly, it is not possible to decompose the results of the calculations into impacts caused by changes in the supply of and demand for credit, respectively. Secondly, the customers' creditworthiness is not part of the calculation basis. Supplementary information is therefore necessary to assess the credit crunch issue. Based on Statistics Denmark's confidence indicators, only a limited number of firms, particularly in manufacturing industry and building and construction, have reported financial constraints as impediments to production in recent years, cf. Chart 3. This indicates that the Financial Crisis was not accompanied by a general credit crunch. Accordingly, the output loss caused by the Financial Crisis according to the calculations of Chart 2 is on the whole attributable to the more general negative impact of the Financial Crisis on the economy. A case in point is the extraordinary impact of the crisis on the saving behaviour of households and firms due to weakened confidence in the banking sector.

This does not mean that some firms or firm segments have not found it more difficult to raise bank loans during the financial crisis in recent

SHARE OF FIRMS REPORTING FINANCIAL CONSTRAINTS AS IMPEDIMENTS TO PRODUCTION

Chart 3



Source: Statistics Denmark.

years. According to a study from Statistics Denmark, the share of rejected loan applications from small and medium-sized enterprises increased from 4 per cent in 2007 to 23 per cent in 2010, while the share of partially rejected loan applications from small and medium-sized enterprises increased from 6 to 24 per cent during the same period, cf. Statistics Denmark (2010). The Danish Ministry of Economic and Business Affairs (2011) made a more detailed analysis of these figures by linking them with the firms' financial results. The analysis shows that the firms whose credit applications were granted in full were characterised by higher profit ratios, higher returns on equity and lower gearing than the firms that obtained only part of the credit they applied for or none at all. Nor does Statistics Denmark's survey of small and medium-sized enterprises' access to financing seem to indicate the existence of a general credit crunch where creditworthy borrowers were unable to obtain loan financing. If anything, it reflects that the banks tightened their credit standards during the Financial Crisis in view of the customers' reduced payment ability as a consequence of the weak economic development.

Both before and after the most recent financial crisis, Denmark's real economy has been in a better state than in the early 1990s. According to the calculations in Chart 2, the financial crisis in recent years has caused an output loss of the same magnitude as seen as a result of the banking

and currency crises in the early 1990s. This covers two opposite effects. The financial crisis from 2007-08 onwards was of a completely different nature and far more serious than the crisis in the early 1990s. This is offset, however, by the fact that the economic-policy measures (including the bank rescue packages) introduced during the most recent financial crisis were much more comprehensive than the crisis intervention in the early 1990s.

The calculations also show that the output loss occurred at the beginning of the crisis, i.e. at the end of 2008 and in the 1st half of 2009, followed by stabilisation. It would be natural to regard this stabilisation as an effect of Bank Rescue Package 1 (a general government guarantee for depositors and unsecured claims in banks) and Bank Rescue Package 2 (public capital injections in credit institutions) in October 2008 and February 2009, respectively.

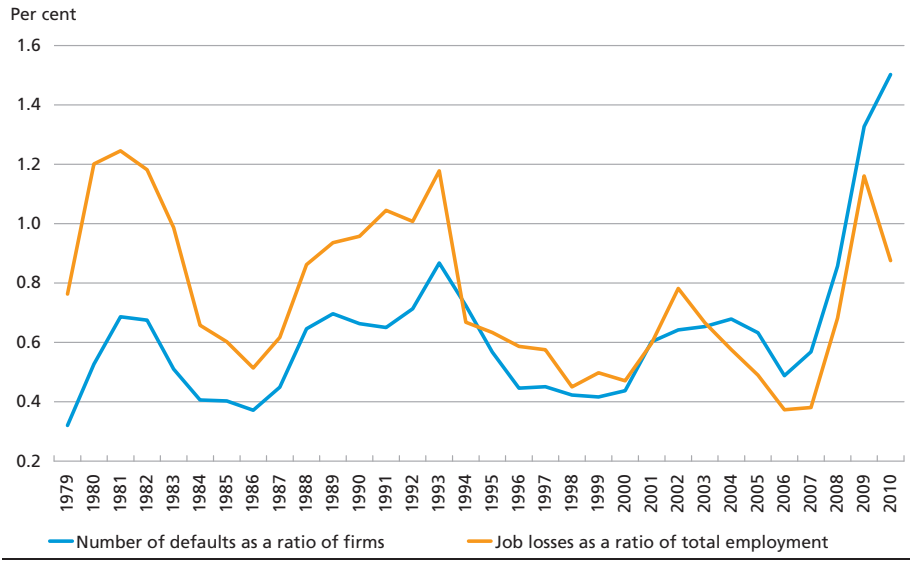
THE IMPACT OF THE FINANCIAL CRISIS ON THE FIRMS' PROBABILITY OF DEFAULT AND RETURNS ON ASSETS

The financial crisis in recent years has greatly affected the Danish business sector, which has experienced the highest failure rates over a number of years. This applies both to the number of failures as a ratio of the total number of firms (the failure rate) and the number of jobs lost as a result of defaults as a ratio of total employment (the share of job losses), cf. Chart 4.

Danmarks Nationalbank's lending surveys indicate that during the most recent financial crisis the banks needed to tighten their credit standards, particularly for corporate customers, in order to adjust to the cyclical reversal, cf. Nielsen (2010). The question is whether the high failure rate in the last few years was caused by cyclical developments alone, or if part of the increase can be attributed more directly to the tightening of credit standards and the lower propensity to provide credit of some banks that have been under financial pressure.

On the basis of a failure model, Abildgren et al. (2011) examine whether the failure rate for Danish firms with a "weak" bank has tended to be higher during the financial crisis in recent years than for similar firms with a "sound" bank. A "weak" bank may have fewer options to meet the credit and liquidity needs of corporate customers than a bank with "sound" finances, and for individual firms it may be both difficult and costly to switch to another bank at short notice. This is because the bank's knowledge of the individual firm is important in connection with the extension of credit. Unlike a potential new bank, the firm's existing bank has such knowledge.

FAILURE RATE AND JOB LOSSES IN CONNECTION WITH DEFAULTS 1979-2010 Chart 4



Note: Job losses in connection with defaults are measured by the number of employee claims submitted to the Employees' Guarantee Fund (Lønmodtagernes Garantifond – LG).
Source: Statistics Denmark and LG.

The analysis is based on financial statements presented in the period 1995-2009 by approximately 37,000 Danish public and private limited liability companies.

How to operationalise the term "weak" bank is a different matter. This can be done in several ways.

One possibility is to take as a starting point the "Supervisory Diamond" for banks introduced by the Danish Financial Supervisory Authority (FSA) on the basis of the common features characterising banks in difficulties during the most recent crisis and previous crises, cf. Danish Financial Supervisory Authority (2010). The Supervisory Diamond includes a number of benchmarks for what must be defined as banking activity subject to heightened risk. The benchmarks of the Supervisory Diamond concern lending growth, property exposure, large exposures, excess liquidity cover and funding ratio. Against this background, a bank might be defined as being "weak" if, based on data from the period immediately prior to the most recent financial crisis (i.e. mid-2007), the bank exceeded the FSA threshold values for four out of the five variables in the Supervisory Diamond. Of the approximately 100 Danish banks stated by the firms as their banks, 14 banks would be defined as "weak" according to that definition, including 3 medium-sized and 11 small banks.

Another possibility is to perceive a bank as "weak" if it is among the 10 per cent of the banks having the lowest excess solvency ratio (relative to the individual capital need) in 2007. Of the slightly more than 100 Danish banks stated by the firms as their banks, 11 banks would thus be defined as "weak", including 3 medium-sized banks. 2 of the 11 banks coincide with those described as "weak" according to the Supervisory Diamond.

In summary, the analysis indicates that the default risk for firms with a "weak" bank was higher in 2008-09 than for similar firms with a "sound" bank. The question is how those results should be interpreted. Firstly, the calculations are based on the assumption that the explanatory variables in the failure-rate model (return on assets, debt ratio, auditors' qualification, etc.) fully allow for the fact that the probability of default is higher for firms with "poor" finances than for firms with "healthy" finances. Where this is not the case, the impact of having a "weak" bank on a firm's probability of default will be overestimated. This is because "weak" banks tend to have a higher share of "bad" customers, cf. Table 2. In such cases it cannot be ruled out that the calculations simply reflect the default of unprofitable firms during the Financial Crisis and that those firms were mainly customers of "weak" banks.

Secondly, the calculations assume that in terms of the probability of default, the effect of having a "weak" bank is the same for all firms. In view of the fact that only a small number of firms in recent years have reported financial constraints as impediments to production, it would be natural to see this result as indicating that dependence on "weak" banks affected only the probability of default for a small share of firms, while the probabilities of default of the majority of firms were not affected by the state of their banks.

To illustrate this issue, Abildgren et al. (2011) also focus on whether a negative effect of having a "weak" bank can be seen on the return on assets for the non-defaulting firms during the Financial Crisis. There are no indications that the return on assets for non-defaulting firms during the Financial Crisis was impacted by the "soundness" of their banks. This is consistent with Statistics Denmark's confidence indicators, which indicate that only a limited number of firms have reported financial constraints as impediments to production during the Financial Crisis.

COMPARISON OF KEY RATIOS FOR FIRMS WITH A "SOUND" AND "WEAK" BANK, RESPECTIVELY

Table 2

	Average 1995-2006				Average 2007-09			
	"Weak" bank defined on the basis of the Supervisory Diamond		"Weak" bank defined on the basis of excess capital adequacy		"Weak" bank defined on the basis of the Supervisory Diamond		"Weak" bank defined on the basis of excess capital adequacy	
	Sound bank	Weak bank	Sound bank	Weak bank	Sound bank	Weak bank	Sound bank	Weak bank
Failure rate (per cent)	2.5	3.8	2.6	2.8	2.9	4.5	2.9	5.3
Return on assets (per cent)	5.6	3.8	5.4	6.2	4.8	3.6	4.7	4.8
Primary operating result (kr. million)	2.1	0.5	2.1	0.8	3.1	0.5	2.9	1.0
Assets (kr. million)	36.2	12.0	35.3	11.9	67.0	19.4	65.1	16.6
Equity capital (kr. million)	15.4	3.6	15.0	4.1	27.5	6.4	26.7	6.2
Short-term debt as a ratio of assets (per cent)	54.0	60.2	54.4	52.9	59.8	65.4	60.1	60.1
Long-term debt as a ratio of assets (per cent)	12.2	12.5	12.2	15.2	10.5	10.7	10.4	13.5
Number of employees	25.6	11.2	25.0	12.6	34.0	14.5	33.1	15.8
Age of firm (years)	17.5	15.3	17.4	16.1	21.2	18.3	21.0	19.5
Capital base reduction (share of companies, per cent)	14.3	18.8	14.5	15.0	16.3	21.3	16.5	18.2
Critical auditors' qualification (share of firms, per cent)	7.8	10.1	7.9	9.6	11.0	14.8	11.1	13.5
Geographical location of firms (per cent)								
Copenhagen and Frederiksberg	13.4	28.3	14.5	5.2	12.2	28.4	13.5	4.6
County of Copenhagen	11.6	23.1	12.5	2.8	10.5	23.0	11.7	1.7
Counties of Frederiksborg and Roskilde	12.7	24.4	13.7	2.7	11.8	23.2	12.9	3.1
Other urban municipalities	19.8	5.3	18.8	21.7	20.8	7.1	19.8	19.6
Rural districts	42.6	18.9	40.5	67.7	44.7	18.2	42.1	71.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Break-down of firms by industry (per cent)								
Trade, etc.	32.3	31.0	32.3	29.8	34.9	32.0	34.9	30.5
Construction	12.4	14.4	12.5	15.3	14.0	15.7	14.1	16.9
Real estate	23.0	25.8	23.2	21.1	20.5	25.5	20.9	19.0
Manufacturing	18.1	14.7	17.9	19.9	17.6	13.6	17.3	20.3
Transport, etc.	5.3	4.2	5.2	4.9	8.9	8.5	8.9	8.0
Other	8.9	9.9	8.9	9.0	4.1	4.5	4.0	5.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of observations	430,843	27,662	446,627	11,878	89,435	6,485	93,293	2,627

Source: Calculated on the basis of data from Experian A/S, cf. Abildgren et al. (2011) .

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Fluctuations in International Capital Flows: Challenges and Policy Responses

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INTRODUCTION AND SUMMARY

Rapid and significant reversal of private capital flows to a number of emerging economies in the wake of the financial crisis has brought the countries' management of capital flows into international focus. Both the G20 group and the International Monetary Fund, IMF, are currently dealing with the issue, and their aim is to reach conclusions on appropriate economic policy measures.

Capital inflows improve a country's funding options. This provides a basis for increased prosperity, as the improved funding options pave the way for profitable investment, boosting growth and employment. Economic policy should be designed to ensure that the improved prosperity will be of a stable and lasting nature. This should be viewed in light of the fact that the increased supply of funding may contribute to overheating of the economy and entail financial risks in connection with price bubbles or sudden reversals of capital flows. Against this backdrop, some of the recipient emerging economies have sought to address private capital inflows and their consequences, including via the introduction of capital controls.

This article illustrates the size and nature of recent years' capital flows, the policy challenges caused by the inflows, potential and applied policy responses as well as preliminary considerations and discussions in international forums. The main conclusion is that while a number of macroprudential measures and, to some extent also capital controls, have been introduced, the possibilities for adjustment via macroeconomic policy have not been exhausted. An IMF proposal for a framework for managing capital flows emphasises targeting economic policy on the country's fundamental problems. This means that the risk of overheating should be countered by macroeconomic tightening, possibly supplemented by macroprudential initiatives to reduce financial risks. However, it is difficult to reach international agreement on the frame-

work. Part of the reason is that some countries fear such a framework would limit their room for manoeuvre and to a lesser degree disagreement on relevant economic policy measures. Furthermore, some recipient countries find that there is insufficient focus on the implications for international capital flows of an accommodative monetary policy stance in advanced economies.

Denmark – together with the other Nordic and Baltic countries – basically supports free capital flows. With a view to addressing the concerns of some emerging economies, Danmarks Nationalbank finds it appropriate to formulate a globally supported framework. The primary aim should be to better enable the economies to absorb capital flows.

DEVELOPMENT IN PRIVATE CAPITAL FLOWS

The emerging economies have seen a rapid return of private capital flows after the sudden halt in connection with the financial crisis.[1] In just three quarters, the net inflows increased by approximately 3.5 per cent of the gross domestic product, GDP, on average for the emerging economies, cf. IMF (2011a).

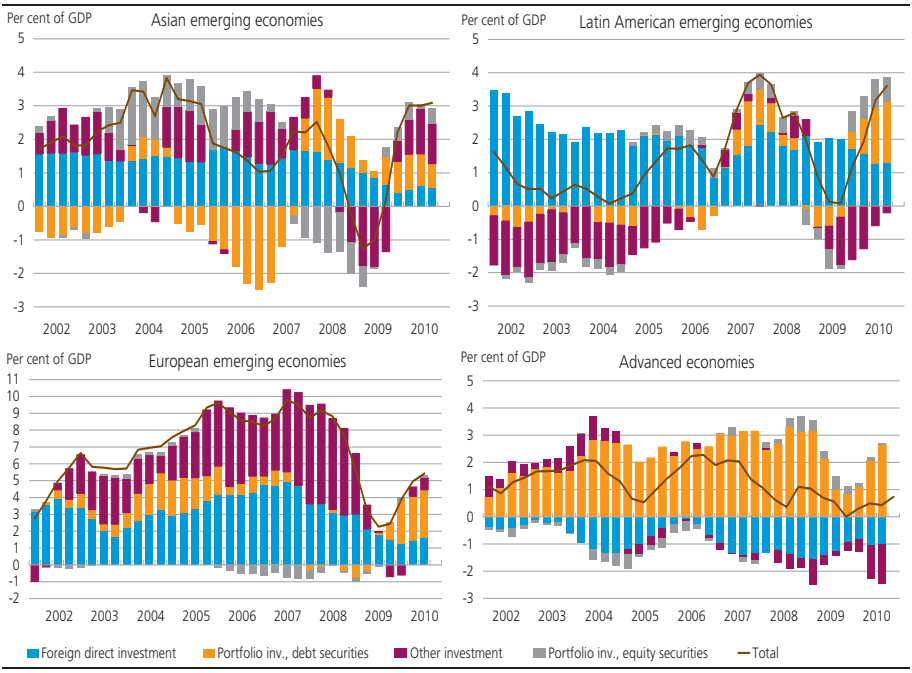
In the ongoing debate on capital flow management, focus has been particularly on Asian and Latin American emerging economies.[2] In comparison, the capital inflows to European emerging economies are still stronger, at approximately 5 per cent of GDP, although the level is more moderate than ahead of the financial crisis, cf. Chart 1. Though the gross capital flows into the advanced economies are much stronger, the net flows are significantly smaller relative to output. Box 1 outlines the relationship between capital flows and the current account of the balance of payments.

It is as much the composition of capital inflows as the speed at which they have increased that has given rise to further vigilance. The increase in capital flows is particularly attributable to portfolio investments and for Asian emerging economies also to other investments, including loans and deposits, while foreign direct investments have not risen markedly in the wake of the financial crisis. Portfolio investments as well as bank deposits and similar private capital flows are typically considered the most volatile capital flows.

[1] In this article, the shown net capital flows exclude foreign-exchange-reserve changes (as well as errors and omissions).

[2] The article focuses on emerging economies that have seen significant capital inflows and have been engaged in addressing these flows. The selection is based on IMF (2011b).

NET CAPITAL FLOWS BY REGION Chart 1



Note: Other investment comprises e.g. trade credits, loans and deposits, including loans to a bank from a foreign parent bank. The total amount stated is positive in all regions. The reason is partly that foreign-exchange reserve changes are not included, cf. footnote 1, page 68, and partly that e.g. a number of commodity-producing countries are not comprised by the above groups. Appendix A shows a list of countries included in the regional groupings.

Source: IMF (2011a).

Capital flows will follow investors' expectations of the highest expected risk-adjusted return, away from the low interest rate and growth outlook in advanced economies and towards better prospects in the emerging economies. Moreover, IMF (2011b) predicts a structural increase in investments in emerging economies as a consequence of a rising share of these economies in institutional investors' portfolios. This, inter alia, reflects that emerging economies have proven to be resilient during the crisis.

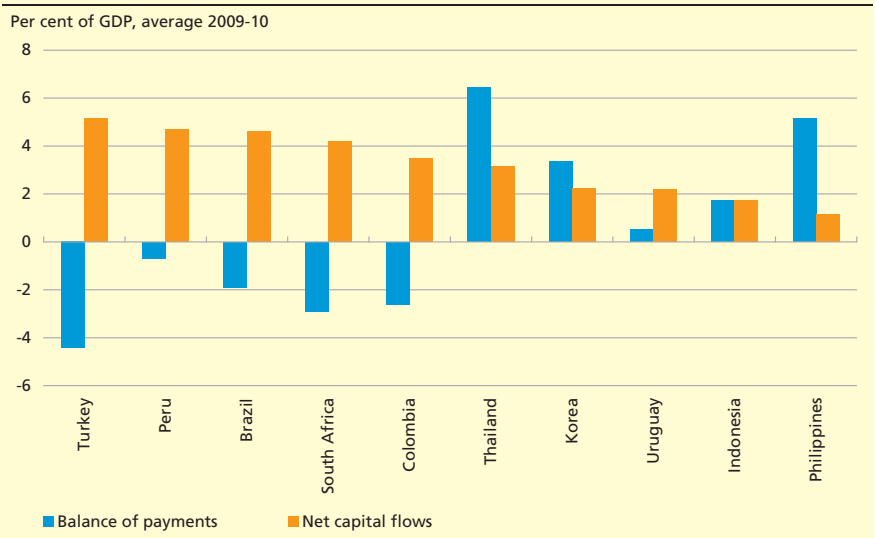
The analysis in IMF (2011a) shows that country-specific factors are most important for the variation in capital flows. Global factors (lower interest rates and a dimmer growth outlook in the advanced economies as well as global risk aversion) still only explain around 15 per cent of total capital flows despite rising importance during the most recent wave of capital flows. This suggests that e.g. the low fed funds target rate in the USA has had a modest effect on capital flows, while expectations of higher risk-adjusted returns in the individual economies have played a larger role.

THE CORRELATION OF CAPITAL FLOWS WITH THE CURRENT ACCOUNT Box 1

Capital flows into and out of a country are reflected in the "financial account" of the overall balance of payments. The account matches the balance of the current account and capital account. The account includes private and public financial transactions, such as direct investments, portfolio investments, bank deposits etc. in addition to foreign-exchange reserve movements.[1]

The discussion on managing capital flows concerns net capital flows excluding foreign-exchange reserve changes, which will often be based on other factors than market-driven factors. Net capital inflows will typically be associated with a current-account deficit and thus a savings deficit. However, if a country builds up foreign-exchange reserves, it may still have a current-account surplus concurrently with otherwise positive capital inflows. Among the emerging economies currently dealing with the issue of capital inflows, the Asian economies generally have current-account surpluses, while the Latin American countries as well as Turkey and South Africa run deficits, cf. Chart 2.

NET SAVINGS AND NET CAPITAL FLOWS IN SELECTED EMERGING ECONOMIES Chart 2



Note: Net capital flows, excluding foreign-exchange reserve changes.
Source: IMF (2011a), Balance of Payments Statistics and own calculations.

Hence, it is not necessarily a savings deficit that causes concern in connection with periods of substantial capital inflows, but just as much the risk of overheating and build-up of financial instability as a consequence of the size, composition etc. of the capital flows.

Source: Danmarks Nationalbank (2007).

[1] Denmark publishes all Danmarks Nationalbank's external accounts (both reserve assets and other external accounts). This article follows the IMF's classification, in which the reserve assets are a separate instrument.

STRONG CAPITAL INFLOWS – EFFECTS AND POLICY RESPONSES

Capital inflows improve funding options and may thus provide access to cheaper funding and facilitate profitable investments to the benefit of growth and employment. Large and sustained capital inflows can also contribute to developing capital markets, paving the way for more advanced financial products, which would otherwise not exist in the market. However, even in good times, economic policy must be designed appropriately to reduce the risks associated with capital inflows. This could involve prevention of overheating of the economy, erosion of competitiveness via strong appreciation of the currency as well as financial risks associated with a sudden reversal in capital flows. Relevant policy responses will depend on the exact challenges that the capital flows bring.

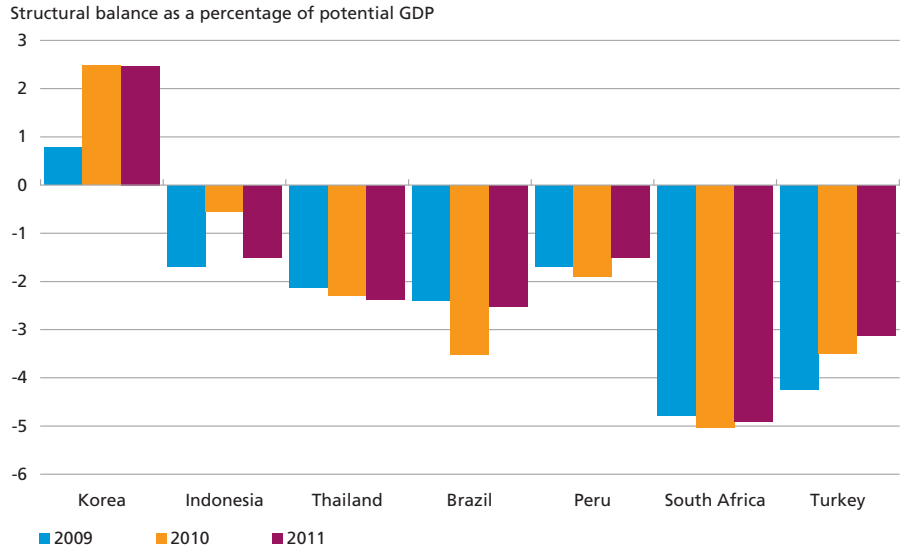
Due to the easier access to funding of consumption and investments in e.g. equities or real property, inflationary pressures and price bubbles may build up. Signs of overheating have been growing, particularly in Latin America, but also in Asia, in the form of rising inflation and credit growth. In Latin America, current-account deficits are also widening, albeit not yet at alarming levels, cf. IMF (2011c and 2011d).

Tighter fiscal policy can offset trends towards overheating and strong credit growth as well as provide better room for manoeuvre in monetary policy. It would be opportune to reduce distorting incentives to borrow, such as reduction of interest deductibility, in a situation with strong credit growth fully or partly funded by capital inflows. However, fiscal policy in the relevant emerging economies has only at a late stage or to a limited extent contributed to dampening demand pressures, cf. Chart 3.

If the capital inflows consist of investments in debt instruments, the increased demand for bonds may put downward pressure on long-term market rates. These effects become particularly pronounced if the capital flows are significant relative to the size of local bond markets. Lower market rates may weaken the monetary-policy transmission mechanism and at the same time reduce the incentive to fiscal discipline. Calculations in IMF (2011c) show that long-term interest rates have declined about 5 basis points on average for each percentage point rise in foreign ownership. However, monetary policy is still considered to be efficient.

Monetary policy may be an important tool to dampen inflationary pressures. Nevertheless, the emerging economies seem to have been hesitant in raising interest rates. In spite of mounting domestic inflationary pressures, monetary-policy interest rates have been kept below historical levels at corresponding inflation rates, cf. IMF (2011b), and real interest rates are negative in Korea and Thailand. Due to fears of

DEVELOPMENT IN THE PUBLIC-SECTOR STRUCTURAL BALANCE Chart 3

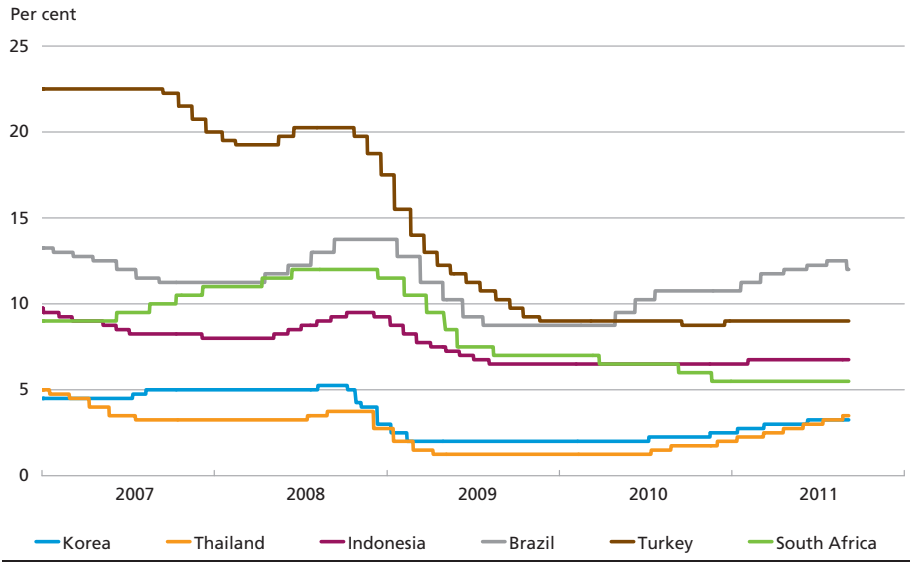


Note: A positive change corresponds to tighter fiscal policy.
Source: IMF (2011a).

attracting further capital, Turkey actually cut interest rates in 2010, cf. Chart 4, though inflation was above the target rate.

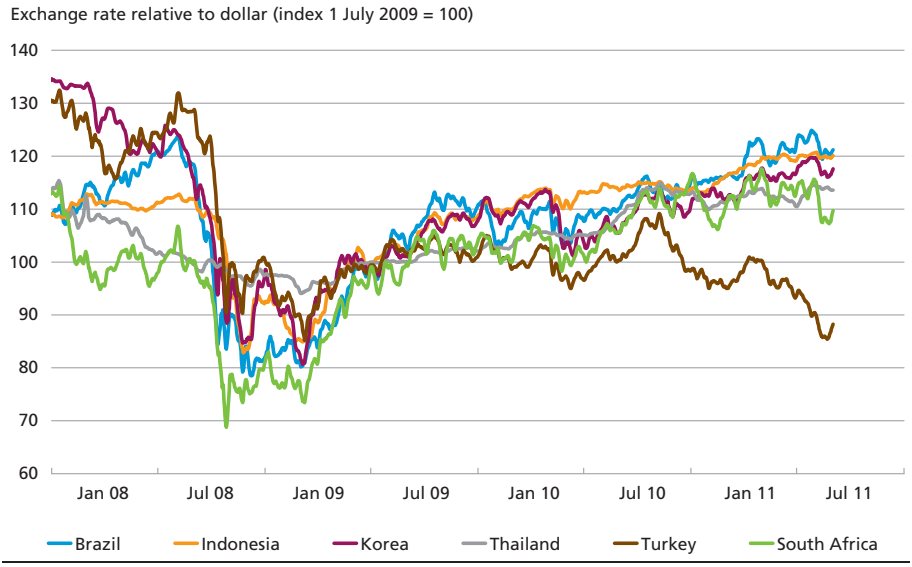
Moreover, capital inflows may lead to upward pressure on the currency. This could help ease pressures on the economy, including inflationary pressures, but could erode competitiveness, if the exchange rate

MONETARY-POLICY INTEREST RATES IN SELECTED EMERGING ECONOMIES Chart 4



Source: Reuters EcoWin.

EXCHANGE-RATE DEVELOPMENTS Chart 5



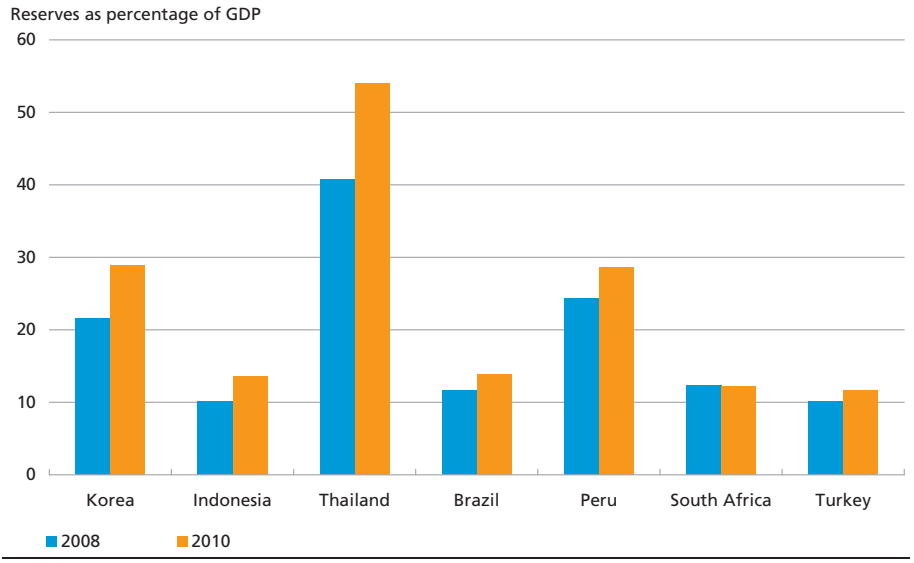
Note: 5-day moving averages.
Source: Bloomberg.

is overvalued relative to the long-term equilibrium level. Since the reversal of private capital flows in mid-2009, some large emerging economies have seen exchange-rate increases between 10 and 25 per cent against the dollar, cf. Chart 5. However, in several cases this has happened after significant depreciation in connection with capital outflows during the financial crisis. IMF (2011a) finds that the exchange rate in e.g. Korea is still below its long-term equilibrium level, while the exchange rates of Brazil and South Africa tend to be overvalued.

Many countries have intervened concurrently and hence increased their foreign-exchange reserves, cf. Chart 6. That would be wise in cases where the reserve is considered to be too small for precautionary purposes. However, intervention may involve significant costs. The costs comprise interest on the securities issued or sold to offset (sterilise) the liquidity effect of the intervention. The interest rate will typically be higher than the potential return from investing the foreign-exchange reserve. In IMF (2011b), the costs of sterilising the liquidity effect of the intervention are estimated at 0.1-0.3 per cent of GDP in 2010 for some of the countries that have seen particularly strong increases in capital flows (Brazil, Peru, Thailand, Indonesia and South Africa).

Finally, the economy becomes vulnerable to a sudden halt or reversal of capital flows, particularly when the inflows are of a more short-term nature. This is not only a risk for countries running current-account deficits. It may also be a problem relative to banks' funding and/or foreign-

TRENDS IN FOREIGN-EXCHANGE RESERVES Chart 6



Source: IMF.

exchange exposure. Furthermore, it may be more difficult for firms to withstand declines in income, if the funding is based on debt rather than share capital. The risk of a sudden halt in capital inflows and of a banking or currency crisis is highlighted in OECD (2011). Out of historical periods with substantial capital inflows, 60 per cent has ended in a sudden halt, and 10 per cent has ended in a banking or currency crisis. The risk more than doubles in the case of debt inflows compared with foreign direct investments.

Macroprudential regulation can play an important role in addressing the financial risks of inflows, both relative to strong lending growth and high growth in stock and house prices as well as to vulnerability to shocks. Such regulation may comprise stricter reserve requirements on the banks, reduced loan-to-value ratios for real property, maturity- or currency-differentiated taxes and reserve requirements as well as restrictions on currency exposure etc. Several of these measures have been applied recently.

Finally, growth-promoting structural policy, such as competition-enhancing deregulation of product markets and reduction of comprehensive job-protection schemes, may contribute to changing the composition of capital flows towards more productive and stable flows, including increased foreign direct investment, cf. OECD (2011). However, it is difficult to assess the net effect on capital flows, as improved conditions at the same time will make it more attractive to invest in the country.

Capital controls

Capital controls are typically defined as measures discriminating against non-resident investors. Overall, the controls can be divided into market-based measures (e.g. taxes) and administrative measures (e.g. caps or actual bans on capital flows). Both types have been applied in connection with the most recent capital inflows to the emerging economies in both Latin America and Asia, cf. Box 2.[1]

In IMF (2011b), a study of selected countries' recent use of capital controls shows that restrictions and other more specific measures have generally been targeted on specific risks, such as short-term capital inflows of a more speculative or volatile nature, hence not on avoiding inflows of more "productive" capital. There is some empirical evidence that capital controls may, in some cases, be efficient with a view to addressing such specific risks. In an overview of a number of studies, Magud et al. (2011) conclude that the introduction of capital controls results in a changed composition of capital inflows towards longer maturities.[2] However, IMF (2011e) underlines that the literature has not yet identified the reasons why they work in some instances and not in others.

The efficiency of the controls is dubious because the capital will seek to circumvent them as long as there are prospects of high returns. IMF (2011b) concludes that the effects of the recent specific measures have been mixed. For instance, the effect of taxes imposed on foreign investors' acquisition of certain bonds in Korea and Thailand is expected to be limited because double taxation agreements imply that part of the bond purchases will be exempt from tax. Indonesia has introduced minimum periods for investment in central bank bonds to counter speculation (not a capital control in the strict sense, as the requirement, in principle, applies to all investors). This only led to a short-lived decline in non-residents' holdings, which was subsequently more than reversed. All in all, it has been difficult to prove a lasting effect of the more specific measures on the intended capital flows.

But a generally negative market sentiment as a consequence of the introduction of capital controls has not been evident. According to market participants, the absence of more general restrictions on mobility as well as clarification of the aim of the measures have been key reasons why investors have not shunned countries that have introduced controls.

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1 The free flow of capital is a fundamental principle in the European Union.

2 Magud et al. (2011) compare the results of a number of studies relative to four intentions: 1. dampen appreciation, 2. dampen speculative inflows, 3. dampen the size of capital inflows, and 4. regain monetary autonomy. They do find an increased degree of monetary autonomy, while the results are mixed regarding appreciation and the overall size of capital inflows.

EXAMPLES OF RECENTLY APPLIED CAPITAL CONTROLS Box 2

Taxes

- Brazil: Reintroduction of higher taxes on portfolio investments of between 2 and 6 per cent (lowest for investments in equities, highest for fixed-rate bonds).
- Korea: Reintroduction of 14 per cent withholding tax on non-residents' purchases of e.g. government securities.
- Thailand: Reintroduction of 15 per cent withholding tax on non-residents' interest income and capital gains on new purchases of government bonds.

Reserve requirements

- Taiwan: Higher, reserve requirements on balances of non-residents' local currency accounts. Required reserves are no longer remunerated.

Quantitative controls

- Indonesia: Short-term central bank bills phased out in favour of i.a. 6-month non-tradeable term deposits, which are only available to banks operating in Indonesia.
- Taiwan: Ban on time deposit accounts for foreign investors.

Source: IMF (2011b) and Pradhan et al. (2011).

INTERNATIONAL DEBATE ON CAPITAL FLOWS

The issue of managing international capital flows is discussed several in forums, particularly the IMF and the G20 group. In the spring, the IMF staff presented a possible policy framework for managing international capital inflows. They have been developed in recognition of a rising need to advise member countries in this area, and they aim to minimise the distorting effects of any measures.

The framework outlines the conditions under which it may be appropriate to apply macroprudential measures and possibly capital controls, cf. Box 3. The IMF has previously rejected the use of capital controls and still finds it important that the member countries exhaust their scope for monetary and fiscal policy measures as well as structural initiatives before direct measures against capital flows are implemented.

However, the framework has not received broad support among IMF members. The substance was broadly supported by most member countries, but some of them complained that the analysis did not encompass policies in other countries that lead to capital inflows. The accommodative US monetary policy is a case in point. Moreover, the member countries preferred the framework to be based on more in-depth studies of measures and their efficiency in a large selection of countries. Finally, some countries were concerned that the framework would limit their room for policy manoeuvre. According to its current Articles of Agreement, the IMF has no explicit mandate to monitor capital flows.

KEY ELEMENTS OF THE IMF STAFF'S PROPOSED FRAMEWORK FOR MANAGING CAPITAL INFLOWS — Box 3

Macroeconomic policy instruments take precedence:

- Allow the exchange rate to appreciate when it is undervalued.
- Build up foreign-exchange reserves, if they are not more than adequate from a precautionary perspective. Neutralise the liquidity effect by sterilisation, if inflation is a concern.
- Lower monetary-policy interest rate or tighten fiscal policy to expand the monetary room for manoeuvre as long as it is consistent with inflation objectives, and overheating is not a concern.

Then come the measures for managing capital inflows, including macroprudential initiatives and capital controls:

- Capital flow management measures can be used if the conditions mentioned above are not fulfilled or if e.g. sterilisation costs are too high or fiscal tightening is not an option. The measures should not replace the necessary macroeconomic policy adjustment, but can complement it in light of the lags associated with fiscal tightening.
- Give precedence to macroprudential measures over capital controls.[1]
- The measures should be commensurate to the specific challenge and be lifted when the risks recede. Country-specific circumstances should be taken into consideration in designing the capital flow management measures. These include the country's administrative capacity and whether capital inflows are intermediated through financial institutions subject to regulation or via other channels.

Ongoing strengthening of the institutional framework:

- Macroprudential and structural measures with a view to improving the financial sector's ability to handle financial stability risks and the capacity of the economy to absorb capital inflows can be used at any time.

Source: IMF (2011b).

[1] Macroprudential measures could be stricter capital and liquidity requirements, reduced loan-to-value ratios etc.

In this light, the IMF's advisory body, the International Monetary and Financial Committee, IMFC, considers the framework as a first step towards developing a more comprehensive and balanced approach to managing capital flows. This should also include recommendations regarding policies that give rise to outward capital flows.[1] The work ahead will take place in parallel with similar work in G20.[2]

[1] The IMFC's communiqué of 16 April 2011 states: "The IMF's recent work on managing capital inflows is a step that should lead toward a comprehensive and balanced approach for the management of capital flows drawing on country experiences. Giving due regard to country-specific circumstances and the benefits of financial integration, such an approach should encompass recommendations for both policies that give rise to outward capital flows and the management of inflows …"

[2] Thus, the communiqué from the meeting between finance ministers and central bank governors in the G20 group on 14-15 April 2011 said: "To strengthen the international monetary system, we agreed to focus our work, in the short term, on […] coherent conclusions for the management of capital flows drawing on country experiences."

Together with the other Nordic and Baltic countries, Denmark supports free capital flows. Policy measures prompted by capital inflows must be targeted towards better enabling the economy to absorb the flows by using macroeconomic policy, structural policy and macroprudential measures in line with the approach proposed in the IMF's framework. Capital controls should be used only temporarily in cases where other possible actions have been exhausted.

There is no global international institution that monitors and advises the member countries on capital flow management, and the consequences may be significant, particularly for the recipient economies, if the effects of the flows are not handled properly. The Nordic and Baltic countries find it sensible that the IMF assumes an advisory role. Hence, the Nordic-Baltic constituency of the IMF supports the development of a framework for capital flow management to be used by the IMF in its advisory function towards the member countries.

APPENDIX A: COUNTRIES INCLUDED IN WEIGHTINGS

Country selection follows IMF (2011a). Regional groupings comprise:

- Asian emerging economies: China, Hong Kong, India, Indonesia, Korea, Malaysia, Philippines, Singapore, Taiwan and Thailand.
- Latin American emerging economies: Argentina, Brazil, Chile, Colombia, Costa Rica, Ecuador, El Salvador, Guatemala, Mexico, Peru and Uruguay.
- European emerging economies: Bulgaria, Croatia, Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Romania, Slovakia, Slovenia and Turkey.
- Advanced economies: Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Japan, Luxembourg, Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, UK and USA.

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Handling Distressed Banks in Denmark

Ulrik Løgtholdt Poulsen and Brian Liltoft Andreasen, Financial Markets

INTRODUCTION AND SUMMARY

The Danish resolution scheme for handling distressed banks has attracted much attention, both in Denmark and abroad. The scheme came into force on 1 October 2010, at which date the general government guarantee expired. The scheme has been applied twice. Both cases related to banks which had granted a large number of risky credits ahead of the financial crisis. This was the reason that they were no longer able to meet the capital requirements.

The resolution scheme implies that ordinary customers will not notice any difference in the practical side of their day-to-day banking business, even if their bank becomes distressed. The scheme constitutes a controlled winding-up of a distressed bank, taking sufficient time to end activities in an orderly manner with the lowest possible losses for its creditors. It is not desirable to wind up a bank via compulsory liquidation, as this would mean that the depositors would have their payment cards cancelled and that borrowers' loans would be called. Moreover, compulsory liquidation proceedings take many years, during which creditors have no access to their funds.

The resolution scheme offers an alternative to compulsory liquidation and addresses a number of the practical challenges involved. However, creditors still have a risk of loss if a bank becomes distressed. This means that they have to take into account the risk profile of the individual bank, when they consider depositing sizeable amounts and purchasing bank bonds etc. Accordingly, the banks are motivated to limit their risks to obtain access to cheaper funding. Over time, the scheme will contribute to a healthier and stronger banking sector, which can stand on its own feet.

A transfer of a distressed bank to another bank is usually to be preferred, but uncertainty about the quality of the credits granted may be so significant that it is not possible to find a buyer. Therefore, the resolution scheme is only relevant if a market solution cannot be found.

With the resolution scheme, a distressed bank will be wound up without any financial risk for the Danish government. However, for the banks that have bought individual government guarantees under Bank

Rescue Package 2, the government could suffer a loss on equal terms with other non-subordinated creditors.

In principle, all Danish banks can decide to make use of the scheme if they become distressed. However, some banks are so important to the overall economy that neither the resolution scheme nor compulsory liquidation would be considered desirable.

In August 2011, a broad majority in the Folketing (Danish parliament) agreed to set up a committee to prepare the future rules on systemically important banks in Denmark. The committee will e.g. look into the criteria to be met for a bank to be systemic in Denmark, and the instruments that may be applied to systemically important banks facing difficulties.

BACKGROUND

The international financial crisis began in the summer of 2007 and was triggered by losses in the US subprime mortgage market. The crisis escalated in the autumn of 2008 when Lehman Brothers had to file for Chapter 11 bankruptcy. The collapse of Lehman Brothers shook the financial markets, which had expected the US authorities to save the investment bank, as had been the case with Bear Stearns earlier that year. This reinforced the reluctance between banks to lend to each other, and global money markets froze completely. In many countries, governments and central banks launched various crisis measures.

The lack of confidence in the interbank market also hit Denmark, and it became difficult for Danish banks to obtain funding abroad. During the years up to the financial crisis, when interest rates were low amid ample liquidity, several Danish banks had increased their lending much more than their deposits. These banks had become dependent on funding in the financial markets and had thus become vulnerable.

General government guarantee (Bank Rescue Package 1)

In the autumn of 2008, the situation had become so critical that even sound banks had difficulty obtaining liquidity. Against this backdrop, a broad political majority entered into an agreement with the financial sector on a 2-year government guarantee in October 2008. The guarantee covered all depositors and other non-subordinated creditors in Danish banks as well as depositors in foreign banks' branches in Denmark until 30 September 2010. If a bank did not meet the capital requirements, it had to transfer all of its assets and non-subordinated liabilities to the state-owned winding-up company, the Financial Stability Company. Equity and subordinated capital, including Additional Tier 1 cap-

ital, would not be transferred, but would remain in the distressed bank. In return for the guarantee, the financial sector had to contribute up to kr. 35 billion. A potential profit in the Financial Stability Company would be reverted to the government. A total of eight Danish banks were taken over by the Financial Stability Company during the guarantee period.[1]

Government capital injections and individual guarantees (Bank Rescue Package 2)

In February 2009, the Folketing adopted a new bank rescue package, under which Danish credit institutions could obtain government capital injections in the form of Additional Tier 1 capital. The background was deterioration of the economic conditions, which led to mounting pressure on the institutions' solvency. Due to the financial crisis, it was difficult to raise further capital in the international capital markets, and therefore the institutions could be forced to reduce their loans with a resultant risk of a credit crunch. When the scheme expired, capital injections had run into approximately kr. 46 billion, distributed among 43 institutions.

At the same time, a scheme was established, allowing Danish credit institutions to apply for individual government guarantees until 31 December 2010 for specific issuances with maturities of up to three years. The intention was to ensure that Danish credit institutions could raise liquidity, also after the expiry of the general guarantee. The scheme was intended to facilitate the transition to funding on normal market terms. As at 31 December 2010, 50 institutions had issued debt totalling kr. 193 billion with individual government guarantees. As at 30 June 2011, outstanding guarantees had been reduced to kr. 172 billion, primarily due to early redemptions.

The resolution scheme (Bank Rescue Package 3)

The expiry of the general government guarantee on 30 September 2010 created a need to find a new model for winding up distressed banks. On the one hand, there was political consensus not to extend the general guarantee and that banks had to stand on their own feet again. The government guarantee was inevitable during the financial crisis, but would give rise to an inappropriate incentive structure in the sector in the long term. On the other hand, it would not be desirable to wind up

[1] Capinordic Bank, EBH Bank, EIK Bank Danmark, EIK Banki Føroya P/F, Fionia Bank, Gudme Raaschou Bank, Løkken Sparekasse and Straumur Burdaras Investment Bank hf.

a distressed bank according to the rules laid down in the Danish Insolvency Act.

In June 2010, the Folketing therefore adopted a new scheme for handling distressed banks in an orderly manner. The scheme offers a clear alternative to compulsory liquidation in the form of controlled winding-up via the state-owned winding-up company, the Financial Stability Company.

ADVANTAGES OF THE RESOLUTION SCHEME

It is not desirable to wind up a bank via compulsory liquidation, as this would mean that the depositors would have their payment cards cancelled and that borrowers' loans would be called. Moreover, compulsory liquidation proceedings take many years, during which creditors have no access to their funds.

To avoid compulsory liquidation, distressed banks have previously been handled through ad hoc solutions with the government and Danmarks Nationalbank as active participants. To ensure sufficient time for an orderly winding-up, it has been necessary – unlike what applies to other private companies – to shield non-subordinated creditors from losses. The government and hence the taxpayers have instead covered the losses. The most recent example was in 2008 when Danmarks Nationalbank and the financial sector had to take over all assets and liabilities of Roskilde Bank except for Additional Tier 1 capital and Tier 2 capital.

Add to this the risk that the market perception will be that the government will always step in if a bank becomes distressed. This reduces the creditors' incentive to be aware of the risk assumed by the individual bank. Banks with high risk appetite would therefore be able to obtain funding on largely the same conditions as more conservative banks.

The absence of market discipline could cause the individual bank and the sector overall to assume inappropriately high risks. During periods of economic boom, the banks most willing to assume risk will tend to generate high returns. This puts pressure on more risk-averse banks to obtain the same return in the short term, thus pushing them to assume high risk. As a result, risk appetite in the sector may generally become too high.

Under the resolution scheme, a distressed bank can be wound up in a controlled and predictable manner without government involvement. The government can therefore only suffer a loss if it has assumed credit risk on a distressed bank, e.g. by issuance of an individual government guarantee. Basically, the risk of loss lies with the shareholders and the creditors. Consequently, each bank is motivated to limit its risks and

maintain an adequate capital buffer to obtain access to cheaper funding.

It has been said to pose a challenge that Denmark is the first European country to introduce a scheme involving a risk of loss for non-subordinated creditors. It is, however, worth noting that a uniform limit of 100,000 euro applies to coverage by the guarantee funds in all EU member states.

Danmarks Nationalbank attaches great importance to the European Commission's work to establish a common framework for crisis management. Overall, the future regulation is expected to pave the way for a system in which the use of public funds for the rescue of distressed banks is reduced. This could imply that non-subordinated creditors will contribute to bearing the losses when a bank becomes distressed, as is the case in Denmark today.

THE RESOLUTION SCHEME IN GENERAL

The resolution scheme will only be applied if it is not possible to find a market solution, cf. Box 1. In principle, market solutions and private transfers take precedence over using the resolution scheme, but uncertainty over the credits granted may be so substantial that it is not possible to find a buyer.

Winding-up under the resolution scheme presupposes that the bank no longer meets the regulatory capital requirements and that the Danish Financial Supervisory Authority has set a deadline for the bank's restoration of the capital. Therefore, the resolution scheme cannot be applied until the failure of the bank is imminent and inevitable.

The resolution scheme ensures that the distressed bank can transfer its activities to the Financial Stability Company during a weekend. In practice, the Danish Financial Supervisory Authority will, in so far as this is possible, announce a deadline for the distressed bank on a Friday afternoon, expiring on the forthcoming Sunday, cf. Box 2. A fast transfer of assets reduces the risk of a run on the bank.

No later than six hours after the bank has been notified of the deadline, the board of directors must decide whether the bank is to be wound up under the resolution scheme if the capital cannot be re-established before the deadline set. Otherwise, the bank must be wound up according to the rules laid down in the Danish Insolvency Act.[1] In the following, the bank is assumed to opt for the resolution scheme.

[1] It may be decided at the general assembly meeting of the bank whether the resolution scheme is to be used in such a situation. If so, the board of directors must respect the decision made at the general assembly meeting.

MARKET SOLUTIONS Box 1

In most cases, the transfer of a distressed bank to another bank would be preferable to winding it up under the resolution scheme. Therefore, the intention behind the resolution scheme is that the possibilities of market solutions and private transfers are explored before the resolution scheme is applied. If a bank is in a situation of insolvency or is presumed to become insolvent, the board of directors can transfer the activities of the bank, in part or in full, to another bank without convening an extraordinary general assembly meeting.[1] This option is available until the time at which the board of directors of a distressed bank enters into a transfer agreement with the Financial Stability Company.

An amendment from June 2011 gave the Guarantee Fund for Depositors and Investors the possibility of providing a dowry or a guarantee for the coverage of a distressed bank's non-subordinated creditors if the distressed bank is transferred to another bank. Such dowry presupposes complete transfer of the distressed bank's non-subordinated claims to another bank, which is capable of continuing all activities under a viable business model. Thus, non-subordinated creditors, including depositors, will not suffer a loss, but shareholders and owners of subordinated capital will have lost their investment. The Guarantee Fund can only provide a dowry if this is a financially more favourable solution for the Guarantee Fund than to pay coverage to the depositors.

In August 2011, a majority of the Folketing agreed on a number of initiatives to strengthen the sector's scope for consolidation. In future, the Financial Stability Company will have the option of providing a supplementary dowry – in addition to a dowry from the Guarantee Fund – if this is necessary for a private transfer of a distressed bank. The Financial Stability Company can contribute an amount corresponding to the government's expected loss on individual government guarantees if the bank were to be wound up under the resolution scheme.

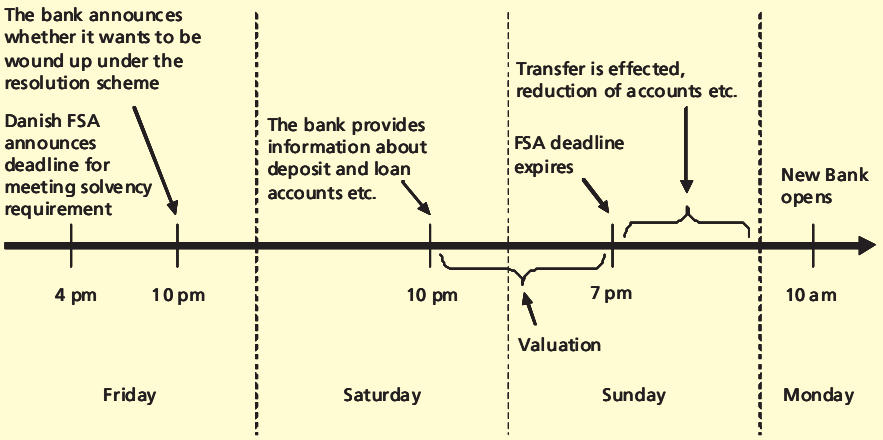
[1] Cf. Section 247 of the Danish Financial Business Act.

Over the next 24 hours, the distressed bank must provide certain information to the Financial Stability Company. This information will form the basis for a preliminary valuation of the bank's assets. Moreover, the bank must prepare an overview of deposits covered by the Guarantee Fund for Depositors and Investors. All banks are required to have efficient business procedures and systems that make it possible to provide such information within 24 hours. This is to ensure that the activities of the bank can always be transferred swiftly and efficiently.[1]

If the distressed bank cannot raise the required capital by the expiry of the deadline, it is obliged to conclude an agreement with the Financial Stability Company for transferring the bank's assets to a subsidiary of the Financial Stability Company (New Bank). In principle, the transfer

[1] The Danish Financial Supervisory Authority's Executive Order on readiness for winding-up stipulates the detailed requirements for the necessary business procedures and systems.

EXAMPLE – TIMELINE FOR TRANSFER Box 2



will comprise all the bank's assets. Moreover, New Bank must take over all employees, employee obligations and, if possible, other bilateral agreements. Such agreements, including netting agreements concerning trade in foreign exchange and derivatives contracts, can only be taken over in accordance with the conditions laid down in the specific agreements.

The Financial Stability Company and the board of directors of the distressed bank must agree on a preliminary transfer sum for the assets. New Bank pays the transfer sum by taking over a proportionate share of the distressed bank's non-subordinated liabilities. If the assets turn out to have a higher value, New Bank will take over additional liabilities.

The preliminary transfer sum will not be paid in full at the time of the transfer. Part of the transfer sum is retained in the form of an intermediate account to meet a situation in which the final valuation turns out to be lower than the preliminary valuation. The example in Box 3 illustrates the correlation between the transfer sum, the intermediate account and the proportionate share of non-subordinated liabilities taken over by New Bank.

In order for New Bank to carry on operation of the distressed bank's activities, the Financial Stability Company injects capital and liquidity into New Bank on the Sunday, so that it meets the regulatory capital and liquidity requirements. The Financial Stability Company can obtain the necessary funding via the Danish government's re-lending facility. Sunday evening, the Financial Stability Company issues a press release on the transfer, and Monday morning, New Bank opens as usual at the distressed bank's premises.

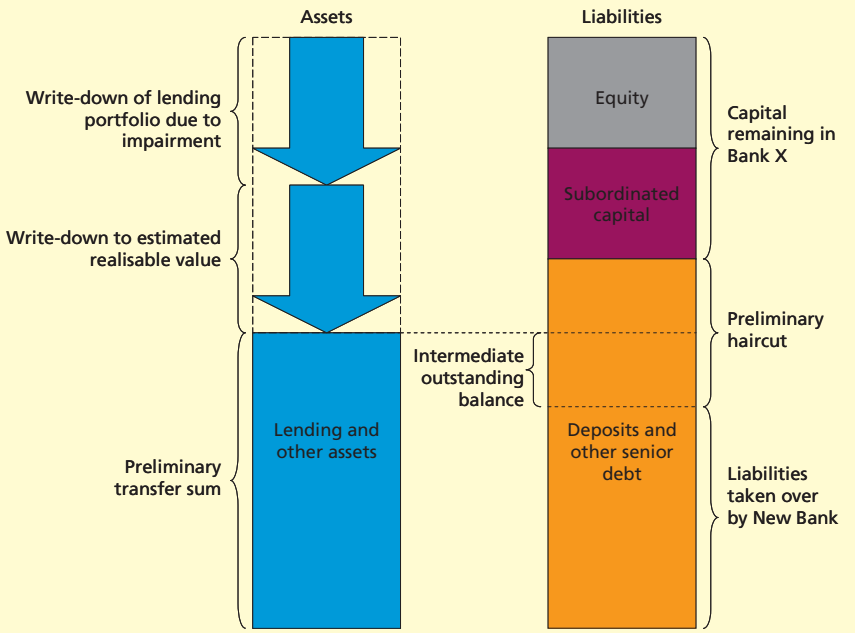
CORRELATION BETWEEN TRANSFER SUM, OUTSTANDING BALANCE AND LIABILITIES TAKEN OVER BY NEW BANK — Box 3

A review of Bank X's exposures shows that a large share of its lending portfolio is impaired and therefore has to be written down, which means that the equity of Bank X is lost.

Bank X cannot meet the capital requirements and decides to apply the resolution scheme. The bank's assets are written down to estimated realisable values in the case of immediate transfer to an independent party. The sum of the estimated realisable values is identical to the preliminary transfer sum.

New Bank executes payment by taking over a proportionate share of non-subordinated claims against Bank X. Part of the transfer sum is retained in the form of an intermediate outstanding balance (meaning that Bank X will have a claim on New Bank). The outstanding balance is settled when the auditors' valuation is available.

ASSETS AND LIABILITIES OF BANK X



Danmarks Nationalbank's tasks in connection with the transfer of a distressed bank are described in Box 4.

Deposits covered by the Guarantee Fund for Depositors and Investors

Ordinary deposits are covered by the Guarantee Fund for Depositors and Investors up to an amount equivalent to 100,000 euro. The depositors' net claims are covered, implying that the calculation of the individual

DANMARKS NATIONALBANK'S OPERATIONAL TASKS Box 4

Danmarks Nationalbank primarily has two operational tasks when a distressed bank is wound up under the resolution scheme. The tasks are based on Danmarks Nationalbank's role in the Danish payment systems and as bank to the Financial Stability Company.

Banks in Denmark hold accounts with Danmarks Nationalbank. Their primary account is the current account, but they also hold accounts used for various payment and settlement systems. These accounts are crucial for e.g. the bank's securities trading and settlement of retail payments, such as debit card payments.

Customers of a distressed bank whose activities will be continued in a subsidiary of the Financial Stability Company (New Bank) must still be able to carry out daily banking transactions, including online banking transfers, debit card payments and securities trading via the bank. Therefore, Danmarks Nationalbank, the Financial Stability Company and the payment settlement companies VP Securities and Nets have agreed on a road map, under which New Bank takes over the distressed bank's accounts with and exposures to Danmarks Nationalbank. New Bank also takes over the distressed bank's participation in the Kronos and Target2 payment systems.

Danmarks Nationalbank also has an operational role, as the Financial Stability Company holds an account with Danmarks Nationalbank. When the Financial Stability Company establishes New Bank, the Financial Stability Company may need capital and liquidity to comply with the regulatory requirements and meet New Bank's obligations. The Financial Stability Company can obtain the necessary funding by raising loans via the government's re-lending facility. Such re-lending will be paid out of the government's account with Danmarks Nationalbank.

depositor's claim must exclude any obligations of the depositor towards the bank in question, such as loans. Some special deposits are fully covered by the Guarantee Fund regardless of the size of the amount. These are e.g. certain pension-savings accounts, children's savings accounts, lawyers' client accounts and certain accounts stemming from property transactions and mortgaging.

At the time of the transfer of the distressed bank's assets, New Bank must assess the individual depositors' claims against the Guarantee Fund. Basically, New Bank takes over a proportionate share of the deposits covered, corresponding to the handling of other non-subordinated claims. If New Bank has to take over 75 per cent of non-subordinated claims according to the transfer agreement, this will also include 75 per cent of (net) deposits covered.

Furthermore, New Bank must credit an amount to the depositors' accounts, equivalent to the expected coverage from the Guarantee Fund. This ensures that the entire claim will be available to depositors on the Monday, presuming that the full amount is covered by the Guarantee Fund. Depositors with ordinary deposits that exceed the coverage from the Guarantee Fund will have an amount available corresponding to 100,000 euro plus a proportionate share of the remaining amount, cf. Box 5.

EXAMPLE – DEPOSITS EXCEEDING KR. 750,000 Box 5

According to the transfer agreement, New Bank takes over 75 per cent of Bank X's non-subordinated claims. A depositor has a deposit of kr. 2,000,000 and a loan of kr. 750,000. The depositor's deposit in New Bank at the opening on Monday morning can be calculated as follows:

- The depositor's net claim totals kr. 1,250,000, as the loan is offset against the deposit.
- Around kr. 750,000 (equivalent to 100,000 euro) is covered by the Guarantee Fund for Depositors and Investors. This amount is transferred in full, as New Bank must make an amount available in the customer's account corresponding to the expected coverage from the Guarantee Fund.
- Of the part of the net claim exceeding the coverage by the Guarantee Fund, namely around kr. 500,000, 75 per cent is transferred. Hence, additional kr. 375,000 will be made available to the depositor. A deposit totalling kr. 1,125,000 will be transferred.
- The depositor has a residual claim of around kr. 125,000 against Bank X. This amount is an unsecured claim against Bank X, and is at risk of being fully or partly lost.

The amounts on account may subsequently be adjusted. In connection with the deposits, New Bank is subrogated to the depositor's claims against the Guarantee Fund. Until New Bank receives payment from the Guarantee Fund, it can fund the amounts on account via liquidity from the Financial Stability Company, cf. Box 4.

Valuation and subsequent adjustment

Valuation of the distressed bank's assets takes place in several steps. In connection with the transfer to New Bank, a preliminary valuation is made, which can subsequently be increased when two independent auditors have prepared a valuation report. If it turns out that there is a net profit in New Bank when all activities have been transferred to another party or liquidated, the transfer sum must be adjusted by this net profit.

Before the conclusion of the transfer agreement, the Financial Stability Company prepares a preliminary valuation of the distressed bank's assets. This valuation determines the size of the dividend on account. The dividend can subsequently be increased, but not reduced.

The assets are valued at estimated realisation values, meaning the value that the assets are expected to bring in at the time of acquisition in the case of immediate transfer between independent parties, less expected costs of sale. The valuation may not include goodwill and other intangible assets.

Part of the transfer sum is retained in an intermediate outstanding balance. The outstanding balance functions as a buffer in case the auditors' valuation is lower than the preliminary valuation. The size of the out-

EXAMPLE – SUBSEQUENT ADJUSTMENT OF THE TRANSFER SUM Box 6

Bank X cannot meet the capital requirement and therefore transfers its assets to New Bank. Bank X and the Financial Stability Company agree on a preliminary transfer sum of kr. 1 billion. The valuation council of the Guarantee Fund for Depositors and Investors sets the intermediate outstanding balance at kr. 150 million. New Bank must therefore initially take over a proportionate share of non-subordinated claims worth kr. 850 million. The subsequent valuation – by two independent auditors – has the following consequences:

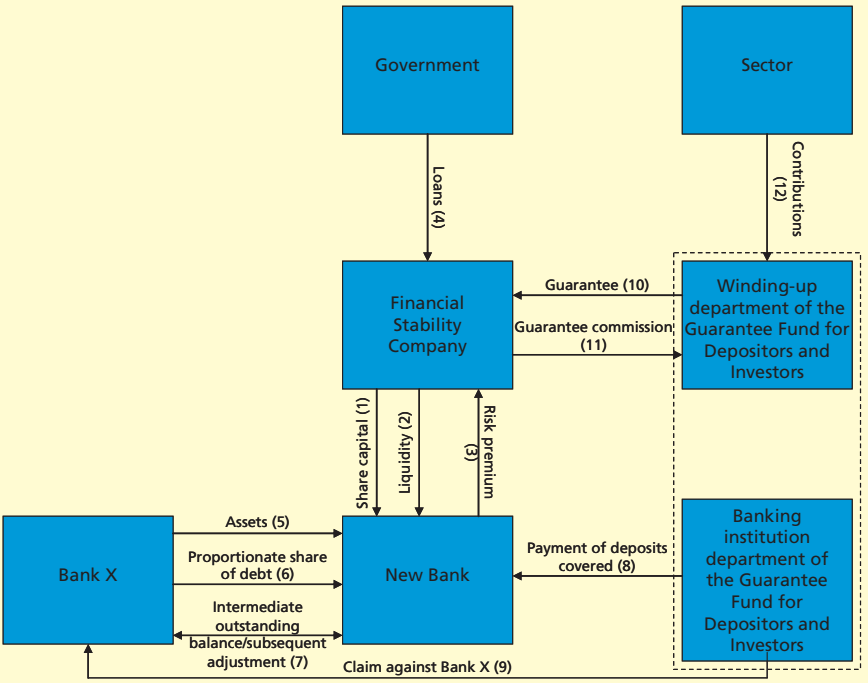
- If the auditors estimate the value of the assets at kr. 900 million, New Bank will have to take over an additional proportionate share of the claims, equivalent to kr. 50 million. This means that the dividend on account for non-subordinated creditors is increased. The outstanding balance is written down to 0.
- If the auditors estimate the value of the assets at kr. 700 million, New Bank has actually taken over claims of an excessive kr. 150 million. The outstanding balance cannot be negative, but is written down to kr. 0. New Bank's loss of kr. 150 million is covered by a guarantee provided by the Guarantee Fund.
- If the auditors estimate the value of the assets at kr. 1.2 billion, New Bank will have to take over an additional proportionate share of the claims, equivalent to kr. 350 million. This means that the dividend on account for non-subordinated creditors is increased. The intermediate account is written down to 0. If New Bank has taken over all non-subordinated claims, any residual amount is paid in cash to the estate of the distressed bank.

standing balance is fixed by the valuation council of the Guarantee Fund, taking into account uncertainty over the size, scope and value of the obligations. The outstanding balance is recognised in the distressed bank's balance sheet as a claim on New Bank.

Immediately after the transfer, the Financial Stability Company must advertise for creditors barring claims not lodged within three months, meaning that creditors are encouraged to report any claims on the distressed bank to New Bank. Two auditors appointed by the Institute of State Authorised Public Accountants in Denmark must as soon as possible after the expiry of the deadline prepare a valuation report with an independent assessment of the estimated realisable value at the time of transfer.

If the auditors find that the preliminary transfer sum is too high, the valuation of the assets must be adjusted via the outstanding balance. If the auditors find that the preliminary transfer sum is too low, however, New Bank has to take over an additional proportionate share of the distressed bank's liabilities. Consequently, the dividend on account for non-subordinated creditors will be increased. On the other hand, the dividend can never be reduced, not even if the outstanding balance unexpectedly turns out to be inadequate. If so, the Guarantee Fund will have to cover any losses, cf. Box 6. So there is no risk that the creditors will incur additional losses as a result of a changed valuation.

TRANSACTIONS IN WINDING-UP OF BANK X Box 7



1 The Financial Stability Company injects capital into New Bank, so that New Bank meets the regulatory capital requirement.
2 The Financial Stability Company gives New Bank a liquidity line.
3 New Bank pays interest on the injected capital at the EC's base rate + 1,000 basis points and on the liquidity received at the EC's base rate + 100 basis points.
4 The Financial Stability Company can obtain funding via the government re-lending facility or in the private market.
5 Bank X transfers all assets to New Bank. A preliminary transfer sum is agreed on. The transfer sum is subsequently adjusted when the auditors' final valuation is available.
6 New Bank takes over a proportionate share of the non-subordinated claims corresponding to the preliminary transfer sum (less the outstanding balance).
7 Part of the preliminary transfer sum is retained in the form of an outstanding balance.
8 New Bank takes over the depositors' claims against the Guarantee Fund and receives the deposits covered.
9 The Guarantee Fund takes over the covered part of the depositors' claims against Bank X.
10 The winding-up department of the Guarantee Fund provides a guarantee to the Financial Stability Company for the winding-up of New Bank.
11 The Financial Stability Company pays a premium for the guarantee, matching the difference between the risk premium received from New Bank (see step 3) and the Financial Stability Company's actual financing costs for New Bank.
12 The sector pays contributions to the Guarantee Fund's winding-up department in case the winding-up of New Bank results in a loss.

To ensure that the distressed bank (and its creditors) obtains payment for the full value of the assets, the transfer agreement must include a provision that the transfer sum will be adjusted subsequently by the net profit, if any, at New Bank after transfer to another party or liquidation of New Bank. A net profit means a profit after return at market rate on the equity made available by the Financial Stability Company. Hence, it is possible that the distressed bank's creditors may obtain further payment, also after the auditors' valuation.

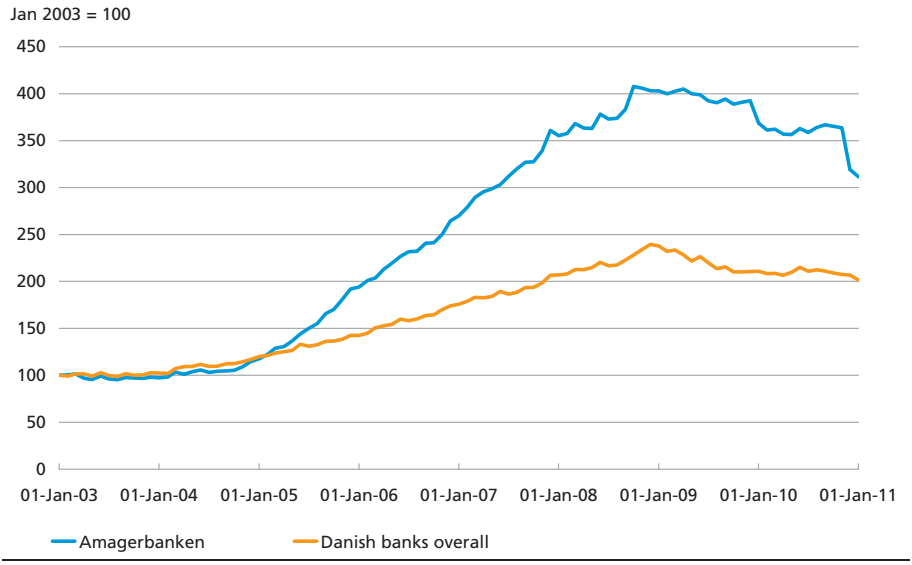
Box 7 illustrates the payment transactions in the winding-up of a distressed bank.

CASE STUDY: AMAGERBANKEN

Amagerbanken was the first bank to be wound up under the resolution scheme. During the years ahead of the financial crisis, the bank reported strong lending growth, cf. Chart 1, particularly within property financing. At end-2010, Amagerbanken held a 1.6 per cent market share of total bank lending in Denmark, ranking ninth among banks in terms of lending.

The process leading up to the winding-up of Amagerbanken in February 2011 is described in the speech manuscript of the Minister for Economic and Business Affairs from the open consultation in the Trade and Industry Committee of the Folketing on 22 March 2011. The speech

LENDING GROWTH IN 2003-11 Chart 1



Note: Lending from Danish banks overall comprises loans from Danish branches only.
Source: Danmarks Nationalbank.

manuscript provides the basis for the description in this article of the sequence of events at the bank.

Attention was already focused on Amagerbanken when the financial crisis escalated in the autumn of 2008. Shortly before the adoption of Bank Rescue Package 1, the bank had been allowed to withdraw liquidity from Danmarks Nationalbank for a limited period. When Amagerbanken was included in the general government guarantee under Bank Rescue Package 1, the bank repaid the liquidity to Danmarks Nationalbank.

Amagerbanken was among the banks that made use of Bank Rescue Package 2 and applied for a government capital injection. The Danish Financial Supervisory Authority carried out an inspection of the bank, showing that the need for solvency reservations and write-downs was so pronounced that the bank had to raise new capital. Amagerbanken raised just under kr. 1 billion in capital, after which it once again met the solvency requirement. Against this backdrop, it obtained an agreement for a government capital injection of kr. 1.1 billion in December 2009.

Amagerbanken also decided to apply for an individual government guarantee. It applied for an individual government guarantee totalling kr. 13.5 billion from the Financial Stability Company, which entered into negotiations with Amagerbanken about the conditions for such a guarantee. The Financial Stability Company assessed that there was a not insignificant risk associated with granting the bank an individual government guarantee. Therefore, the Financial Stability Company found that the bank had to fulfil certain requirements to justify the guarantee.

In June 2010, Amagerbanken entered into an agreement with the Financial Stability Company on an individual government guarantee totalling kr. 13.5 billion. According to the agreement, the bank had to register a kr. 750 million increase of its capital base by 15 September 2010. Moreover, two members with special powers and appointed by the Financial Stability Company were to be elected to the Board of Directors.

The conditions stipulated by the Financial Stability Company were met by Amagerbanken's capital increase in September 2010 when the bank announced that it had raised almost kr. 900 million in capital. At an extraordinary general assembly meeting in November 2010, the bank's shareholders elected a new Board of Directors. In the same month, a new CEO was appointed.

The new management immediately instigated a detailed review of the bank's exposures. The review unveiled a need for further write-downs, which meant that Amagerbanken no longer met the solvency require-

ment. As a consequence, the bank agreed with the Financial Stability Company to transfer its activities to a new bank set up by the Financial Stability Company (Amagerbanken af 2011) on 6 February 2011.

Before the transfer to Amagerbanken af 2011, potential private solutions were discussed with various banks with a view to continuing Amagerbanken's activities in the private sector. However, no bank was willing to buy the bank in its entirety; not even in a structure in which the government participated via the Financial Stability Company.

The practical execution

The purchase sum for Amagerbanken's assets was preliminarily set at kr. 18.5 billion. Amagerbanken af 2011 paid for the assets by taking over exposures of Amagerbanken worth kr. 15.2 billion. At the same time, an intermediate outstanding balance of kr. 3.3 billion was established. The transfer was effected between 8:00 pm and midnight on Sunday 6 February, during which interval no entries could be made in the online banking service due to technical changes.

Amagerbanken af 2011 took over liabilities equivalent to 58.8 per cent of the non-subordinated claims of Amagerbanken. This meant that non-subordinated creditors had their claims reduced by 41.2 per cent in so far as they were not covered by the Guarantee Fund for Depositors and Investors. More than 99 per cent of all depositors had their bank deposits covered. The shareholders and the owners of subordinated capital lost their entire investment.

Amagerbanken af 2011 opened on Monday 7 February 2011. The vast majority of customers were not affected by the transfer and could continue to use their payment cards and the online banking service as usual. Both domestic and foreign counterparties could execute payments to Amagerbanken af 2011 without any risk that the money would end up in Amagerbanken's bankruptcy estate. This was the first time that the scheme was applied, and a few of Amagerbanken's foreign counterparties were therefore insecure and dared not execute payments to Amagerbanken af 2011. This meant that Amagerbanken af 2011 was briefly cut off from executing other than purely domestic payments.

Status of the winding-up of Amagerbanken

In May 2011, Amagerbanken af 2011 sold all retail customers and minor corporate customers to the Faroese bank P/F BankNordik for a total of kr. 235 million. Subsequently, the remaining gross lending of Amagerbanken af 2011 amounted to kr. 13 billion distributed on around 200 large exposures. The settlement of these exposures will continue in the coming period.

INVESTIGATIONS INTO AMAGERBANKEN Box 8

In August 2011, the Danish Financial Supervisory Authority published a report on the supervision of Amagerbanken. According to this report, further considerable deterioration in a number of the bank's large exposures was the key reason that it could no longer meet the regulatory solvency requirement and had to be wound up via the Financial Stability Company. It is also revealed that the Danish Financial Supervisory Authority intends to report the former daily management of Amagerbanken to the police for having misinformed the Financial Supervisory Authority or not having complied with the Financial Supervisory Authority's instructions on a number of occasions.

In addition to the Financial Supervisory Authority's report, there will be an independent legal enquiry into Amagerbanken. The enquiry will look into the reasons behind the bank's financial collapse. At the same time, it will be disclosed whether there is basis for claims for liability in damages and/or criminal liability against members of the bank's management. The Financial Stability Company's involvement in the management will be included in the investigation.

Moreover, Rigsrevisionen (the national audit office of Denmark) has launched an independent investigation of Amagerbanken's individual government guarantee and the relevant authorities' roles in this connection.

The results of the independent investigations are not available yet.

In June 2011, the Financial Stability Company announced the auditors' valuation of Amagerbanken. Their valuation initially provided the basis for increasing the preliminary dividend payout rate from 58.8 to 84.4 per cent. The Guarantee Fund for Depositors and Investors has decided to contest the auditors' valuation in court, claiming that it should be reduced by a maximum of kr. 4.5 billion. In this context, it should be noted that the Guarantee Fund is liable for any losses of Amagerbanken af 2011 if the assets turn out to have a lower value than assumed by the auditors.

As the Guarantee Fund has set a ceiling for the required reduction in the valuation, the Financial Stability Company has been able to calculate a higher dividend on account for Amagerbanken's creditors. The preliminary higher dividend was set at 66.1 per cent, corresponding to an increase of the dividend payout rate by 7.3 percentage points.

Box 8 describes the investigations launched after the winding-up of Amagerbanken in February 2011.

Development Trends in the Danish Money Market

Palle Bach Mindested, Market Operations, and Lars Risbjerg, Economics

INTRODUCTION AND SUMMARY

A well-functioning money market ensures a clear transmission from Danmarks Nationalbank's monetary-policy interest rates to interest rates in the money market and the financial system in general. Money-market interest rates form the basis for the banks' deposit and lending rates vis-à-vis households and non-financial corporations.

Danmarks Nationalbank monitors developments in the money market on a continuous basis and conducted a survey of turnover in April 2011. The survey shows that the market for collateralised loans (repos and FX swaps) is growing relative to the market for uncollateralised loans (deposits). For maturities exceeding one week, turnover in uncollateralised loans remains very modest. The higher share of collateralised loans reflects a general tendency to limit credit risk in the light of the financial crisis.

The money market also comprises short-term interest-rate derivatives, including short-term interest-rate swaps, Cita swaps, used for managing interest-rate risk. The Cita swap rate includes only a limited element of credit and liquidity risk and therefore resembles a collateralised money-market interest rate. Turnover in Cita swaps has risen considerably since last year. In the longer maturity segments in the money market, which are particularly relevant when determining interest rates on loans to households and non-financial corporations, Cita swaps are the money-market product with the highest turnover. In a report published in July 2011, a working group with representatives from the Danish Bankers Association, the Association of Danish Mortgage Banks, the Danish Mortgage Banks' Federation and Danmarks Nationalbank recommends the introduction of a money-market reference rate based on Cita swaps as a supplement to the uncollateralised reference rates.

The money market is primarily used for exchange of liquidity among banks. Following the expiry of Bank Rescue Package 1 and subsequently the winding-up of Amagerbanken in February 2011, Danish banks taken as one have raised the rate of interest on outstanding deposits from

other monetary financial institutions, MFIs, only modestly. The interest rates paid by medium-sized banks on outstanding deposits from other MFIs have not risen relative to those of large banks. Moreover, the banks' interest rates on outstanding deposits outside the money market, including from households and non-financial corporations, have also risen only modestly. In general, deposit rates have developed in line with Danmarks Nationalbank's monetary-policy interest rates.

The following initially provides a description of developments in turnover in the Danish money market. In view of the increasing focus on collateralised products, this is followed by a section on Cita swaps and the Danish repo market. Finally, interest-rate developments in the money market are described.

TURNOVER IN THE MONEY MARKET

The money market for Danish kroner is the interbank market for cash products and interest-rate derivatives in kroner with maturities of up to 1 year, cf. Box 1. The cash products are used to procure or place liquidity and comprise uncollateralised loans (deposits) and loans against bonds (repos) and currency (FX swaps) as collateral. Interest-rate derivatives are used to manage interest-rate risk. The most important interest-rate derivatives in the Danish money market are Cita swaps and Forward Rate Agreements, FRAs.

Danmarks Nationalbank conducted a survey of turnover in the money market in April 2011. As in 2010, all 11 Tomorrow/Next, T/N, reporting banks participated in the survey. The 11 T/N reporting banks include the largest Danish and foreign players in the money market. The T/N reporting banks have reported their turnover in both borrowing from and lending to banks.[1]

Trading in the Danish money market primarily takes place directly between counterparties, either by telephone or via electronic trading facilities. A small share is conducted via money-market brokers, who do not take positions themselves but simply establish contact between sellers and buyers of money-market products. The brokers supply anonymised data about the best bid and ask prices in the individual products on a continuous basis.

Average daily turnover in lending and borrowing in cash products fell by 10 per cent relative to the year before, to kr. 132 billion in April 2011. The total outstanding lending and borrowing of the T/N reporting banks

[1] The results of the 2010 survey are described in Jørgensen and Risbjerg (2010).

PRODUCTS IN THE MONEY-MARKET SURVEY FOR KRONER[1] Box 1

Cash products

Cash products are used to procure or place liquidity and entail exchange of liquidity in kroner at the conclusion of the agreement.

Deposits are uncollateralised loans in kroner with standardised maturities ranging from 1 day to 12 months. Normally the rate of interest is higher than for corresponding collateralised loans.

Repurchase agreements (repos) are collateralised loans in kroner with standardised maturities ranging from 1 day to 12 months. The collateral pledged comprises securities, typically bonds. The term repurchase agreements indicates that the seller of the bonds (recipient of liquidity) when concluding the agreement also enters into an obligation to repurchase the securities at a future point in time at a price agreed when the agreement is concluded. The repo rate is reflected in the difference between the agreed sales and purchase prices (spot and forward prices).

FX swaps are collateralised loans in kroner with standardised maturities ranging from 1 day to 12 months. The collateral is foreign exchange. FX swaps can be seen as a simultaneous spot transaction and forward contract in foreign exchange. When the spot transaction is executed, kroner are swapped for foreign exchange, while opposite payments take place when the forward contract is executed.

Interest-rate derivatives

Interest-rate derivatives are used to manage interest-rate risk. No initial exchange of liquidity takes place. The exchange of liquidity is limited to settlement of the interest-rate differences at an agreed point in time.

Cita swaps (Copenhagen Interest T/N Average), cf. Box 2.

A *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 applying the difference between the agreed reference interest rate, e.g. Cibor, and the agreed FRA rate on the principal. FRAs are typically concluded for 3- or 6-month interest rates via standardised contracts. If Cibor exceeds the agreed FRA rate in the future period, the bank purchasing a FRA will receive an amount to compensate for the difference. Conversely, if Cibor is lower than the FRA rate, the bank must pay the difference.

[1] The total money market also comprises short-term securities with terms to maturity of up to 1 year, Danmarks Nationalbank's certificates of deposit and interest-rate options. For further information about money-market products, see Danmarks Nationalbank (2009).

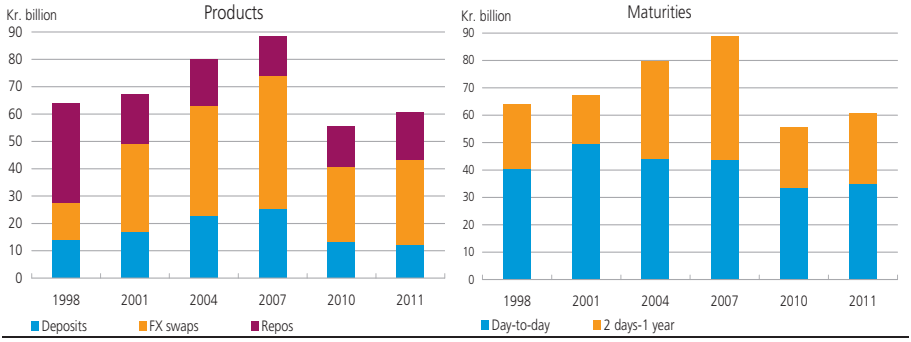
is estimated at just over kr. 1,000 billion.[1] On the lending side, total turnover has increased, but remains below the level seen before the financial crisis erupted in the summer of 2007, and is concentrated on short maturities, cf. Chart 1.[2]

[1] The outstanding volume has been estimated by assuming that, on each trading day, transactions are concluded with a maturity distribution corresponding to the distribution of turnover in the money-market survey, and that the average maturity of the transactions corresponds to the mid-point of the individual maturity segments. Uncollateralised loans and repo loans are estimated to total around kr. 190 billion. According to the MFI statistics, uncollateralised loans and repo loans by large and medium-sized Danish banks to other MFIs total kr. 246 billion. One of the reasons for the difference is that the group of T/N reporting banks includes foreign banks that are important players in the Danish money market, but does not include all large and medium-sized Danish banks.

[2] Turnover in lending and borrowing may differ as the T/N reporting banks have reported their aggregate trading with other banks, not only trading with other T/N reporting banks. In the survey, turnover is higher for borrowing than for lending. This shows that foreign banks that are not T/N reporting banks made deposits with the T/N reporting banks, while lending to banks outside the group of T/N reporting banks was more limited.

DEVELOPMENT IN TURNOVER IN LENDING BROKEN DOWN BY PRODUCTS AND MATURITIES

Chart 1

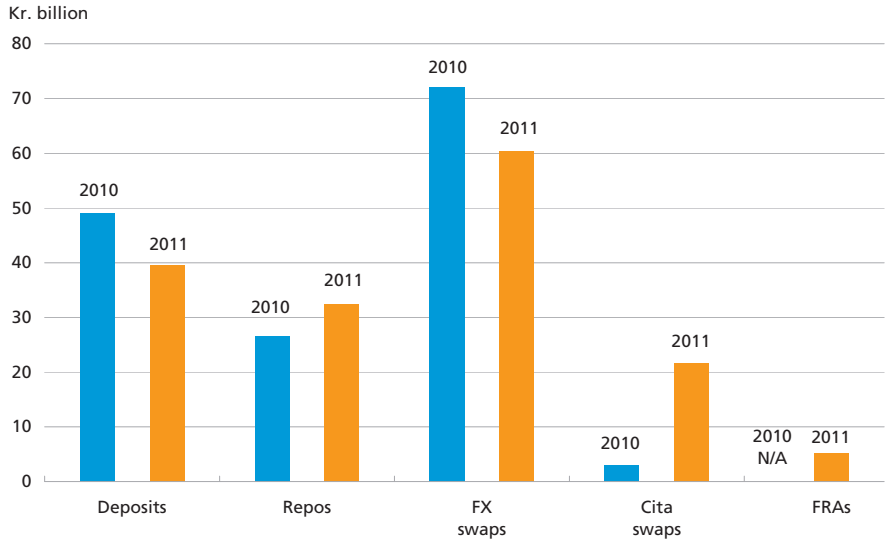


Note: Daily averages in April of the years in question. The timing of Easter may affect development patterns. Before 2010, data was collected for turnover in lending, but not in borrowing.
Source: Danmarks Nationalbank.

The downward trend in uncollateralised loans and the increasing concentration on the short maturities, which began during the financial crisis, have continued. Turnover in uncollateralised loans fell slightly from 2010 to 2011, cf. Chart 2, and the market for uncollateralised loans with maturities exceeding one week remains very small, cf. Chart 3. In the euro area, turnover is also relatively low for maturities exceeding one week, cf. ECB (2010b).

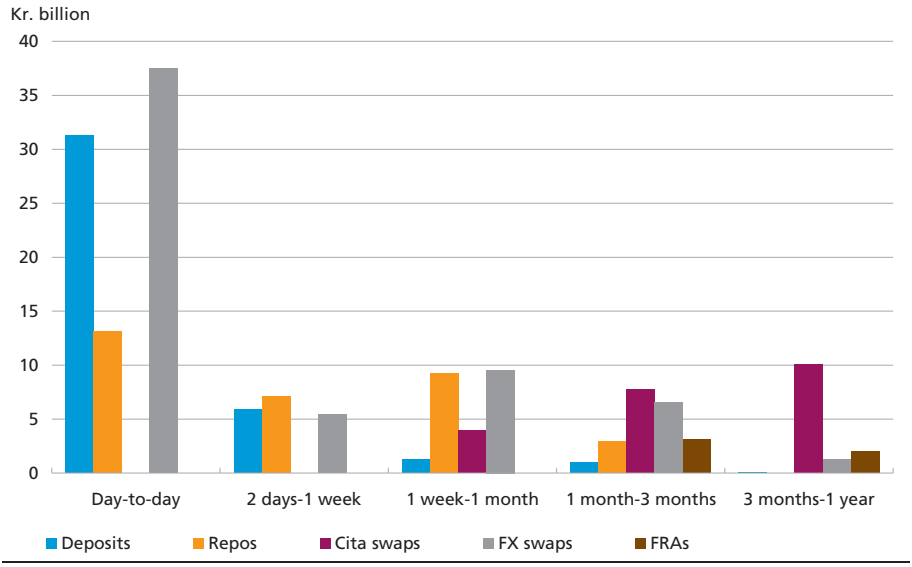
TURNOVER IN THE MONEY MARKET IN 2010 AND 2011 BROKEN DOWN BY PRODUCTS

Chart 2



Note: Average daily turnover in April 2010 and 2011. Includes both borrowing and lending for cash products and contracts where a fixed rate of interest is paid and received for derivatives.
Source: Danmarks Nationalbank.

TURNOVER IN 2011 BROKEN DOWN BY MATURITIES AND PRODUCTS Chart 3



Note: Average daily turnover in April 2011. Includes both borrowing and lending for cash products and contracts where a fixed rate of interest is paid and received for derivatives.
Source: Danmarks Nationalbank.

THE COLLATERALISED MARKET

The collateralised money market has gained significance since the financial crisis. This reflects a general tendency to focus more on limiting credit risk. Turnover in collateralised loans now accounts for some 70 per cent of total turnover in cash products, up from 67 per cent in 2010. In the euro area, the share of collateralised loans was around 80 per cent in the 2nd quarter of 2010, cf. ECB (2010a). Turnover in repos has increased by 22 per cent and has thus driven the development towards an increasingly important market for collateralised loans. Cita swaps are often regarded as collateralised money-market products. Turnover in Cita swaps was seven times as high in 2011 as in 2010, albeit from a low level.

Cita swaps

Cita swaps are used by financial institutions and firms to hedge interest-rate risk and take positions. For example, Cita swaps are used by some investors when buying bonds for financing adjustable-rate mortgages, which are fixed bullets bonds. If the investor has borrowed the money to buy the fixed bullets at a variable rate of interest, the investor incurs a risk that the variable rate of interest will rise, whereas the yield on the bonds remains the same throughout their maturity. This risk can be

avoided by entering a Cita swap, whereby a variable rate of interest is received and a fixed rate of interest paid. Basically, the investor has converted a variable-rate loan into a fixed-rate loan via the Cita swap.

In general, financial derivatives, including interest-rate swaps, are used to adjust the risk profiles of investors and issuers. This may be necessary if the risk profiles of investors and issuers do not match. For example, mortgage banks issue fixed bullets bonds that reflect the underlying mortgage loans, while investors as mentioned may desire a different risk profile. Likewise, the issuer may need to adjust its risk profile. The Danish government e.g. uses interest-rate swaps to separate issuance policy from the management of interest-rate risk, cf. Danmarks Nationalbank (2011).

Denmark's fixed-exchange-rate policy and the close link between interest rates in Denmark and the euro area mean that interest-rate risk is also to a large extent managed by means of short-term interest-rate swaps in euro, Eonia swaps. The rising turnover in Cita swaps should be viewed in the light of increased volatility in Eonia, which has made it more attractive to use Cita swaps.

The Cita rate as a supplementary reference rate

In a report published in July 2011, a working group recommends introducing a supplementary money-market reference rate based on Cita swaps.[1] The working group included representatives from the Danish Bankers Association, the Association of Danish Mortgage Banks, the Danish Mortgage Banks' Federation and Danmarks Nationalbank. The establishment of a reference rate based on the Cita swap rate reflects developments in the money market since the financial crisis, with focus on low credit risk. The Cita rate contains only a small element of credit risk, cf. Box 2, and will supplement the existing reference rates, making it possible to compare developments in credit and liquidity risk premiums. Furthermore, the establishment of a new supplementary reference rate will make the money market more transparent, and a similar rate is fixed on a daily basis in the euro area. Cita swaps account for the bulk of turnover in the money market for maturities exceeding three months, cf. Chart 3. The long maturities in the money market are particularly relevant when fixing the rate of interest on loans to households and non-financial corporations.

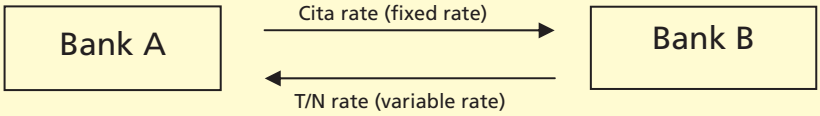
The interest-rate curve for Cita swaps is a key element in the pricing of money-market products. Market participants characterise the market for

[1] See "Report on supplementary reference rate in the Danish money market" at www.nationalbanken.dk under Press room, Press releases.

CITA SWAPS Box 2

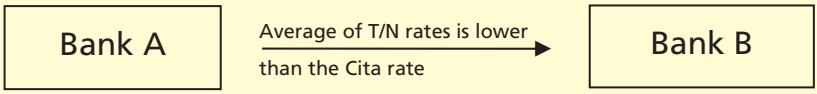
Cita swaps are short-term instruments in which a variable rate of interest, the T/N rate, is swapped for a fixed rate of interest, the Cita rate, which is determined when the contract is concluded. The contract can be concluded for standardised maturities ranging from 1 to 12 months. No principal is exchanged between the parties to an interest-rate swap. The principal of the interest-rate swap is purely used to determine the size of the payments. The T/N rate is a reference interest rate for the uncollateralised day-to-day market, calculated as a turnover-weighted average rate of the T/N reporting banks' T/N lending, which commences on the 1st banking day after and ends on the 2nd banking day after the contract date.

Interest rates in a Cita swap



The swap rate is fixed so that the market value of the swap is zero at the time when it is concluded. No principal amount is exchanged, so the liquidity impact is limited to the difference between the interest payments, which is calculated at the expiry of the contract when the T/N rates over the maturity of the swap are known. Hence there is no credit risk on the principal of a Cita swap. The only credit risk relates to the gain, if any, on expiry of the swap. If the average of the T/N rates is lower than the swap rate, bank A in this example will have to pay the difference between the fixed rate and the average of the T/N rates multiplied by the principal. Bank A will receive an amount if the T/N rates are higher.

Payments in a Cita swap



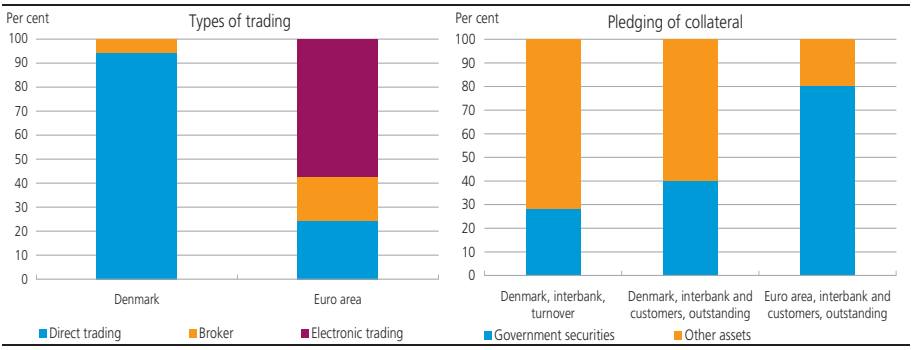
As the Cita rate is an expression of the average of the expected T/N rates over the maturity of the swap[1], it reflects only the limited credit and liquidity premiums linked to day-to-day loans.

[1] To be precise, the swap rate equals the average of the T/N forward rates over the maturity of the swap.

Cita swaps as liquid, which is supported by a market maker arrangement with five participants at present. Eonia swaps are to a large extent used as a benchmark for pricing Cita swaps. This means that market participants see the pricing as precise and effective, even at times when turnover is relatively modest.

TYPES OF TRADING AND PLEDGING OF COLLATERAL IN THE REPO MARKETS IN DENMARK AND THE EURO AREA

Chart 4



Note: The breakdown by types of trading in Denmark is based on input from the largest participants in the Danish repo market. Data for the euro area relates to the 2nd quarter of 2010 from ECB (2010b). Data for collateral in the Danish interbank market has been sourced from the money-market survey in April 2011. Data for the interbank market and trading with customers is from December 2010 and comes from ICMA (2010).

Source: ECB, ICMA and Danmarks Nationalbank.

The repo market

In most cases, trading in the Danish repo market takes place directly between counterparties, cf. Chart 4, left. A small share is conducted via brokers, while trading via electronic trading systems is non-existent. However, the latter accounts for a large share of trading in the euro area.

Interlink between the repo and bond markets

Repos are referred to as "special" or "general" depending on the collateral pledged. If it is a condition for concluding the repo that a specific asset is pledged as collateral, this is known as special collateral.

A general collateral repo may be collateralised by several different assets (a basket). The basket may contain e.g. government securities. The borrower in the repo transaction decides which securities from the basket to pledge as collateral.

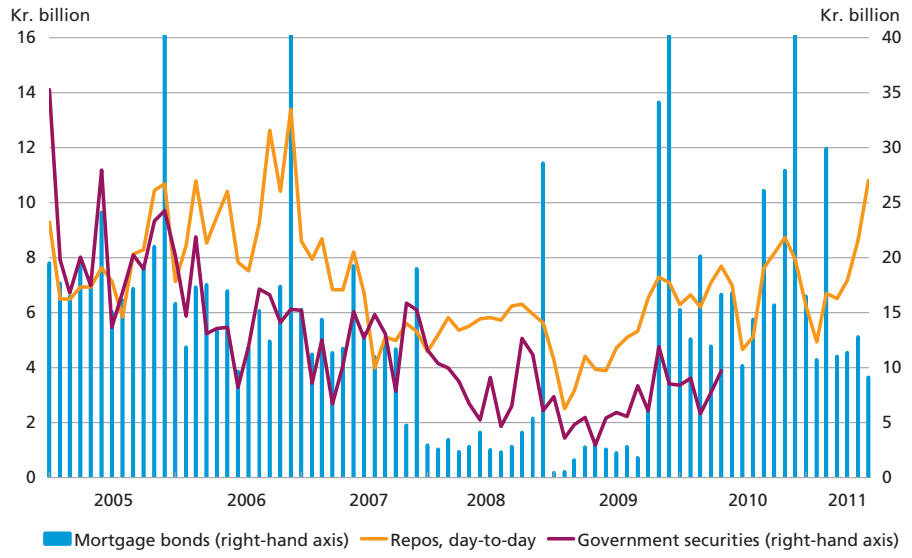
General collateral repos account for around two thirds of turnover in the Danish repo market, while special collateral repos make up the rest.

General collateral repos reflect a need to procure or place liquidity. Bond purchases by investors are to a large extent financed via repos.

Special collateral repos are often concluded because the lender needs the underlying bonds. In connection with repos, ownership of the securities pledged as collateral is transferred from the borrower to the lender. Hence, the lender may sell the securities to a third party. This may be particularly relevant for market makers, i.e. banks that have entered into an obligation to quote current bid and ask prices for agreed

TURNOVER IN DAY-TO-DAY REPOS, GOVERNMENT SECURITIES AND MORTGAGE BONDS

Chart 5



Note: Monthly observations. Average daily turnover. Turnover in repos includes trading in repo loans in the interbank market. Turnover in mortgage bonds from Nasdaq OMX. To avoid large fluctuations in the chart in connection with the auctions for mortgage bonds financing adjustable-rate mortgages in December, turnover in mortgage bonds in December 2005, 2006, 2009 and 2010 has been cut off at kr. 40 billion. Actual turnover was kr. 67, 79, 77 and 83 billion, respectively. Data for trading in government securities from Buchholst, Gyntelberg and Sangill (2010). The most recent observations are from July 2011 for repos and mortgage bonds and May 2010 for government securities.

Source: Nasdaq OMX and Danmarks Nationalbank.

amounts within agreed spreads in the bond market. These banks use repos to sell bonds without owning the bonds. The repo market allows the bank to deliver the bonds rapidly until they can subsequently be bought in the market.

In this way, a well-functioning repo market supports pricing and liquidity in the bond market. High liquidity supports investor interest in the bonds, thereby contributing to lower yields. Liquidity in the bond market affects bond yields and hence the costs of e.g. a on mortgage loan.[1]

The close correlation between the repo and bond markets means that turnover in the two markets normally moves in tandem, cf. Chart 5. During the crisis turnover declined in the day-to-day market, as it did in the bond market. Since then, both the repo and bond markets have picked up.

[1] Market makers in Danish government securities, primary dealers, can borrow government securities against collateral under the lending facilities of the central government and the Social Pension Fund, SPF, cf. Danmarks Nationalbank (2011). These facilities are aimed at supporting trade in government securities. In addition, Danmarks Nationalbank lends bonds from its securities portfolio. Danmarks Nationalbank's monetary-policy loans resemble repos considerably in that they are collateralised. However, ownership of the securities is not transferred to Danmarks Nationalbank.

In most of the repos traded in the Danish market, mortgage bonds are pledged as collateral, while the share of repos based on government securities is far greater in the euro area, cf. Chart 4, right. Repos against mortgage bonds as collateral are mainly traded by Danish counterparties.

The financial crisis has increased focus on the quality of the securities pledged as collateral for repos, and repo prices have become more differentiated, depending on the quality of the underlying securities.[1]

INTEREST-RATE DEVELOPMENTS IN THE MONEY MARKET

Interest rates in the money market are the basis for interest rates in the rest of the financial system. A well-functioning money market supports the transmission from Danmarks Nationalbank's interest-rate changes to the rest of the financial system. Interest rates in the money market reflect current and expected monetary-policy interest rates, cf. Chart 6.

In connection with the financial crisis, the reference rate for uncollateralised interest rates (Cibor) rose relative to the corresponding collateralised interest rates. The spread subsequently narrowed, but as in number of other countries it has widened considerably recently in view of the renewed financial turmoil triggered by the increasing focus on debt problems in parts of the euro area and the USA, cf. Chart 7. The widening has been less pronounced in Denmark than in the euro area. The T/N interest rate and the Cita rate, which is based on the T/N rate, have remained closely linked to the monetary-policy interest rates during the last year.

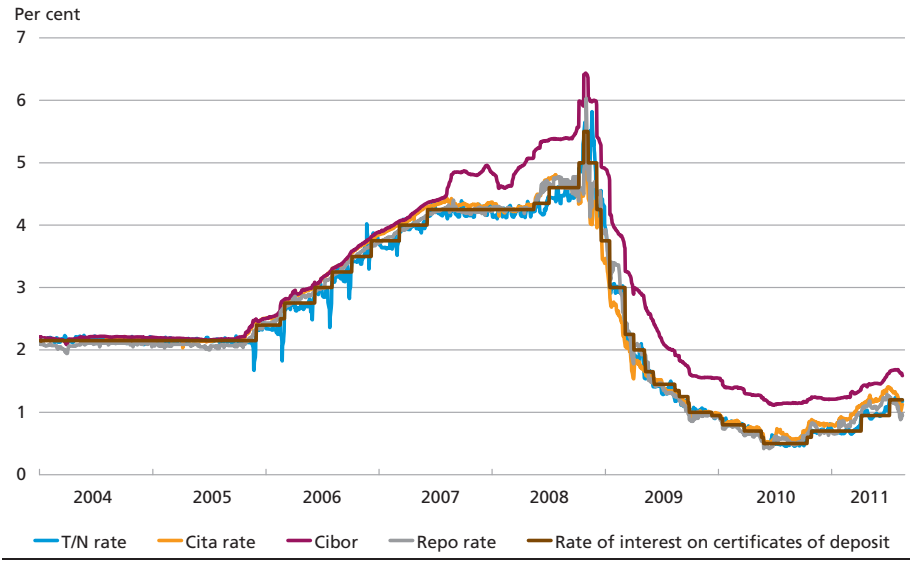
The money market is primarily used for exchange of liquidity among banks. For some banks, it may also be used to bridge customer funding gaps at times. The banks' funding is primarily based on deposits from households and non-financial corporations, which are normally seen as stable sources of funding, and on issuance of shares, bonds and short-term securities.

In July 2011, Danish banks' uncollateralised deposits and repo deposits from other MFIs[2] made up 53 per cent of their deposits from households and non-financial corporations. This share has declined from 81 per cent in August 2008, just before the collapse of Lehman Brothers.[3] After the expiry of Bank Rescue Package 1 at end-September 2010 and the subsequent winding-up of Amagerbanken in February 2011, interest rates

1 See ECB (2010a) for a description of the euro area money market.
2 Not from central banks and own foreign subsidiaries and branches, however.
3 See Jensen, Jørgensen, Kramp and Risbjerg (2011) for an analysis of the banks' funding in the money market during the financial crisis.

SELECTED MONEY-MARKET INTEREST RATES AND MONETARY-POLICY INTEREST RATES

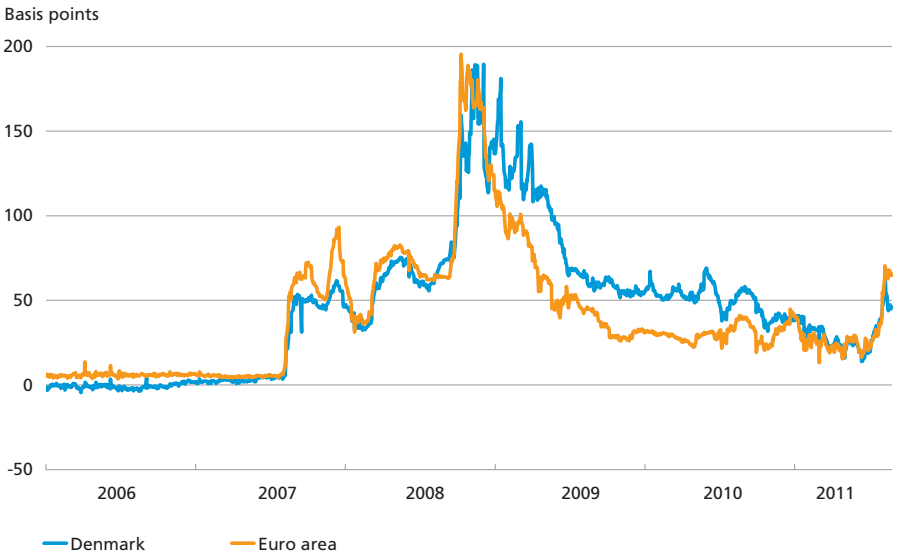
Chart 6



Note: The T/N rate is a 5-day moving average. Cibor, the repo rate and the Cita rate are 3-month interest rates. The most recent observations are from 12 September 2011.
Source: Reuters EcoWin and Danmarks Nationalbank.

SPREAD BETWEEN UNCOLLATERALISED AND COLLATERALISED 3-MONTH INTEREST RATES IN DENMARK AND THE EURO AREA

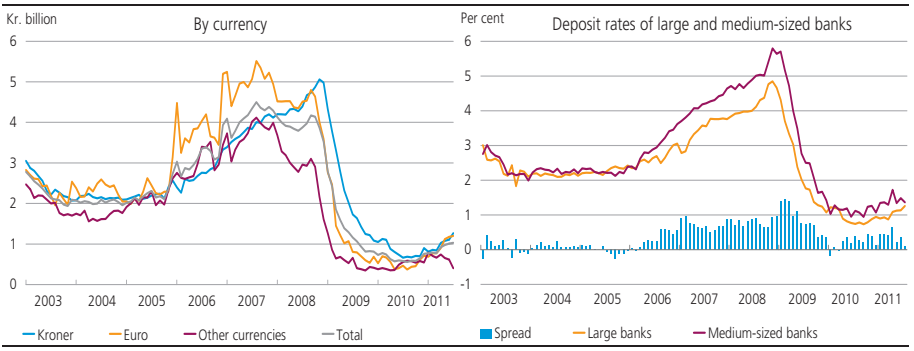
Chart 7



Note: The uncollateralised interest rates for Denmark and the euro area are Cibor and Euribor, respectively. The collateralised interest rates are Cita and Eonia swaps. The most recent observations are from 12 September 2011.
Source: Bloomberg.

DANISH BANKS' RATES OF INTEREST ON DEPOSITS FROM MFIs BROKEN DOWN BY CURRENCY AND LARGE AND MEDIUM-SIZED BANKS' RATES OF INTEREST ON DEPOSITS IN KRONER FROM MFIs

Chart 8



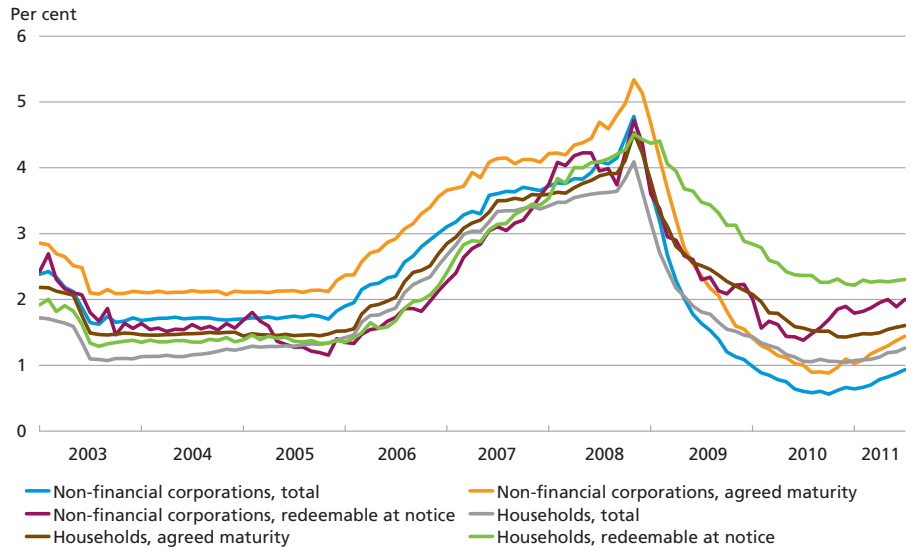
Note: Excluding deposits from central banks and the banks' foreign subsidiaries and branches. Data collected in connection with Danmarks Nationalbank's interest-rate statistics. The left-hand chart includes deposits from MFIs in all countries, while the right-hand chart includes deposits in kroner from Danish counterparties. Rates of interest on all outstanding deposits are included, so the individual months to a large extent reflect interest rates on previously accepted deposits. Danmarks Nationalbank collects interest-rate statistics from banks corresponding to the Danish Financial Supervisory Authority's groups 1 and 2 (large and medium-sized) only. The most recent observations are from July 2011.

Source: Danmarks Nationalbank.

on Danish banks' outstanding deposits from other MFIs have risen only slightly, cf. Chart 8, left. The interest rates paid by medium-sized banks on outstanding deposits from other MFIs have not risen relative to those of large banks, cf. Chart 8, right. Part of the explanation to the subdued

BANK INTEREST RATES ON DEPOSITS FROM HOUSEHOLDS AND NON-FINANCIAL CORPORATIONS

Chart 9



Note: Monthly averages. Rates of interest on all outstanding deposits. Data from Danmarks Nationalbank's interest-rate statistics. The most recent observations are from July 2011.

Source: Danmarks Nationalbank.

development in interest rates could be that the statistics comprise the total volume of outstanding loans, i.e. both existing and new loans. No separate statistics are compiled for interest rates on new deposits from MFIs.

Outside the money market, the rates of interest on the banks' outstanding deposits from households and the corporate sector have also been rising only slightly, cf. Chart 9. However, the rates of interest are sector averages and may differ considerably from bank to bank. Interest rates have risen a little more for deposits with an agreed maturity and deposits redeemable at notice from the corporate sector than for overnight deposits. In general, interest rates have developed in line with Danmarks Nationalbank's monetary-policy interest rates.

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Current Trends in the Faroese Economy

Morten Hedegaard Rasmussen, Economics

INTRODUCTION AND SUMMARY

The Faroese economy is picking up steam again after the recession in connection with the international financial crisis, which had a milder impact on the Faroe Islands than on most other western economies.

Growth in the nominal gross domestic product, GDP, was 3.3 per cent in 2010. The national accounts for the Faroe Islands are published with a lag and in current prices only. Consequently, the assessment of the current activity in the Faroese economy must be based on other indicators such as wage and employment statistics. The present growth is attributable to fisheries, with increasing catch volumes and prices in the sector overall. The other sectors have not yet begun to recover. Two of the largest Faroese firms, Eik Banki and Faroe Seafood, failed in 2010, resulting in two severe, negative shocks to the Faroese economy and underscoring the fragility of the upswing.

Private consumption remains low, which should be seen in the light of the uncertainty surrounding the economic situation. Unemployment rose up to and including February 2011, but has declined since then. Oil prices have been rising, undermining both profits in the fisheries and business sectors and consumer purchasing power. In addition, the default of Eik Banki reduced lending capacity for a while, which may have had negative real economic consequences.

The trade balance showed a surplus in 2010 because fish exports increased and the value of imports rose only moderately, virtually only driven by the higher oil prices.

The economic upswing has had a positive effect on public finances, but nevertheless further consolidation measures will be required in order to meet the target of balanced finances by 2015. Until now such measures have only to a very limited extent been defined and implemented. This has led the financial markets to doubt whether the Løgting (Faroese parliament) will achieve its target of rebalancing the government budget by 2015. For this reason, among others, the credit rating agency Moody's in April 2011 downgraded the issuer rating of the Faroe Islands from Aa2 to Aa3, and the outlook was changed from stable to negative.

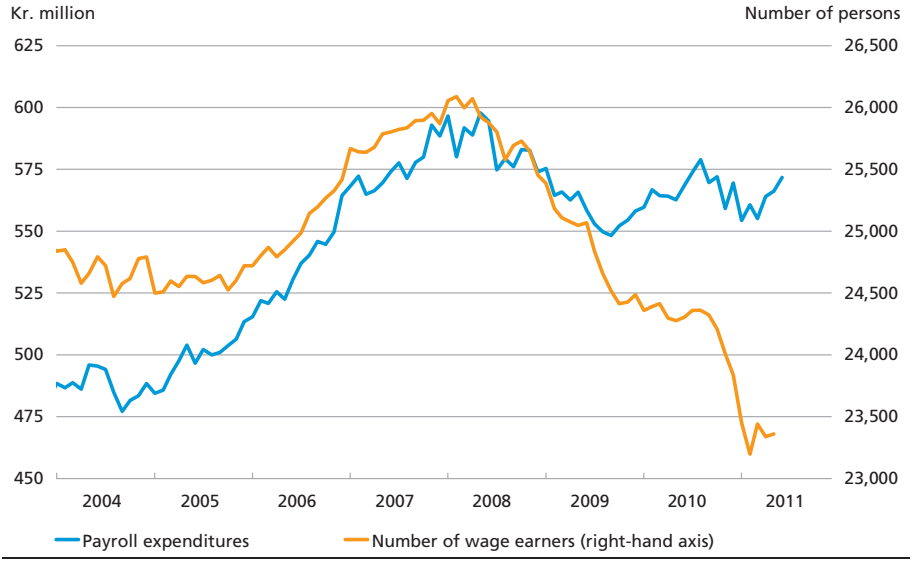
ECONOMIC ACTIVITY

The Faroese economy is slowly emerging from the recession. The provisional national accounts show that nominal GDP grew by 3.3 per cent in 2010, following contractions of 0.8 per cent in 2008 and 1.7 per cent in 2009. Hence, the most recent economic downturn was by no means as strong as the one that hit the Faroe Islands in the 1990s.

Wage expenditures rose during 2010 and were nominally 1.5 per cent higher for the full year than in 2009, cf. Chart 1. The first few months of 2011 show a decline to the level seen in the same period of 2010. This should be viewed against the backdrop of the failure of the Faroe Islands' largest firm, Faroe Seafood, in December 2010, leaving some 800 employees without jobs. This amplified the negative trend in employment, cf. Chart 1. Total employment was almost 2.5 per cent lower in 2010 than in 2009. Parts of Faroe Seafood have subsequently been sold, but only a small part of its production has been resumed.

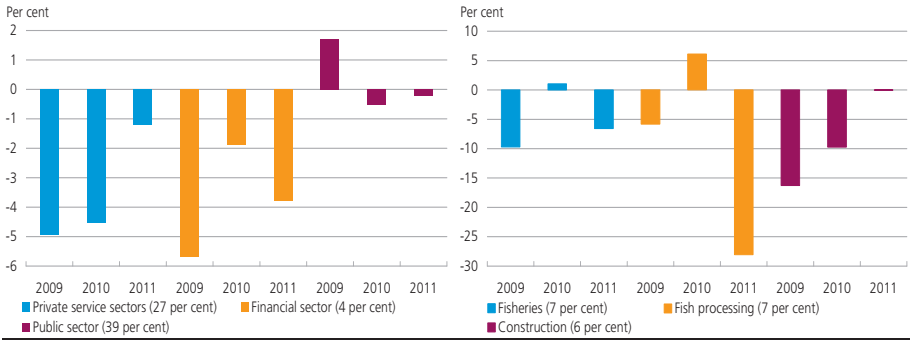
The decrease in employment in 2010 can primarily be ascribed to developments in the private service sector; these developments have continued into 2011, cf. Chart 2. The downturn is most pronounced in trade and repairs and in business services. The number of employees in the financial sector has also fallen. Moreover, the rising trend in public sector employment has ceased and made way for a small decline in 2010.

WAGE EXPENDITURES AND EMPLOYMENT — Chart 1



Note: Seasonally adjusted monthly data. 3-month moving averages for wage expenditures. The most recent observation is May 2011 for the number of wage earners and July for wage expenditures.
Source: Hagstova Føroya.

CHANGES IN WAGED EMPLOYMENT IN SELECTED SECTORS Chart 2



Note: Data for 2011 shows the change in the period January-May 2011 in relation to the same period of 2010. Figures in brackets indicate the sector's share of total waged employment in 2010.
Source: Hagstova Føroya.

In the first few months of 2011 growth in public sector employment remained slightly negative.

Employment in the fisheries sector stabilised last year. This should be seen in the context of a small increase in catch volumes and fish prices in general, which also generated more jobs in the fish processing sector. The strong fall in employment in the fish processing sector in 2011 was triggered by the failure of Faroe Seafood, which also had a negative impact on fisheries, as the firm owned trawlers too.

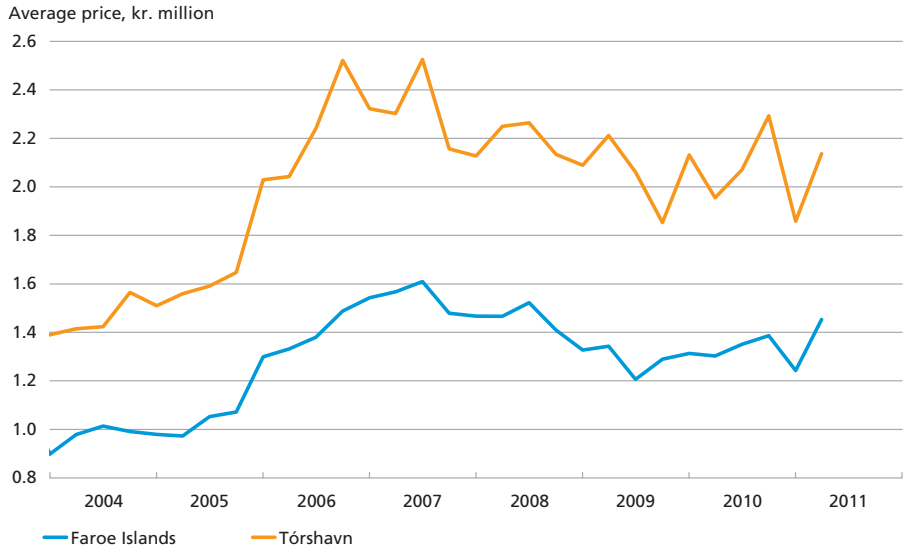
In employment terms, construction continues its downward trend. The number of jobs in construction has shrunk by around one fourth since the peak in 2008, but based on the first five months of 2011 the curve seems to have bottomed out. The number of employees in construction is now back at the level seen in 2003, before the boom with surging housing prices set in in the Faroe Islands.

Housing prices fell in the 1st quarter of 2011, following a period of marginally increasing prices in 2010, cf. Chart 3. Prices are now at the same level as at the beginning of 2006, i.e. just after the introduction of new loan types with longer maturities and deferred amortisation had led to a pronounced upward adjustment of prices.

Falling employment resulted in rising unemployment until the first few months of 2011, after which unemployment began to fall. Seasonally adjusted unemployment was 6.6 per cent of the labour force in July, corresponding to the level in 1998. The hike around the turn of the year 2010/11 reflects the failure of Faroe Seafood.

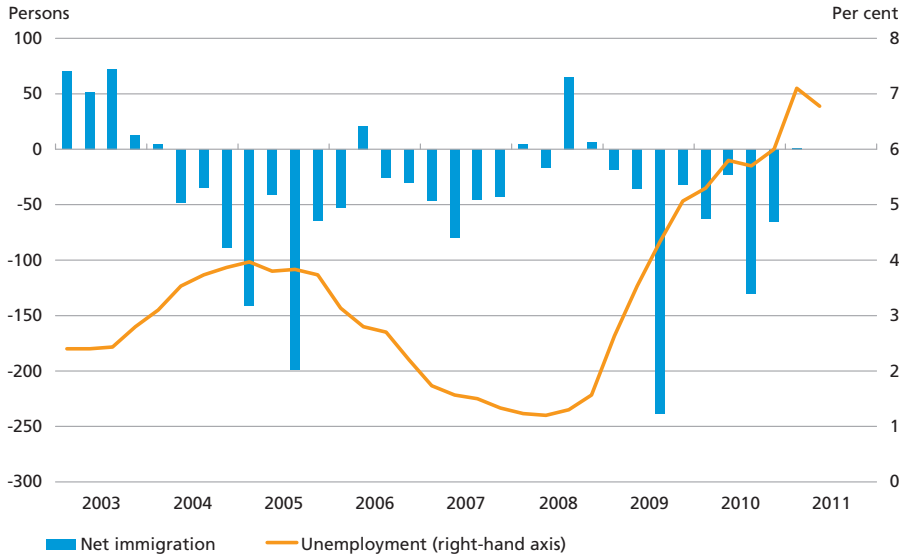
In step with the rise in unemployment, there has been a net emigration trend since the beginning of 2009, although it has been relatively subdued, cf. Chart 4. The reason may be that it is difficult to find jobs in neighbouring countries, where the labour markets are also weak.

HOUSING PRICES — Chart 3



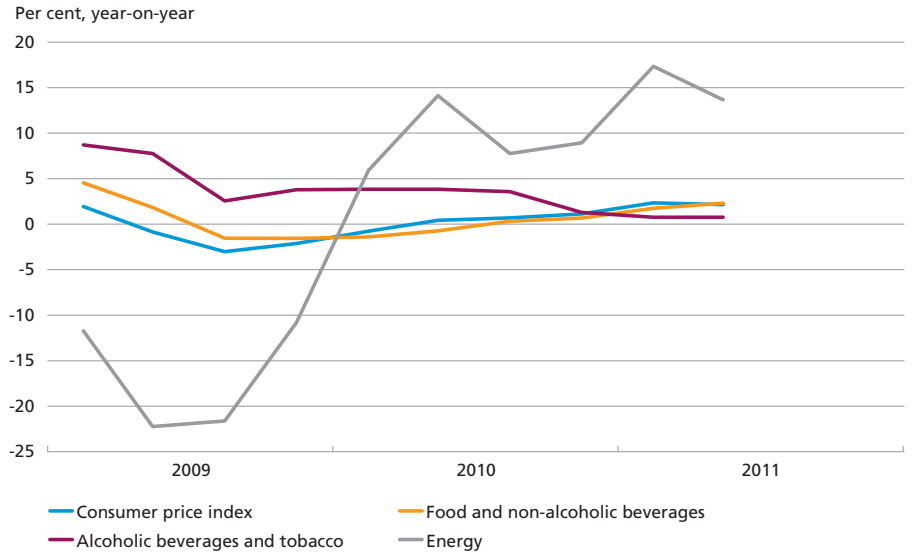
Note: Quarterly averages, most recently from the 2nd quarter of 2011. Housing prices for the Faroe Islands overall are calculated by weighing average prices for houses with a floorspace of 250-1,000 m^2 in small settlements, large settlements and Tórshavn, respectively. The relative number of transactions in the areas in the period 2000-10 has been applied.
Source: Eik Banki Føroya.

NET IMMIGRATION AND UNEMPLOYMENT — Chart 4



Note: Seasonally adjusted quarterly data. The most recent observation is the 1st quarter of 2011 for net immigration and the 2nd quarter of 2011 for unemployment.
Source: Hagstova Føroya.

CONSUMER PRICE INDEX BROKEN DOWN BY SUBCOMPONENTS Chart 5



Note: The most recent observation is the 2nd quarter of 2011.
Source: Hagstova Føroya.

Moreover, Faroese unemployment benefits were increased from 2010, and entitlement rules were eased.

The considerable net emigration in the 3rd quarters of both 2009 and 2010 is attributable to Faroese students who went abroad to take an education. This type of emigration was less pronounced under the preceding boom, and not since 2005 has there been a similar trend.

Inflation was 2.2 per cent in the 2nd quarter, measured by the consumer price index, and has been rising since the trough in the 3rd quarter of 2009, cf. Chart 5. The price increases primarily reflect higher energy prices, which have begun to pass through to other subcomponents of the index.

Fisheries

Fisheries account for around one seventh of total gross value added in the Faroe Islands. Fisheries in waters close to the Faroe Islands mainly consist of demersal fishing for cod, haddock and saithe. Cod catches have risen slightly from a very low level, and haddock has stabilised, but at a low level, while catches of saithe have declined sharply over the last 18 months. The low catch volumes of cod and haddock are presumably caused by overfishing. On the other hand, export prices for these species have picked up. The price of saithe has also risen and is now at a high level due to a lower global supply.

In the spring, the Faroe Islands set their own mackerel quota for 2011, following fruitless negotiations between the Faroe Islands, the EU, Ice-

land and Norway. The Løgting set the Faroese mackerel quota at 150,000 tonnes, corresponding to 15 per cent of the sum of the individually set quotas in these countries. In the assessment of the International Council for Exploration of the Seas, ICES, the individually set quotas will lead to substantial overfishing of mackerel. The Faroe Islands granted Russia and Iceland 27,200 tonnes of their mackerel quota in return for Faroese fishing rights in their seas, and 5,000 tonnes were allocated to scientific research. The remaining 117,800 tonnes were granted to Faroese vessels; this is about twice the 2010 volume. At a price of kr. 5 per kilo, the value of the quota for vessels under Faroese flag is just under kr. 600 million.

Due to the failure to reach agreement on mackerel quotas in 2011, international agreements have not been concluded for other species either. Consequently, Faroese vessels may not fish in the Norwegian part of the Barents Sea, and nor may they fish for herring in Norwegian and EU waters. This has a negative impact on earnings in the Faroese fisheries sector, but the rise in earnings as a result of the higher mackerel quota is clearly the dominant factor.

39,000 tonnes of farmed fish, primarily salmon, were slaughtered in 2010, almost 10,000 tonnes less than in 2009. This decline is considered to be temporary, and production in 2011 is expected to be around 60,000 tonnes, which is close to the capacity limit. The lower volumes last year were more than offset by higher prices. The price of salmon has been positively impacted because the considerable Chilean production plummeted due to epidemics of disease in 2008 and 2009. As Chilean salmon production begins to recover, this will dampen prices.

Faroese fisheries are suffering from a structural problem, i.e. excess capacity. This reduces earnings and investment opportunities in the fisheries sector. Due to the excess capacity the average catch is lower than it would otherwise have been, and catches fluctuate more over time. These fluctuations have a negative derived effect on the fish processing sector, as it is difficult to adjust output capacity to current catch volumes. Increased consumer awareness of sustainable fishing also means that fishermen obtain lower prices for their catches if they are not classified as sustainable.

Foreign trade

In 2010 the trade surplus, excluding ships and aircraft, was kr. 311 million, corresponding to 2.5 per cent of GDP.

Exports grew by 13 per cent from 2009 to 2010, cf. Table 1. This should be seen in the context of growth in important parts of the fisheries sector. Fish is the dominant export article, accounting for more than 90

TRADE BALANCE Table 1

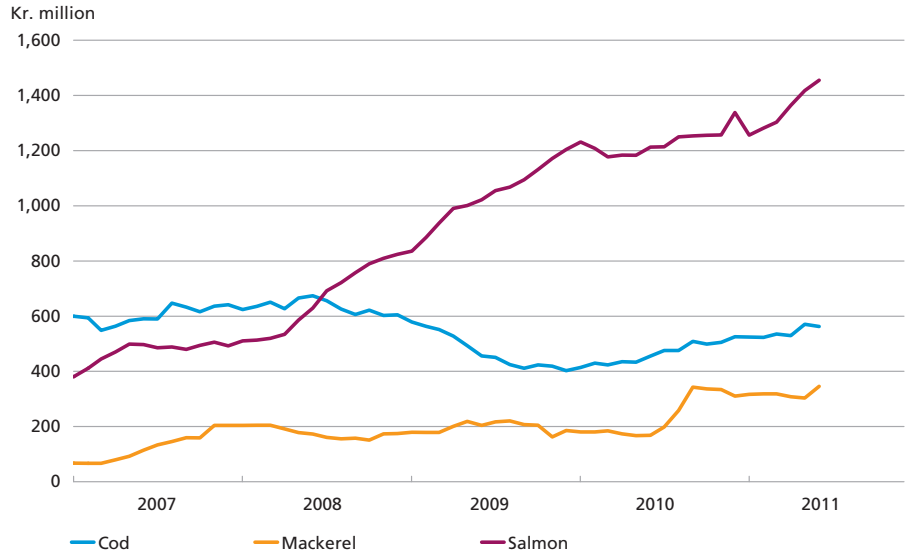
Kr. million	2008	2009	2010
Exports	4,346	4,105	4,639
Exports excluding ships and aircraft	3,741	3,879	4,422
Imports	5,021	4,211	4,365
Imports excluding ships and aircraft	4,930	3,717	4,111
Trade balance	-675	-107	275
Trade balance excluding ships and aircraft	-1,189	162	311

Source: Hagstova Føroya.

per cent of Faroese exports in 2010. The rise in exports is attributable e.g. to continued growth in fish farming. Since 2008, farmed salmon has replaced cod as the most important source of export income, cf. Chart 6, as cod catches have been very low on account of overfishing. However, cod volumes have increased slightly since they bottomed out in 2009 and along with rising prices this has helped to increase exports. Mackerel also contributed to higher exports. The reason is that the Faroe Islands independently set its own mackerel quota for 2010 at 85,000 tonnes, which is approximately three times the normal quota.

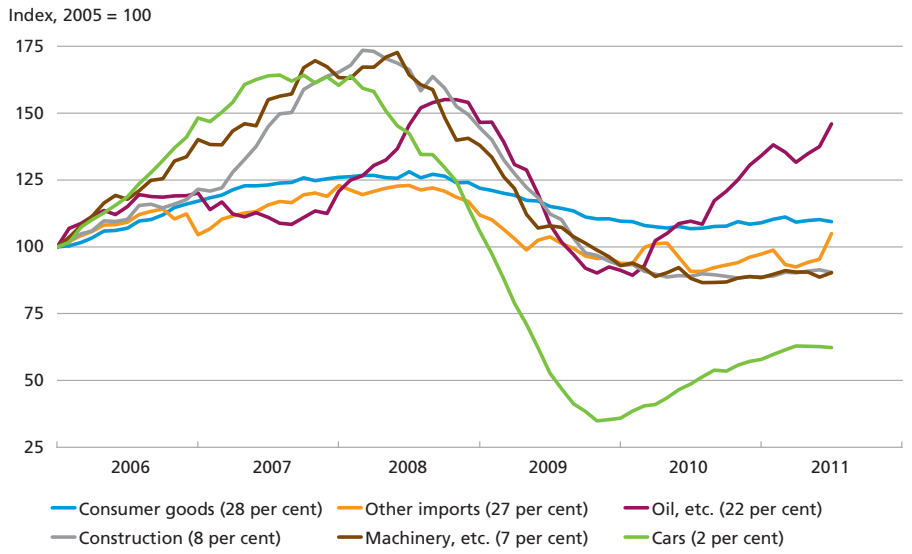
Imports, excluding ships and aircraft, rose by just under 4 per cent from 2009 to 2010, and the upward trend continued in the 1st half of 2011. Growth in imports is primarily attributable to higher oil prices. Oil accounts for a large share of Faroese imports as it is an important source

EXPORT VALUES OF COD, MACKEREL AND SALMON Chart 6



Note: Sum of last 12 months. The most recent observations are June 2010-June 2011.
Source: Hagstova Føroya.

IMPORT VALUE BROKEN DOWN BY SUBCOMPONENTS Chart 7



Note: Sum of last 12 months converted into indices. The most recent observations are June 2010-June 2011. "Other imports" are total imports excluding construction materials, consumer goods, energy, cars and ships. Figures in brackets indicate percentages of total imports in 2010.
Source: Hagstova Føroya.

of heating, and the fishing fleet is energy intensive. The import value of cars has also risen since the trough in the 2nd half of 2009, although the level remains low, cf. Chart 7. The development in other imported goods has been more or less flat since the end of 2009.

The balance of payments for 2010 has not yet been compiled, but is expected to reflect the improved trade balance. In 2009, the Faroe Islands posted a deficit of kr. 145 million, corresponding to just over 1 per cent of GDP.

The financial sector

There is a big difference in how the Faroese banks have navigated through the crisis. BankNordik has expanded strongly over the last couple of years and has taken over more than 120,000 customers in Denmark and Greenland through acquisitions in 2010 and 2011. Furthermore, the bank has acquired half of Føroya Lívstrygging, the largest pension and life insurance company in the Faroe Islands.

On 30 September 2010, Eik Banki P/F was acquired by the Financial Stability Company. No depositors or other unsecured creditors incurred losses on their claims as the acquisition took place before the expiry of the unlimited government guarantee under Bank Rescue Package 1. Following the failure of the bank, the Financial Stability Company initiated a legal investigation. The investigation points to Eik Banki's "negligent

credit granting, primarily for property projects in Germany and Denmark, but also for Faroese commercial customers, combined with inadequate risk management as the main causes of the bank's (Eik Banki's, ed.) financial collapse".

Under the ownership of the Financial Stability Company, Eik Banki has been restructured, and in early 2011 the Faroese company TF Holding acquired 70 per cent of the shares in Eik Banki Føroya, the Faroese part of Eik Banki.

Lending by Faroese banks to both retail and corporate customers has begun to stabilise in recent months, following a decline of 17 per cent in retail lending and 26 per cent in corporate lending since the peak in 2008. The development in bank lending should be seen in the context of Eik Banki's problems, as well as far too lenient credit policies until the crisis. Furthermore, demand for loans typically fluctuates with economic activity. Part of the decline in bank lending to retail customers is also attributable to a certain degree of refinancing in favour of Danish mortgage credit, which is arranged and guaranteed by the Faroese banks.

The aggregate balance sheet total of the Faroese banks is more than twice the Faroese GDP. If the Faroese banking sector expands strongly in the future, it may reach a size that the Faroese government will be unable to manage in the event of problems within the sector.

Public finances

For the third year running, the public finances showed a deficit in 2010. The central government posted a deficit of kr. 581 million, corresponding to 4.8 per cent of GDP. However, this is kr. 200 million less than budgeted for in the Finance Act for 2010, and kr. 108 million less than in 2009. The improved result is primarily attributable to the economic shift from a downturn to a weak recovery in 2010, which increased the tax base. Due to the weakened public finances, the central government's gross debt had risen to just over kr. 5 billion by end-2010, cf. Table 2.

In 2010 the Løgting decided to rebalance the government budget by 2015. This means that the deficit must be reduced by around kr. 125 million a year until 2015. The economic recovery will contribute, but will not in itself be sufficient. During the upswing that preceded the economic downturn, fiscal policy was lenient, with e.g. tax cuts, increasing public consumption and a rising level of public investment. Hence, the financial point of departure was weak when the economic downturn hit, and the government deficit grew larger than it would otherwise have done. Moreover, no reserves were built up during the upswing as a buffer against bad times.

GOVERNMENT FINANCES Table 2

Kr. million	2007	2008	2009	2010	Estimate for 2011
Taxes and duties, etc.	3,558	3,502	3,256	3,508	3,693
Block grants	632	635	636	637	616
Total income	4,190	4,137	3,892	4,145	4,309
Operating costs	3,767	4,251	4,366	4,500	4,529
Capital investments	292	232	184	169	235
Net interest costs	-14	-16	31	57	40
Total expenses	4,045	4,467	4,581	4,726	4,804
Balance	145	-330	-689	-581	-495
Gross government debt, year-end	3,379	3,590	3,903	5,034	

Note: Income and balance are exclusive of extraordinary income of kr. 1,212 million and kr. 87 million from the respective sales of two thirds of the shares in Føroya Banki and one third of the shares in Atlantic Airways in 2007.

Source: Fíggjarmálaráðið (Faroese Ministry of Finance) and Landsbanki Føroya.

In order to balance the finances by 2015, the Løgting has introduced measures such as an extra 2 per cent tax on incomes exceeding kr. 400,000 and a gradual reduction of subsidies for interest costs on housing and student loans.

Some of the mackerel quota is sold at auctions, and a resource tax has been introduced on part of the mackerel quota. In 2011, the auctions and the resource tax have generated revenue of almost kr. 90 million. Growth in public consumption has been halted at a level of approximately one third of GDP. Negotiations are currently underway about a pension reform which will presumably take effect in 2013. The reform will lead to the development of a fully financed pension system via pension companies based in the Faroese Islands. At the same time state retirement pensions will be reduced.

Further measures are required if balance is to be achieved by 2015, and the large task of defining and implementing such measures is still outstanding. The sooner this is done, the more credible it will be that the target can be met. The credit rating agency Moody's has expressed scepticism as to whether the public finances will be balanced by 2015. Along with the issue of the long-term sustainability of the fisheries sector this has led Moody's to downgrade the issuer rating of the Faroe Islands.

Local government accounts for around one fifth of public finances; overall this sector has not posted a surplus since 2005, although the Faroese economy was strong in the years leading up to the crisis in 2008. Preliminary data for 2010 show an aggregate surplus of just

under kr. 30 million, with large differences among municipalities. Overall, local government budgets are expected to balance in 2011.

Local government spending has contributed to amplifying cyclical fluctuations. For example, large construction works were initiated during the upswing when tax revenue increased. This added to the pressure on e.g. the building and construction sector, which already suffered from a shortage of labour. When the economic crisis hit the Faroe Islands, local government tax revenue fell, and the response was to reduce investment. Under the present rules, the central government cannot do anything to prevent this behaviour, which is detrimental to the Faroese economy overall. Only if the net debt of a local authority exceeds one year's tax revenue at a tax rate of 23 per cent, can the central government step in to adjust the budget.

The Faroese unemployment fund, on the other hand, helps to stabilise economic fluctuations. This effect has been strengthened by major changes in unemployment benefits that took effect on 1 January 2010. The rate of unemployment benefits has been increased, and the entitlement period has been extended. The assets of the unemployment fund currently total kr. 550 million, and the aim is for the fund to be self-financing over time. Under the present conditions in the labour market, annual disbursements amount to some kr. 250 million, while payments into the fund total approximately kr. 150 million. In other words, the assets are being reduced.

Economic prospects

Despite negative shocks in the form of rising oil prices and the failures of Eik Banki and Faroe Seafood, the recovery in the Faroese economy looks set to continue. Fish prices and catch volumes have begun to rise, fish farms are prospering and the trade balance showed a surplus in 2010. However, the economic prospects hinge on whether the favourable situation for the fisheries sector will continue.

Public finances will improve as a result of the economic upswing, but further consolidation is required. The sooner such measures are defined and implemented, the more credible they will be. This is of significance to the credit rating of the Faroe Islands and will also reduce the general uncertainty in the population that may put a damper on private consumption.

The Faroese economy is highly dependent on fisheries. Fish farming has to some extent made up for the low catch volumes in the actual fisheries sector in recent years. All the same, it is necessary to ensure sustainable fishing. At present the fishing fleet has excess capacity, and the challenge is to bring it down to a level that ensures higher profitability as well as sustainability.

Payment Habits in Denmark

Johan Gustav Kaas Jacobsen and Søren Truels Nielsen, Payment Systems

INTRODUCTION AND SUMMARY

The Dankort, the national debit card, is just as popular as cash for retail transactions in Denmark. In this respect, the Danes resemble the Swedes and Norwegians, who also make extensive use of payment cards, but differ from consumers in most other European countries, where cash remains the most popular payment method.[1]

This article reviews the findings of a survey of payment habits in Denmark, based on responses from just under 1,300 consumers aged between 15 and 79. The survey was conducted by Statistics Denmark on behalf of Danmarks Nationalbank in the autumn of 2010. For more information on the survey, see Jacobsen and Nielsen (2011).

The survey findings may be used e.g. to assess the consequences of statutory changes in the payments area. For instance, the Danish rules on card fees have recently been changed, entailing that, in future, retailers may charge consumers a fee for credit card transactions. Retailers may not charge a fee for debit card transactions such as Dankort transactions.

According to a statistical analysis presented in the article, this change will lead to an increase in Dankort transactions rather than in cash transactions. This is an important conclusion as the social costs of cash transactions, especially large ones, are higher than for card transactions.

PREVALENCE OF PAYMENT INSTRUMENTS

For retail transactions, the Danes typically have a choice between cash, various types of payments cards and cheques, cf. Box 1.

The Dankort is by far the most popular payment instrument: about eight in ten Danes aged between 15 and 79 are Dankort holders, cf. Chart 1. The percentage of Danes holding a Dankort is highest for consumers over 24 and rises with income.

[1] See Nyberg (2010), Gresvik and Haare (2008), Jonker (2005) and Mooslecher et al. (2006).

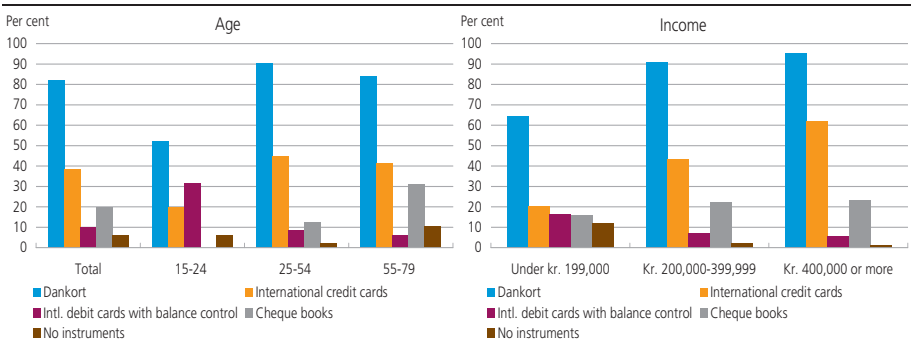
PAYMENT INSTRUMENTS IN DENMARK Box 1

- The *Dankort* is the national debit card in Denmark. With debit cards, the money is withdrawn from the payer's account immediately after the transaction. In most cases, the Dankort is a Visa/Dankort, entailing that it works as a Dankort for national transactions and a Visa card for transactions abroad.
- *International credit cards*, e.g. MasterCard, American Express and Diners Club, are payment cards for the purchase of goods and services in Denmark and abroad, subject to the line of credit granted to the cardholder. The credit extended is repaid, in full or in part, at the end of a specified period, typically one month.
- *International debit cards with real-time balance control*, e.g. Visa Electron and MasterCard Debit, differ from the Dankort by having real-time balance control to ensure that the payer cannot overdraw his account. Moreover, like international credit cards, these cards may be used for transactions abroad.
- There are also a number of *other payment cards*, e.g. the payment card of the Consumption Association estbl. 1886. These cards work as credit cards – but only for transactions at designated points of sale. The prevalence and use of these cards are not described in this article.
- *Cheques* are written orders by which the issuer of the cheque by his signature instructs his bank to allow another person to withdraw the value of the cheque from his account.

International credit cards are also most popular in the highest income brackets. One reason could be that consumers in high income brackets tend to travel more frequently than others, both for business and for pleasure, and thus have a greater need to make transactions abroad. Moreover, they can benefit from the higher daily withdrawal limit on credit cards relative to other types of cards. Also, the credit rating of consumers in lower income brackets sometimes means that they will not be offered payment cards with credit or overdraft facilities.

International debit cards with real-time balance control are most popular among young people aged between 15 and 24. The primary

PREVALENCE OF PAYMENT INSTRUMENTS Chart 1



Source: Danmarks Nationalbank.

PERCENTAGE OF DANISH CONSUMERS WITH ACCESS TO SEVERAL PAYMENT INSTRUMENTS

Table 1

Who also have:	Cheque book	Dankort	Intl. credit card	Intl. debit card
Consumers with cheque books	100	89	41	4
Consumers with Dankort	22	100	42	4
Consumers with international credit card	21	88	100	7
Consumers with international debit cards	9	33	27	100

Note: The rows show the percentage of individuals with access to the payment instrument in question, as well as the payment instrument in the corresponding column.
Source: Danmarks Nationalbank.

reason is that young people under the age of 18 are usually not eligible for a Dankort and that people who have just turned 18 may have held on to the card rather than applying for another type of payment card. International debit cards are also well-suited for lower-income consumers, who may, as already mentioned, have difficulty being approved for a payment card with an overdraft facility. Accordingly, these cards are more widespread among consumers in low income brackets.

Finally, retailers usually accept cheques for retail purchases. Although the number of cheque transactions is relatively small today, cf. below, about one fifth of the Danish population aged between 15 and 79 still has a cheque book, cf. Chart 1. Cheque books are most popular among consumers over the age of 55, while virtually no-one under 25 has a cheque book.

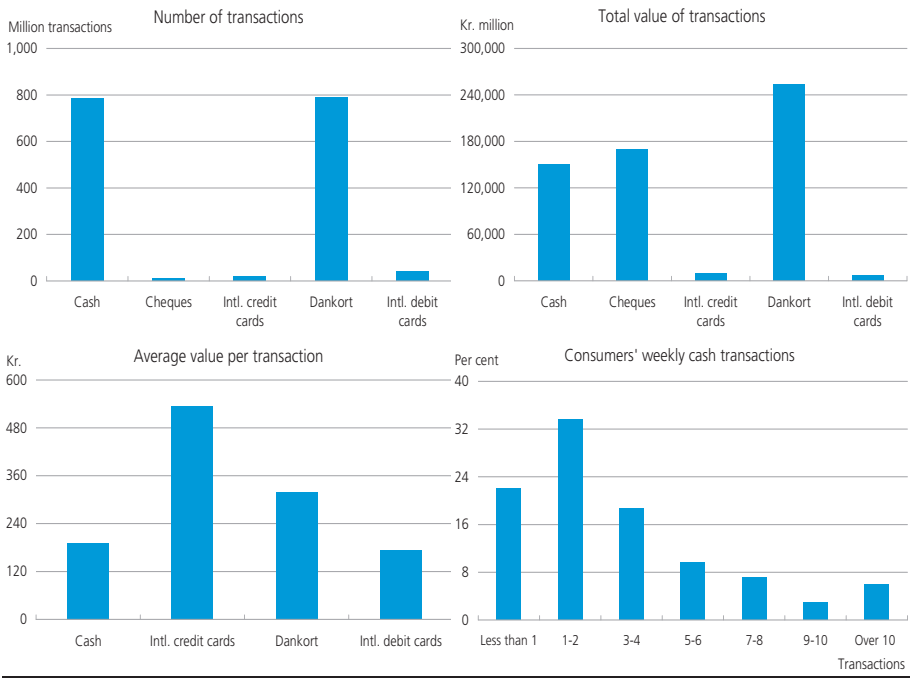
Many Danes have access to several other payment instruments in addition to cash, cf. Table 1. For instance, 88 per cent of the Danes holding an international credit card are also Dankort holders, while this is only the case for three in ten Danes holding a debit card with real-time balance control. Credit cards are thus a more frequent alternative to the Dankort than international debit cards.

About 6 per cent of all Danes aged between 15 and 79, or approximately 260,000 people, have neither a payment card nor a cheque book and hence no alternative to cash.

VOLUME OF TRANSACTIONS

A total of 790 million Dankort transactions were made in 2009, at a total value of about kr. 250 billion, cf. Chart 2. By comparison, retail sales amounted to kr. 269 billion in 2009. The reason for the relatively high value of Dankort transactions is that some of these transactions are not included in retail sales, e.g. payments for car purchases and restaurant and hotel transactions.

TRANSACTIONS CARRIED OUT USING DIFFERENT PAYMENT METHODS IN 2009 Chart 2



Source: Danmarks Nationalbank and the Danish Bankers Association.

This means that the Dankort is the most widely used payment method in Danish retail outlets in terms of value, while the number of Dankort transactions is in line with the number of cash transactions, cf. below. The volume of transactions using international cards is significantly lower, as the value of these transactions in 2009 totalled kr. 16 billion.

In general, international credit cards are used for large-value transactions, presumably because these cards have a higher daily withdrawal limit than other payment instruments. Conversely, the value of transactions using international debit cards is relatively low compared with other payment methods, reflecting that these cards are most popular among lower-income consumers, i.e. typically consumers with lower consumption and, accordingly, smaller transaction values.

The use of cheques differs from payment cards by comprising a small number of large-value transactions. In 2009, cheque transactions accounted for less than 1 per cent of the total number of transactions, but at an average amount of about kr. 17,700 per cheque, the total value of cheque transactions was approximately kr. 170 billion. The explanation is that cheques are used primarily for large-value transactions to and from firms and public authorities.

Cash remains a popular alternative to payment cards. In 2009, the number of cash transactions in retail outlets in Denmark is estimated to have been in line with the number of Dankort transactions. However, the total value of that year's cash transactions, an estimated kr. 150 billion, is lower than that of Dankort transactions.

Cash thus remains a popular payment method among the Danes, although most Danes do not use cash on a daily basis, cf. Chart 2. In light of the widespread use of payment cards and the acceptance of payment cards by most retailers, the volume of cash transactions must reflect a deliberate choice by Danish consumers.

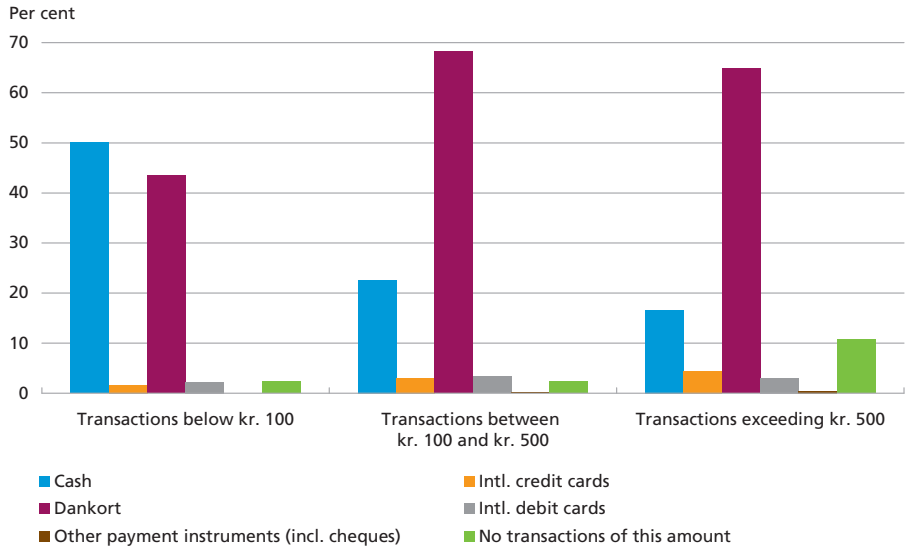
PREFERRED PAYMENT METHODS OF DANISH CONSUMERS

The survey of payments habits in Denmark also asked respondents about their preferred payment method for transactions of various amounts.

For small amounts, i.e. purchases below kr. 100, almost half of the respondents replied that they preferred cash transactions, cf. Chart 3. For transactions exceeding kr. 100, on the other hand, the Dankort is by far the most popular payment method.

Few respondents replied that they preferred to pay by international payments cards, either credit or debit cards, irrespective of the amount. Chart 3 includes all respondents in the survey, but the percentage of respondents preferring international cards does not increase considerably

PREFERRED PAYMENT METHODS OF DANISH CONSUMERS — Chart 3



Source: Danmarks Nationalbank.

if only consumers holding both a Dankort and an international payment card are included, cf. Jacobsen and Nielsen (2011).

Using this data, we have conducted an analysis to calculate the probability of consumers preferring to use either cash, the Dankort or an international credit card for transactions, based on a number of individual characteristics. Only consumers with access to the various payment instruments are included in the calculations. The analysis and its results are described in Box 2.

The analysis shows that men are more likely than women to prefer cash transactions. Moreover, cash is often the preferred payment method among elderly consumers and consumers in low income brackets, while the Dankort is often preferred by young and middle-

ANALYSIS OF DANISH CONSUMERS' PREFERRED PAYMENT METHODS Box 2

Based on data from the survey of payment habits in Denmark, we have attempted to identify how the consumers' choice of payment method is affected by personal characteristics such as gender, age, income and education. The model applied is a logistic regression, calculating the probability of payment in cash, by Dankort and international credit cards on the basis of these characteristics.

Only data from consumers who actually have access to the relevant payment instruments has been used. Hence, the Dankort and credit card models comprise only consumers who have indicated that they hold the card in question. Consumers under 18 years of age have been excluded, as they usually have a choice between cash and international debit cards only.

Personal characteristics that may with statistical certainty be expected to increase the probability of a consumer preferring either cash, the Dankort or international credit cards are specified below. For example, it is seen that men are more likely than women to prefer paying in cash, while people below 35 are more likely to pay by Dankort than older people. Moreover, on average, more people with higher education tend to prefer paying by Dankort than e.g. unskilled workers.

Cash:	**Dankort:**	**International credit cards**
• Men	• No significant gender difference	• Women
• People over 45	• People under 35	• No significant age difference
• People with lower secondary school education only	• People with long or medium education	• No significant educational difference
• People with an income below kr. 200,000.	• People with an income exceeding kr. 200,000.	• People with an income below kr. 400,000.

As stated above, the model includes only people with access to the various payment instruments. When, say, women are expected to prefer credit card transactions to a greater extent than men, this applies only when both parties have a credit card. This way, adjustment is made for the greater popularity of credit cards among men. For an in-depth description of the model and its findings, see Jacobsen and Nielsen (2011).

aged consumers and by consumers with higher education and an annual income exceeding kr. 200,000.

Among consumers holding an international credit card, women are more likely than men to prefer using this card.

Our calculations also show that credit card holders with an income of less than kr. 400,000 tend to prefer paying by this card more often than those with a higher income.

PROS AND CONS

The respondents in the survey of payment habits in Denmark were also asked about the pros and cons of various possible retail payment methods.

Pros

Among Dankort holders, 60 per cent of the respondents highlighted convenience as their reason for using the card, which is significantly higher than for other payment methods, cf. Table 2. This presumably reflects a combination of the acceptance of the Dankort by most retailers and the fact that by using the Dankort, consumers do not have to withdraw and carry cash.

REASONS FOR USING VARIOUS PAYMENT METHODS — Table 2

Reasons for using cash:	**Reasons for using the Dankort:**
1. It is convenient (34 per cent)	1. It is convenient (63 per cent)
2. Control of my finances (16 per cent)	2. I had no other option (11 per cent)
3. I had no other option (11 per cent)	3. Control of my finances (6 per cent)
4. To get rid of cash (9 per cent)	4. Instant payment (4 per cent)
Other reasons (29 per cent)	Other reasons (16 per cent)
Reasons for using debit cards with balance control:	**Reasons for using international credit cards:**
1. It is convenient (37 per cent)	1. It is convenient (33 per cent)
2. I had no other option (26 per cent)	2. To use the credit facility (27 per cent)
3. Control of my finances (11 per cent)	3. I had no other option (19 per cent)
4. Instant payment (10 per cent)	4. Control of my finances (13 per cent)
Other reasons (16 per cent)	Other reasons (9 per cent)

Note: Each respondent in the survey has been able to indicate the payment method he or she primarily uses for transactions of three amounts. In addition, the respondents have been asked why they use this method. Consequently, each respondent has provided up to three replies. The percentage distribution of the reasons specified, irrespective of amounts, has been calculated in the table.

Source: Danmarks Nationalbank.

Several of the respondents point out that payment in cash helps them take better control of their finances, cf. Table 2, possibly because the cash in their wallets or purses provides a quick and easy overview of their spending money. Further, the use of cash does not entail the same credit or overdraft facilities as credit cards and the Dankort.

Moreover, about one in ten respondents indicate that sometimes cash is the only option, either because they do not have access to any payment instruments or because the retailers in question only accept cash.

Only one fourth of the respondents preferring to pay by credit card do so for the credit facility. Just under 20 per cent of the respondents indicate that credit cards enable them to pay in situations where they have no alternative payment option. One example could be that some large transactions exceed their daily limit on Dankort transactions. Another that a limited balance in their bank accounts means that the credit card is their only option at the time of payment.

Cons

The drawback experienced by most consumers in relation to cash transactions is that they need to have cash at hand, cf. Table 3. About one fifth of the respondents mention the risk of theft as a drawback. The risk of receiving counterfeit banknotes is considered to be a small prob-

DRAWBACKS OF THE VARIOUS PAYMENT METHODS — Table 3

Drawbacks of cash:	**Drawbacks of the Dankort:**
1. Requires cash at hand (31 per cent)	1. Cannot be used in the event of system failure (19 per cent)
2. Risk of theft/robbery (20 per cent)	2. Risk of "excessive spending" (17 per cent)
3. No payment summary (8 per cent)	3. Risk of misuse (15 per cent)
4. Risk of counterfeit banknotes (5 per cent)	No drawbacks (24 per cent)
No drawbacks (21 per cent)	
Drawbacks of debit cards with balance control:	**Drawbacks of international credit cards:**
1. Not universally accepted (23 per cent)	1. Not universally accepted (18 per cent)
2. Cannot be used in the event of system failure (14 per cent)	2. Risk of "excessive spending" (14 per cent)
3. Risk of misuse (13 per cent)	3. Cannot be used in the event of system failure (13 per cent)
No drawbacks (17 per cent)	No drawbacks (23 per cent)

Note: The table specifies the most frequently cited drawbacks of the payment methods in question.
Source: Danmarks Nationalbank.

lem, which tallies well with the very modest volume of counterfeit banknotes in Denmark.

The risk of system failure is seen by many as a drawback of payment cards – and a greater problem than, say, the risk of misuse of their payment cards. This highlights the importance of high system reliability for payment cards. Today, system failures are very rare, but the survey findings indicate that in case of an increase in the number of system failures, more respondents will consider resorting to alternative payment methods such as cash.

A few other payment card drawbacks are also stressed. As far as international payment cards are concerned, the primary problem is that they are not universally accepted, as the number of retailers accepting these cards is lower than the number accepting the Dankort. Furthermore, several respondents state that the overdraft and credit facilities of the Dankort and credit cards present a risk of excessive spending.

FEES AND SUBSTITUTION BETWEEN PAYMENT CARDS AND CASH

As already mentioned, many consumers often have a choice between cash transactions and one or more types of payment cards. Therefore, it is interesting to identify the extent to which they tend to switch between cash and payment cards, i.e. whether these payment methods are *substitutes*.

If two payment methods are substitutes, changes in the payment terms for one of the methods will typically to lead to a change in the payment pattern. Such changes could include the introduction of a fee for transactions using one of the payment methods. This will normally cause the use of the non-fee payment method to increase.

Experience shows that the Danes respond strongly to the imposition of fees, at least in the short term. This was illustrated when, for a short period in early 2005, retailers were authorised to charge of fee of up to kr. 0.50 for Dankort transactions. In response, the number of Dankort transactions dropped sharply, while ATM cash withdrawals increased.

This behaviour is confirmed by Danmarks Nationalbank's survey of payment habits. Asked about their response to fees, more than half of the respondents replied that they would switch to an alternative payment method. Less than 10 per cent stated that they would use the payment instrument in question regardless of the fee.

Substitution effects

Based on data from the survey of payment habits in Denmark, we have conducted a statistical analysis of the degree of substitution between cash

and the various types of cards. To this end, we have examined how the consumers' use of cash is impacted by holding a Dankort, an international credit card or an international debit card, controlling for demographic factors such as gender, age, income and education. The analysis and its results are described in Box 3.

ANALYSIS OF CONSUMER SUBSTITUTION BETWEEN CASH AND PAYMENT CARDS — Box 3

To examine the willingness of consumers to switch between various payment methods, a quantitative analysis has been conducted on the basis of the responses from the survey of payment habits in Denmark. For more details on the analysis, see Jacobsen and Nielsen (2011). Below, an overall description of its method and results is provided.

The analysis examines the effect on cash transactions of holding a Dankort, an international credit card or an international debit card. The analysis seeks to identify an isolated effect of holding one or more of these types of payment cards, i.e. it is taken into account that the consumers have different characteristics, such as gender, age, education and income, which also impact the use of cash.

The main findings of the analysis are presented in Table 4. Each row shows the effect of holding a specific payment card on the value of cash transactions per week (first column) and the number of cash transactions per week (second column). It is seen that, other things being equal, Dankort holders make 25 per cent fewer cash transactions per week than non-Dankort holders. Moreover, Dankort holders purchase for kr. 282 less using cash than non-Dankort holders.

These findings indicate a significant negative effect of holding a Dankort on the level of cash transactions. If international credit cards and debit cards with real-time balance control are considered, the effect measured is somewhat lower and there is no statistical certainty that a consumer's number or value of cash transactions is impacted by holding one of the international payment cards.

RESULTS OF ANALYSIS OF PAYMENT HABITS — Table 4

Change in cash transactions	Value of cash transactions (per week)	Number of cash transactions (per week)
The consumer holds a:		
Dankort	**kr. - 282**	**- 25 per cent**
International credit card	kr. - 32	- 2 per cent
International debit card	kr. - 53	10 per cent

Note: Significant coefficients in the table are in highlighted in bold.
Source: Danmarks Nationalbank.

The analysis indicates that cash and the Dankort may, to some extent, be regarded as substitutes, as a statistically significant negative correlation exists between the two payment methods. This is not the case for cash and international payment cards. The data available does not allow a similar analysis of whether the Dankort and credit cards or the Dankort and international debit cards are substitutes.

The conclusion is that Dankort holders make no less than 25 per cent fewer cash transactions than other consumers. Holding an international credit card, on the other hand, has no impact on the number of cash transactions.

These results indicate that the Dankort and cash are substitutes, as access to Dankort transactions reduces the use of cash. Conversely, there is no basis for referring to cash and international credit cards as substitutes, as holders of these cards make the same number of cash transactions as other consumers.

Amended fee rules in Denmark

Danish rules on card fees are being amended. The amendment is undertaken at the request of the European Commission, which has stated that the current rules do not comply with the rules of the single market. Under the new rules, the "split model" will be introduced, authorising retailers to pass on to consumers the bank fees charged for credit card transactions. Retailers are not authorised to pass on the fees for debit card transactions, e.g. Dankort transactions.

A point of criticism levelled against the split model has been that passing on fees to the consumers will induce more consumers to use cash, the social costs of which are higher than for other payment methods, especially for large-value amounts, cf. surveys conducted in Sweden and the Netherlands[1]. Based on our analysis, there is no reason to expect such substitution. It seems more likely that consumers will switch from credit cards to the Dankort.

[1] Bergman et al. (2007) and Brits and Winder (2005).

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Press Releases

7 JULY 2011: INTEREST RATE INCREASE

Effective from 8 July 2011, Danmarks Nationalbank's lending rate is raised by 0.25 percentage point to 1.55 per cent and the rate of interest on certificates of deposit is raised by 0.25 percentage point to 1.20 per cent. The current account rate is raised by 0.25 percentage point to 1.10 per cent and the discount rate is raised by 0.25 percentage point to 1.25 per cent.

The interest rate increase is a consequence of the increase by the European Central Bank of its rate on the main refinancing operations by 0.25 percentage point to 1.50 per cent.

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

Lending rate: 1.55 per cent.
Certificates of deposit: 1.20 per cent.
Current account: 1.10 per cent.
Discount rate: 1.25 per cent.

25. AUGUST 2011: INTEREST RATE REDUCTION

Effective from 26 August 2011, Danmarks Nationalbank's interest rate on certificates of deposit is reduced by 0.10 percentage point to 1.10 per cent and the current account rate is reduced by 0.10 percentage point to 1.00 per cent. The lending rate is maintained at 1.55 per cent as is the discount rate at 1.25 per cent.

The interest rate reduction follows Danmarks Nationalbank's purchase of foreign exchange in the market. The short euro market rates have fallen and the spread to the equivalent Danish rates has tended to strengthen the Danish krone.

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

Lending rate: 1.55 per cent
Certificates of deposit: 1.10 per cent
Current account: 1.00 per cent
Discount rate: 1.25 per cent.

15 SEPTEMBER 2011: INTEREST RATE REDUCTION

Effective from 16 September 2011, Danmarks Nationalbank's interest rate on certificates of deposit is reduced by 0.10 percentage point to 1.00 per cent and the current account rate is reduced by 0.10 percentage point to 0.90 per cent. The lending rate is maintained at 1.55 per cent as is the discount rate at 1.25 per cent.

The interest rate reduction follows Danmarks Nationalbank's purchase of foreign exchange in the market. The short euro market rates have fallen and the spread to the equivalent Danish rates has tended to strengthen the Danish krone.

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

Lending rate: 1.55 per cent
Certificates of deposit: 1.00 per cent
Current account: 0.90 per cent
Discount rate: 1.25 per cent

Tables

Symbols and Sources

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

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

The Tables section of this publication is closed on 14 September 2011.

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	Inter-bank interest rate, 3-months uncollateralized	Bond yields: 10-year central-government bond	Bond yields: 30-year mortgage-credit bond	Share-price index OMXC20 (prev.KFX)
	Per cent per annum						Per cent per annum			3.7.89 =100
2006	3.75	3.75	3.50	3.50	3.50	2006	3.81	3.95	5.24	441.48
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
2010 8 Jan	1.15	0.90	0.80	1.00	1.00	Aug 10 ..	0.62	2.16	4.09	396.38
15 Jan	1.05	0.80	0.70	0.75	1.00	Sep 10 ..	0.55	2.35	4.15	416.96
26 Mar	1.05	0.70	0.60	0.75	1.00	Oct 10 ..	0.90	2.61	4.31	424.20
20 May	1.05	0.60	0.50	0.75	1.00	Nov 10 ..	0.80	2.82	4.47	424.77
27 May	1.05	0.50	0.40	0.75	1.00	Dec 10 ..	0.87	2.98	4.53	457.58
15 Oct	1.05	0.60	0.50	0.75	1.00	Jan 11 ..	0.84	3.15	4.65	462.11
29 Oct	1.05	0.70	0.60	0.75	1.00	Feb 11 ..	0.82	3.17	4.71	473.64
						Mar 11 ..	0.92	3.39	5.23	467.15
2011 8 Apr	1.30	0.95	0.85	1.00	1.25	Apr 11 ..	1.02	3.27	5.19	462.81
8 Jul	1.55	1.20	1.10	1.25	1.50	May 11 ..	1.04	3.03	5.11	456.25
26 Aug	1.55	1.10	1.00	1.25	1.50	Jun 11 ..	1.15	2.98	5.16	431.06
	|	|	|	|	|	Jul 11 ..	1.22	2.80	5.04	420.54
14 Sep	1.55	1.10	1.00	1.25	1.50	Aug 11 ..	1.36	2.35	4.88	359.41

[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-credit institutes' net position with Danmarks Nationalbank			
				Certificates of deposit	Deposits (current account)	Loans	Total net position
	Kr. billion						
2006	171.7	59.8	73.8	163.2	8.8	153.7	18.2
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
Aug 10	429.2	60.9	216.8	95.3	16.0	0.1	111.3
Sep 10	431.3	60.7	218.5	108.2	12.6	9.9	110.9
Oct 10	421.7	61.1	206.3	99.9	16.1	0.1	115.9
Nov 10	419.2	61.1	192.2	111.3	15.3	1.2	125.4
Dec 10	418.6	62.5	177.3	132.5	14.5	9.3	137.8
Jan 11	430.1	60.3	184.0	120.5	14.8	2.4	133.0
Feb 11	446.4	60.7	235.2	66.8	23.9	0.4	90.4
Mar 11	453.9	59.9	242.2	95.0	12.2	7.9	99.4
Apr 11	454.1	61.9	244.9	85.5	12.0	0.9	96.6
May 11	453.4	62.0	245.4	79.4	17.2	0.3	96.4
Jun 11	456.8	62.4	252.2	93.7	13.4	13.9	93.3
Jul 11	456.9	61.8	229.5	101.8	15.3	0.6	116.5
Aug 11	475.7	60.5	265.9	82.9	17.2	0.8	99.3

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

Table 3

	Central-government finance			Net purchase of foreign exchange by Danmarks Nationalbank			Net purchase of bonds by Danmarks Nationalbank	Other factors	The banks' and the mortgage-credit institutes' net position with Danmarks Nationalbank	
	Domestic gross financing requirement	Sales of domestic central-government securities, etc.	Liquidity effect	Interventions to purchase foreign exchange, net	Other	Total			Change in net position	End of period
	Kr. billion									
2006	-14.5	16.2	-30.6	-34.3	4.3	-30.0	-4.9	-1.2	-66.7	18.2
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
Aug 10	-15.6	10.1	-25.7	0.0	0.9	0.9	-0.2	-0.7	-25.6	111.3
Sep 10	7.8	10.7	-2.9	3.4	0.1	3.5	-0.5	-0.6	-0.4	110.9
Oct 10	14.2	4.3	9.9	-7.3	0.1	-7.2	-0.2	2.6	5.0	115.9
Nov 10	24.2	10.3	13.9	-2.2	0.0	-2.2	0.0	-2.2	9.5	125.4
Dec 10	20.9	6.3	14.6	0.2	-0.4	-0.2	-0.5	-1.5	12.4	137.8
Jan 11	8.5	14.9	-6.4	0.0	1.2	1.2	-1.4	1.8	-4.8	133.0
Feb 11	-27.5	9.5	-37.0	0.0	2.2	2.2	0.6	-8.5	-42.6	90.4
Mar 11	1.5	-0.2	1.7	-0.4	-0.7	-1.1	1.0	7.4	9.0	99.4
Apr 11	12.0	15.1	-3.1	0.0	0.7	0.7	0.2	-0.5	-2.7	96.6
May 11	9.1	9.5	-0.3	0.0	-0.7	-0.7	0.5	0.3	-0.3	96.4
Jun 11	10.1	14.2	-4.0	0.0	0.6	0.6	0.9	-0.5	-3.0	93.3
Jul 11	38.2	15.8	22.4	0.0	0.5	0.5	-0.1	0.3	23.2	116.5
Aug 11	-14.8	14.4	-29.2	11.2	0.5	11.7	-1.3	1.7	-17.2	99.3

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							
2006	4,656.2	116.8	2,956.0	51.8	60.3	1,077.0	1,433.4	-223.0
2007	5,446.3	117.5	3,356.1	43.3	63.5	1,219.7	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	5,970.1	135.9	3,647.9	78.2	65.5	1,427.9	1,650.9	-417.6
2010	6,151.8	146.6	3,700.7	41.9	79.5	1,410.1	1,711.8	-378.0
Jul 10	6,398.7	143.7	3,694.1	46.5	80.9	1,443.1	1,721.4	-358.1
Aug 10	6,614.0	138.9	3,716.7	64.5	81.3	1,471.3	1,763.6	-332.5
Sep 10	6,511.8	143.1	3,713.9	66.2	74.3	1,430.8	1,792.8	-337.4
Oct 10	6,347.1	141.5	3,705.3	56.1	77.3	1,446.4	1,765.6	-309.4
Nov 10	6,325.0	142.4	3,702.8	29.9	77.8	1,415.4	1,700.4	-385.2
Dec 10	6,151.8	146.6	3,700.7	41.9	79.5	1,410.1	1,711.8	-378.0
Jan 11	6,091.9	144.2	3,668.2	42.9	81.5	1,400.0	1,702.5	-311.9
Feb 11	6,102.8	142.9	3,648.1	45.9	86.6	1,451.9	1,675.0	-274.0
Mar 11	6,077.2	146.0	3,671.9	46.3	85.1	1,448.4	1,678.0	-267.5
Apr 11	6,053.1	145.5	3,660.1	49.6	83.6	1,463.0	1,683.1	-258.9
May 11	6,054.5	143.6	3,638.3	58.6	79.7	1,465.2	1,712.0	-244.5
Jun 11	5,977.4	147.4	3,649.4	60.0	78.9	1,458.7	1,714.3	-250.0
Jul 11	6,062.9	148.5	3,632.0	57.8	87.1	1,462.8	1,729.9	-254.5
	Change compared with previous year, per cent							
2006	...	8.3	14.4	-31.8	12.8	10.9	8.7	...
2007	...	0.6	13.5	-16.4	5.2	13.3	5.0	...
2008	...	9.8	11.0	-6.2	-10.7	22.0	0.2	...
2009	...	5.3	-2.1	92.4	15.5	-4.0	9.4	...
2010	...	7.9	1.4	-46.4	21.4	-1.2	3.7	...
Jul 10	...	5.9	0.5	-26.8	38.5	-0.1	6.0	...
Aug 10	...	6.5	1.7	-4.1	38.0	3.4	9.1	...
Sep 10	...	9.2	1.2	-8.5	20.6	1.6	7.5	...
Oct 10	...	7.5	1.7	-24.4	22.7	2.3	8.3	...
Nov 10	...	9.1	1.5	-60.0	22.9	1.7	3.4	...
Dec 10	...	7.9	1.4	-46.4	21.4	-1.2	3.7	...
Jan 11	...	7.8	0.2	-46.5	19.9	-2.1	1.1	...
Feb 11	...	8.2	-0.1	-36.4	26.2	2.1	-0.9	...
Mar 11	...	7.9	0.3	-40.0	23.1	2.0	-2.1	...
Apr 11	...	6.9	0.2	-33.8	20.4	2.9	-0.1	...
May 11	...	5.0	-1.1	-11.7	13.4	2.6	-0.4	...
Jun 11	...	4.7	-1.9	10.9	-0.8	1.8	-0.2	...
Jul 11	...	3.4	-1.7	24.4	7.7	1.4	0.5	...

Note: The MFI sector includes Danish monetary financial institutions, i.e. banks and mortgage-credit institutes, 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								
2006	50.7	648.6	699.3	143.0	17.9	860.2	8.0	21.3	889.5
2007	51.9	703.2	755.1	199.7	18.0	972.8	6.2	61.5	1,040.6
2008	50.4	704.8	755.2	286.4	18.4	1,060.0	4.0	57.0	1,121.1
2009	48.5	746.6	795.1	188.0	19.6	1,002.7	10.9	143.0	1,156.7
2010	52.6	749.8	802.4	143.9	18.0	964.3	58.2	241.2	1,264.0
Jul 10	51.5	793.3	844.8	158.1	17.2	1,020.1	31.9	247.1	1,299.3
Aug 10	51.1	789.3	840.4	155.6	17.2	1,013.1	40.6	254.2	1,308.0
Sep 10	51.2	767.4	818.6	133.0	16.6	968.2	43.2	236.4	1,247.9
Oct 10	51.8	774.1	825.9	160.6	17.9	1,004.4	33.8	231.8	1,270.1
Nov 10	52.1	766.1	818.2	149.2	18.2	985.7	38.4	230.3	1,254.5
Dec 10	52.6	749.8	802.4	143.9	18.0	964.3	58.2	241.2	1,264.0
Jan 11	50.7	745.8	796.5	140.2	18.0	954.7	49.9	126.9	1,131.8
Feb 11	51.7	745.5	797.2	141.6	17.9	956.7	49.6	125.9	1,132.5
Mar 11	50.8	729.2	780.0	143.5	16.9	940.5	52.9	154.4	1,147.9
Apr 11	52.7	753.4	806.1	138.1	17.1	961.3	43.7	102.6	1,107.9
May 11	52.3	756.0	808.3	141.7	17.2	967.2	41.4	112.7	1,121.5
Jun 11	52.4	735.0	787.4	141.5	16.9	945.8	50.7	119.1	1,115.8
Jul 11	52.0	749.7	801.7	146.7	16.9	965.3	57.1	136.3	1,159.0
	Change compared with previous year, per cent								
2006	...	...	8.7	...	...	10.8	...	...	11.4
2007	...	...	8.0	...	...	13.1	...	...	17.0
2008	...	...	0.0	...	...	9.0	...	...	7.7
2009	...	...	5.3	...	...	-5.4	...	...	3.2
2010	...	...	0.9	...	...	-3.8	...	...	9.3
Jul 10	...	...	6.8	...	...	-2.8	...	...	6.7
Aug 10	...	...	3.7	...	...	-3.7	...	...	8.7
Sep 10	...	...	4.8	...	...	-4.4	...	...	4.1
Oct 10	...	...	2.3	...	...	-2.6	...	...	5.9
Nov 10	...	...	1.1	...	...	-3.3	...	...	6.2
Dec 10	...	...	0.9	...	...	-3.8	...	...	9.3
Jan 11	...	...	-2.3	...	...	-6.6	...	...	-5.8
Feb 11	...	...	-2.6	...	...	-5.6	...	...	-4.3
Mar 11	...	...	-4.0	...	...	-5.2	...	...	-4.3
Apr 11	...	...	-3.0	...	...	-4.8	...	...	-8.0
May 11	...	...	-3.9	...	...	-5.5	...	...	-8.7
Jun 11	...	...	-4.9	...	...	-4.8	...	...	-8.5
Jul 11	...	...	-5.1	...	...	-5.4	...	...	-10.8

[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							
2006	3,216.1	715.0	1,124.3	475.0	458.0	889.6	1,133.4	1,148.3
2007	3,940.0	924.3	1,333.6	557.4	551.8	1,065.8	1,441.8	1,345.6
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	1,186.0	1,410.2
2010	4,196.6	902.7	1,334.6	570.2	494.7	1,156.3	1,118.3	1,489.7
Jul 10	4,437.4	935.8	1,361.4	563.1	510.8	1,243.5	1,152.5	1,490.6
Aug 10	4,611.5	965.2	1,370.5	563.3	518.5	1,221.8	1,165.3	1,541.5
Sep 10	4,526.8	910.0	1,362.2	570.9	504.6	1,213.5	1,293.1	1,463.6
Oct 10	4,347.9	921.8	1,349.0	563.9	496.3	1,154.1	1,174.2	1,513.3
Nov 10	4,398.6	977.7	1,338.9	560.7	498.6	1,179.5	1,235.7	1,509.7
Dec 10	4,196.6	902.7	1,334.6	570.2	494.7	1,156.3	1,118.3	1,489.7
Jan 11	4,079.9	833.4	1,300.3	560.8	488.9	1,160.6	1,050.1	1,476.2
Feb 11	4,024.0	832.0	1,280.1	558.7	485.2	1,134.6	999.6	1,465.0
Mar 11	3,976.7	796.4	1,300.1	565.0	482.7	1,133.3	996.5	1,442.9
Apr 11	3,930.9	728.2	1,286.8	559.8	478.6	1,127.4	903.2	1,443.6
May 11	3,910.3	741.0	1,258.7	556.2	462.0	1,112.7	831.7	1,496.1
Jun 11	3,871.7	732.1	1,273.5	564.6	463.4	1,131.6	950.0	1,461.1
Jul 11	3,925.2	724.3	1,254.0	560.5	449.4	1,146.8	937.9	1,493.2
	Change compared with previous year, per cent							
2006	...	9.7	22.2	19.8	23.8	3.2	16.2	7.8
2007	...	29.3	18.6	17.4	20.5	19.8	27.2	17.2
2008	...	5.4	15.9	5.3	9.3	2.5	0.2	5.8
2009	...	-10.1	-12.1	-1.9	-12.2	10.2	-17.9	-1.0
2010	...	3.0	-1.8	-1.0	-6.6	-3.9	-5.7	5.6
Jul 10	...	12.9	-4.1	0.5	-4.7	-3.8	-6.8	3.8
Aug 10	...	20.3	-0.6	1.2	-2.3	-5.0	3.5	6.1
Sep 10	...	15.8	-2.1	0.4	-3.4	-2.1	13.1	5.0
Oct 10	...	6.0	-0.6	0.2	-4.2	-6.6	11.5	3.5
Nov 10	...	13.4	-1.2	0.0	-5.8	-2.1	7.0	5.7
Dec 10	...	3.0	-1.8	-1.0	-6.6	-3.9	-5.7	5.6
Jan 11	...	-12.3	-4.5	-0.8	-6.6	-3.3	-16.5	3.4
Feb 11	...	-14.2	-4.8	-0.4	-9.2	-3.9	-20.6	3.5
Mar 11	...	-16.1	-3.5	-0.3	-9.3	-8.7	-21.2	1.8
Apr 11	...	-20.5	-3.5	0.0	-9.4	-5.2	-21.4	0.2
May 11	...	-22.7	-7.0	-0.5	-12.3	-8.5	-29.5	2.8
Jun 11	...	-20.2	-8.3	-0.9	-12.8	-11.3	-21.2	2.8
Jul 11	...	-22.6	-7.9	-0.5	-12.0	-7.8	-18.6	0.3

Note: Excluding Danish banks' units abroad.

SELECTED ITEMS FROM THE BALANCE SHEET OF THE MORTGAGE-CREDIT INSTITUTES

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							
2006	2,699.9	245.1	1,834.8	1,420.2	358.2	574.1	226.5	2,297.9
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	3,960.3	572.7	2,351.3	1,753.3	532.0	926.1	576.9	3,139.8
Jul 10	3,229.2	477.8	2,320.4	1,734.5	519.5	315.9	515.7	2,516.5
Aug 10	3,288.0	502.8	2,328.9	1,742.0	519.8	332.4	534.2	2,561.6
Sep 10	3,398.8	583.7	2,336.6	1,743.5	524.8	361.9	530.4	2,648.3
Oct 10	3,277.5	498.8	2,340.0	1,747.4	525.6	337.2	520.3	2,564.0
Nov 10	3,384.5	524.7	2,347.7	1,752.5	528.8	401.5	541.4	2,634.0
Dec 10	3,960.3	572.7	2,351.3	1,753.3	532.0	926.1	576.9	3,139.8
Jan 11	3,206.3	454.4	2,350.5	1,751.4	533.2	302.4	515.7	2,481.6
Feb 11	3,226.3	455.3	2,349.7	1,749.0	534.8	312.5	525.5	2,487.0
Mar 11	3,432.6	509.9	2,354.7	1,748.4	539.1	465.1	562.9	2,635.3
Apr 11	3,202.2	451.5	2,356.3	1,751.7	539.0	297.5	506.8	2,482.4
May 11	3,227.5	453.5	2,363.0	1,754.5	542.7	305.7	515.0	2,503.8
Jun 11	3,266.8	508.2	2,365.1	1,754.5	544.3	295.6	528.5	2,509.4
Jul 11	3,256.6	481.8	2,368.2	1,756.3	545.4	300.7	530.9	2,516.0
	Change compared with previous year, per cent							
2006	...	141.7	10.2	10.8	7.2	-11.0	49.3	2.7
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	3.2	2.4	6.2	-0.2	7.0	3.0
Jul 10	...	22.3	3.2	3.0	5.2	18.9	20.7	6.2
Aug 10	...	25.0	3.1	3.0	4.2	10.7	19.3	6.1
Sep 10	...	31.2	3.1	2.9	4.6	9.6	20.9	6.8
Oct 10	...	21.4	3.0	2.9	4.4	-2.0	13.7	4.6
Nov 10	...	24.9	3.0	2.8	4.9	-5.9	18.7	3.0
Dec 10	...	11.8	3.2	2.4	6.2	-0.2	7.0	3.0
Jan 11	...	5.9	3.0	2.2	5.7	8.6	6.4	2.6
Feb 11	...	3.9	2.7	1.9	5.6	7.5	6.0	1.7
Mar 11	...	1.9	2.7	1.7	6.3	35.0	11.9	3.7
Apr 11	...	6.3	2.5	2.0	5.1	3.7	6.1	1.2
May 11	...	-1.4	2.5	1.8	4.9	5.6	3.7	0.5
Jun 11	...	-2.9	2.2	1.4	5.0	-6.3	-0.2	-1.2
Jul 11	...	0.8	2.1	1.3	5.0	-4.8	3.0	0.0

LENDING TO RESIDENTS BY THE BANKS AND
THE MORTGAGE-CREDIT INSTITUTES

Table 8

End of period	Total lending			The banks' lending			The mortgage-credit institutes' lending		
	Total	House-holds, etc.	Business, etc.	Total	House-holds, etc.	Business, etc.	Total	House-holds, etc.	Business, etc.
	Kr. billion								
2006	3,000.8	1,895.2	1,002.6	1,166.0	475.0	636.9	1,834.8	1,420.2	365.7
2007	3,387.8	2,106.7	1,173.0	1,372.3	557.4	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	3,708.4	2,323.6	1,281.8	1,357.2	570.2	738.6	2,351.3	1,753.3	543.1
Jul 10	3,701.4	2,297.6	1,292.8	1,381.1	563.1	761.8	2,320.4	1,734.5	531.1
Aug 10	3,719.0	2,305.3	1,307.4	1,390.1	563.3	776.1	2,328.9	1,742.0	531.3
Sep 10	3,718.4	2,314.3	1,294.6	1,381.8	570.9	758.8	2,336.6	1,743.5	535.8
Oct 10	3,711.6	2,311.3	1,295.7	1,371.6	563.9	759.1	2,340.0	1,747.4	536.6
Nov 10	3,709.2	2,313.2	1,293.5	1,361.5	560.7	753.6	2,347.7	1,752.5	539.9
Dec 10	3,708.4	2,323.6	1,281.8	1,357.2	570.2	738.6	2,351.3	1,753.3	543.1
Jan 11	3,670.4	2,312.2	1,259.1	1,319.9	560.8	714.8	2,350.5	1,751.4	544.3
Feb 11	3,649.4	2,307.7	1,245.9	1,299.7	558.7	699.9	2,349.7	1,749.0	546.0
Mar 11	3,674.4	2,313.4	1,263.1	1,319.7	565.0	712.5	2,354.7	1,748.4	550.5
Apr 11	3,660.7	2,311.5	1,254.8	1,304.4	559.8	704.5	2,356.3	1,751.7	550.3
May 11	3,639.3	2,310.7	1,234.8	1,276.3	556.2	680.6	2,363.0	1,754.5	554.3
Jun 11	3,656.2	2,319.1	1,237.2	1,291.1	564.6	681.2	2,365.1	1,754.5	556.0
Jul 11	3,639.7	2,316.9	1,222.8	1,271.6	560.5	665.6	2,368.2	1,756.3	557.2
	Change compared with previous year, per cent								
2006	14.8	12.9	17.7	22.7	19.8	24.8	10.2	10.8	7.0
2007	12.9	11.2	17.0	17.7	17.4	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	0.7	1.6	-0.2	-3.3	-1.0	-4.1	3.2	2.4	5.7
Jul 10	-0.3	2.4	-4.5	-5.7	0.5	-9.9	3.2	3.0	4.4
Aug 10	1.0	2.6	-1.6	-2.4	1.2	-4.7	3.1	3.0	3.5
Sep 10	0.4	2.3	-2.8	-3.8	0.4	-6.9	3.1	2.9	3.7
Oct 10	1.1	2.2	-0.6	-2.2	0.2	-3.3	3.0	2.9	3.5
Nov 10	0.8	2.1	-0.9	-2.8	0.0	-4.1	3.0	2.8	3.8
Dec 10	0.7	1.6	-0.2	-3.3	-1.0	-4.1	3.2	2.4	5.7
Jan 11	-0.4	1.4	-2.9	-5.8	-0.8	-8.4	3.0	2.2	5.3
Feb 11	-0.7	1.3	-3.6	-6.1	-0.4	-9.4	2.7	1.9	5.1
Mar 11	-0.2	1.2	-2.0	-4.9	-0.3	-7.4	2.7	1.7	5.9
Apr 11	0.0	1.5	-1.7	-4.3	0.0	-6.3	2.5	2.0	4.9
May 11	-1.3	1.2	-5.0	-7.7	-0.5	-11.7	2.5	1.8	4.8
Jun 11	-2.1	0.9	-6.6	-8.9	-0.9	-14.3	2.2	1.4	5.0
Jul 11	-1.7	0.8	-5.4	-7.9	-0.5	-12.6	2.1	1.3	4.9

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 credit institutes) and unknown sector.

THE MORTGAGE-CREDIT INSTITUTES' 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						
2006	83.5	797.5	951.7	720.5	1,832.7	85.7	432.2
2007	77.9	889.2	1,045.6	796.6	2,012.7	123.8	547.3
2008	72.4	903.9	1,189.1	900.3	2,165.4	155.3	626.4
2009	68.3	740.2	1,472.7	1,106.6	2,281.2	211.4	695.1
2010	63.9	648.3	1,641.0	1,190.5	2,353.2	232.3	740.6
Jul 10	66.7	661.5	1,595.4	1,175.4	2,323.5	228.9	719.6
Aug 10	66.6	664.5	1,600.5	1,176.7	2,331.6	229.5	722.9
Sep 10	66.6	658.2	1,614.1	1,182.7	2,338.9	231.0	727.2
Oct 10	66.5	655.6	1,619.8	1,177.3	2,341.8	231.3	731.8
Nov 10	66.1	657.5	1,626.3	1,180.5	2,349.9	232.1	736.7
Dec 10	63.9	648.3	1,641.0	1,190.5	2,353.2	232.3	740.6
Jan 11	64.0	644.4	1,643.6	1,183.3	2,352.0	231.2	741.6
Feb 11	64.1	643.9	1,647.8	1,184.8	2,355.8	231.5	744.8
Mar 11	64.3	635.8	1,657.6	1,188.3	2,357.7	231.6	749.1
Apr 11	64.4	633.4	1,660.4	1,197.0	2,358.1	230.8	751.2
May 11	64.1	634.9	1,666.1	1,200.2	2,365.1	230.7	754.0
Jun 11	62.2	634.0	1,670.4	1,202.8	2,366.7	231.3	757.1
Jul 11	62.2	632.3	1,675.5	1,205.1	2,370.0	230.4	759.3

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-credit institutes' instalment-free lending to owner-occupied dwellings.

THE BANKS' EFFECTIVE INTEREST RATES — Table 10

	Lending				Deposits			
	All sectors	Households, etc.	Non-financial companies	Financial companies	All sectors	Households, etc.	Non-financial companies	Financial companies
	Per cent, per annum							
Q1 06	4.8	6.2	4.5	2.8	1.9	1.5	2.0	2.4
Q2 06	5.0	6.4	4.7	3.1	2.1	1.8	2.3	2.6
Q3 06	5.2	6.6	5.0	3.3	2.4	2.1	2.5	2.8
Q4 06	5.4	6.8	5.2	3.5	2.7	2.4	2.9	3.2
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	4.5	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
Jul 10	3.5	5.2	4.1	1.1	0.9	1.1	0.6	0.8
Aug 10	3.5	5.1	4.1	1.2	0.9	1.1	0.6	0.8
Sep 10	3.5	5.1	4.1	1.2	0.9	1.1	0.6	0.8
Oct 10	3.5	5.2	4.2	1.1	0.9	1.1	0.6	0.8
Nov 10	3.7	5.2	4.3	1.2	0.9	1.1	0.6	0.9
Dec 10	3.5	5.1	4.1	1.1	0.9	1.0	0.7	0.9
Jan 11	3.8	5.2	4.2	1.3	0.9	1.1	0.6	0.9
Feb 11	3.8	5.2	4.3	1.4	1.0	1.1	0.7	1.0
Mar 11	3.9	5.1	4.2	1.4	1.0	1.1	0.7	0.9
Apr 11	4.0	5.2	4.4	1.5	1.0	1.1	0.8	1.1
May 11	4.1	5.3	4.4	1.6	1.1	1.2	0.8	1.2
Jun 11	4.0	5.3	4.4	1.6	1.1	1.2	0.9	1.1
Jul 11	4.1	5.5	4.5	1.7	1.2	1.3	0.9	1.3

DANMARKS NATIONALBANK'S LENDING SURVEY Table 11

	Changes in banks and mortgage-credit institutes' 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

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.						
2006	924.7	431.8	385.4	294.3	289.6	305.3	28.8
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	865.5	487.5	301.4	252.7	357.8	185.1	22.7
2010	1,287.1	768.7	385.2	299.0	653.0	235.2	25.2
Jul 10	1,045.0	630.5	322.7	276.2	452.3	203.7	27.0
Aug 10	1,067.7	662.9	308.6	276.8	472.5	204.5	27.4
Sep 10	1,115.3	677.1	320.3	282.0	539.0	209.8	27.2
Oct 10	1,167.6	714.3	336.6	286.8	578.1	214.7	27.1
Nov 10	1,223.8	730.8	377.1	291.1	606.4	219.1	27.5
Dec 10	1,287.1	768.7	385.2	299.0	653.0	235.2	25.2
Jan 11	1,299.2	773.5	390.1	299.6	652.9	237.6	26.5
Feb 11	1,313.1	789.3	397.0	301.1	658.3	243.1	26.7
Mar 11	1,289.8	775.9	386.4	299.1	657.5	240.8	26.4
Apr 11	1,294.8	775.1	386.0	298.4	662.5	240.1	25.8
May 11	1,362.6	798.7	390.3	303.1	667.9	294.8	26.2
Jun 11	1,347.9	784.4	380.3	301.0	655.2	294.7	26.3
Jul 11	1,365.5	809.4	375.1	303.1	660.2	300.1	26.5

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							
2006	2,541.3	464.7	380.1	172.6	2,034.9	285.9	989.4	361.8
2007	2,701.2	475.8	301.9	176.2	2,247.1	287.7	996.1	445.4
2008	2,981.5	405.0	363.1	158.5	2,419.2	227.4	529.9	244.4
2009	3,415.2	431.4	394.2	159.8	2,803.0	251.7	641.0	347.5
2010	3,540.3	549.9	474.2	172.9	2,834.8	352.7	784.4	545.7
Jul 10	2,931.1	527.1	483.3	193.9	2,188.1	312.3	688.3	475.6
Aug 10	3,001.6	537.6	500.2	213.4	2,243.2	301.6	652.7	460.3
Sep 10	3,075.1	532.7	494.5	207.6	2,348.9	299.3	682.9	491.9
Oct 10	2,941.1	544.0	483.6	195.8	2,227.1	322.2	718.9	518.5
Nov 10	3,176.6	494.1	471.0	179.3	2,479.3	290.4	725.5	522.0
Dec 10	3,540.3	549.9	474.2	172.9	2,834.8	352.7	784.4	545.7
Jan 11	2,772.1	597.2	462.3	190.0	2,086.0	384.1	789.0	543.8
Feb 11	2,790.8	583.2	462.3	195.7	2,108.8	366.0	793.1	560.6
Mar 11	2,943.8	565.3	451.5	194.2	2,275.1	351.2	772.6	553.8
Apr 11	2,791.1	577.5	463.0	199.7	2,114.2	355.4	781.3	554.4
May 11	2,830.2	566.1	477.4	197.8	2,140.7	348.8	766.2	538.8
Jun 11	2,821.3	594.8	475.4	201.6	2,137.4	375.8	716.9	512.8
Jul 11	2,843.1	584.1	500.8	202.1	2,139.2	364.5	699.1	503.5

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 associations, etc.	Life-insurance and pension-scheme savings, etc.	Total	Loans, etc.	Net financial assets	Total
	Kr. billion							
2006	839	181	1,563	1,681	4,263	2,072	2,192	4,264
2007	902	188	1,453	1,723	4,265	2,249	2,016	4,265
2008	905	178	794	1,787	3,665	2,388	1,276	3,664
2009	925	171	1,004	1,923	4,023	2,509	1,514	4,023
2010	965	149	1,214	2,136	4,464	2,649	1,815	4,464
Q1 10	933	164	1,087	2,010	4,194	2,546	1,647	4,193
Q2 10	942	155	1,060	2,102	4,260	2,569	1,691	4,260
Q3 10	941	155	1,101	2,177	4,374	2,594	1,781	4,375
Q4 10	965	149	1,214	2,136	4,464	2,649	1,815	4,464
Q1 11	951	148	1,172	2,117	4,388	2,629	1,759	4,388

COMPANIES' FINANCIAL ASSETS AND LIABILITIES Table 15

	Assets				Liabilities				
					Debt				
End of period	Currency, bank deposits and granted credits, etc.	Bonds, etc.	Shares and certificates issued by investment associations, etc.	Total	Loans, etc.	Bonds, etc. issued	Shares, etc. issued	Net financial assets	Total
	Kr. billion								
2006	812	148	3,083	4,043	1,581	139	4,429	-2,106	4,043
2007	886	133	2,923	3,942	1,727	118	4,284	-2,187	3,942
2008	1,022	104	1,781	2,907	1,931	109	2,513	-1,645	2,907
2009	1,021	104	2,153	3,279	1,885	138	2,955	-1,699	3,279
2010	1,131	119	2,561	3,811	1,922	142	3,645	-1,898	3,811
Q1 10	1,028	112	2,357	3,497	1,922	137	3,235	-1,798	3,496
Q2 10	1,062	105	2,281	3,447	1,963	129	3,149	-1,793	3,448
Q3 10	1,079	111	2,318	3,507	1,954	132	3,264	-1,843	3,507
Q4 10	1,131	119	2,561	3,811	1,922	142	3,645	-1,898	3,811
Q1 11	1,109	125	2,472	3,707	1,845	158	3,537	-1,832	3,707

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					
2006	18.2	42.0	60.2	16.8	-28.4	48.6
2007	2.1	40.3	42.5	9.7	-29.2	23.0
2008	4.2	51.6	55.8	18.2	-27.8	46.2
2009	42.7	23.6	66.4	21.0	-28.4	59.0
2010	48.8	47.0	95.8	28.1	-32.2	91.6
Aug 09 – Jul 10	51.0	34.4	85.4	19.7	-30.3	74.8
Aug 10 – Jul 11	49.6	47.8	97.4	43.6	-30.7	110.4
Jul 10	7.3	3.5	10.8	1.6	-2.3	10.0
Aug 10	3.4	6.2	9.6	1.6	-2.4	8.8
Sep 10	5.7	5.0	10.7	3.9	-2.5	12.1
Oct 10	3.9	4.8	8.7	3.8	-2.3	10.3
Nov 10	4.7	5.0	9.7	3.7	-2.1	11.3
Dec 10	0.6	4.5	5.1	3.0	-2.2	5.9
Jan 11	4.6	2.6	7.3	4.0	-3.8	7.4
Feb 11	4.2	2.3	6.4	3.1	-3.6	6.0
Mar 11	7.0	2.9	9.9	0.7	-3.2	7.4
Apr 11	4.2	4.7	8.9	3.0	-2.1	9.8
May 11	3.2	3.3	6.5	6.3	-2.1	10.7
Jun 11	3.5	3.8	7.3	5.3	-2.0	10.6
Jul 11	4.6	2.6	7.2	5.3	-2.5	10.0

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

	Current account and capital account, etc., total	Capital import				Other [2]	Danmarks Nationalbank's transactions with abroad [3]
		Direct investments		Portfolio investments [1]	Other capital import		
		Danish abroad	Foreign in Denmark				
	Kr. billion						
2006	48.6	-50.2	16.1	-103.3	83.4	-33.0	-38.3
2007	23.3	-112.3	64.3	-31.5	56.5	-1.0	-1.2
2008	46.6	-72.1	11.4	53.0	-66.7	-43.5	-71.4
2009	58.8	-36.9	15.9	74.3	195.4	-19.4	288.0
2010	92.3	-17.7	-10.2	-5.8	73.5	-113.8	26.5
Aug 09 – Jul 10	75.4	-39.5	27.1	-16.9	154.1	-97.2	102.9
Aug 10 – Jul 11	111.1	-55.5	17.6	25.2	-28.1	-34.7	35.6
Jul 10	10.1	-9.5	4.5	19.1	-2.7	-27.4	-6.0
Aug 10	8.8	1.5	2.7	-22.9	3.7	9.5	3.3
Sep 10	12.2	-8.3	4.3	-69.3	88.5	-25.1	2.3
Oct 10	10.3	29.2	-11.6	15.0	-50.9	0.9	-7.1
Nov 10	11.4	-11.1	26.0	-65.4	35.4	5.6	2.0
Dec 10	6.0	14.5	-43.5	97.1	-43.8	-30.1	0.1
Jan 11	7.5	-9.5	-6.5	19.4	-28.0	18.4	1.2
Feb 11	6.1	-11.4	-2.0	16.9	-12.5	20.1	17.2
Mar 11	7.5	-3.1	4.8	13.1	-9.3	-4.5	8.5
Apr 11	9.9	-13.5	4.1	33.0	-9.5	-21.9	2.0
May 11	10.8	-13.9	44.5	10.8	-50.4	0.7	2.5
Jun 11	10.7	-22.1	4.6	21.0	18.3	-28.5	4.1
Jul 11	10.0	-8.0	-9.6	-43.5	30.4	20.2	-0.4

[1] 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.

[2] Including errors and omissions.

[3] 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					
2006	16.3	70.0	-34.4	-21.5	-133.8	-103.3
2007	26.2	73.1	15.0	-96.0	-49.8	-32.0
2008	-59.1	141.2	11.4	-91.1	50.7	53.0
2009	-5.6	162.6	43.1	-83.4	-42.4	74.3
2010	79.0	-34.5	41.0	-57.0	-34.3	-5.8
Jul 10	25.3	3.2	-3.3	0.3	-6.5	19.1
Aug 10	14.0	-45.9	1.0	5.1	2.9	-22.9
Sep 10	5.3	-94.3	3.0	14.6	2.1	-69.3
Oct 10	19.1	9.8	9.5	-17.5	-5.9	15.0
Nov 10	-26.0	-12.9	-0.9	-20.0	-5.6	-65.4
Dec 10	17.3	68.9	12.3	10.4	-11.8	97.1
Jan 11	47.5	-3.9	0.7	-13.1	-11.8	19.4
Feb 11	-6.4	35.8	-2.3	-7.6	-2.6	16.9
Mar 11	4.2	11.3	0.7	2.5	-5.7	13.1
Apr 11	1.5	16.0	8.7	12.7	-5.9	33.0
May 11	7.2	7.5	-15.4	10.3	1.3	10.8
Jun 11	13.1	-30.4	0.0	31.1	7.3	21.0
Jul 11	-6.3	-28.6	0.7	-4.9	-4.4	-43.5

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: Equity	Direct investments: Inter-company debt, etc.	Portfolio investments: Shares, etc.	Portfolio investments: Bonds, etc.	Financial derivatives, net	Other investments: Trade credits	Other investments: Loans and deposits	Other investments: Other	Danmarks Nationalbank	Total
	Kr. billion									
Assets										
2006	579	260	746	678	47	41	823	30	178	3,383
2007	651	287	794	733	0	47	1,035	32	176	3,755
2008	643	378	448	782	84	45	1,101	37	226	3,744
2009	718	375	608	925	23	38	927	32	400	4,044
2010	837	404	739	1,031	39	45	989	32	432	4,549
Q1 10	779	388	652	1,014	41	43	987	34	423	4,362
Q2 10	821	405	648	1,031	70	46	968	32	483	4,503
Q3 10	794	423	662	1,024	90	46	1,067	34	474	4,614
Q4 10	837	404	739	1,031	39	45	989	32	432	4,549
Q1 11	835	403	745	1,021	8	49	959	32	454	4,506
Liabilities										
2006	482	270	356	1,066	•	32	1,142	35	4	3,386
2007	543	276	422	1,123	•	36	1,409	37	5	3,851
2008	507	295	242	1,198	•	42	1,398	40	121	3,842
2009	478	302	348	1,361	•	35	1,402	38	5	3,969
2010	515	291	520	1,451	•	40	1,520	39	5	4,381
Q1 10	486	300	411	1,410	•	30	1,576	42	2	4,256
Q2 10	514	309	431	1,506	•	34	1,496	39	42	4,371
Q3 10	519	304	454	1,381	•	37	1,660	41	37	4,434
Q4 10	515	291	520	1,451	•	40	1,520	39	5	4,381
Q1 11	499	281	534	1,493	•	39	1,431	40	3	4,319
Net assets										
2006	98	-11	390	-387	47	10	-319	-5	174	-3
2007	108	12	372	-390	0	11	-374	-5	171	-96
2008	136	84	206	-416	84	3	-297	-3	105	-99
2009	240	73	260	-437	23	3	-476	-6	395	76
2010	322	113	219	-420	39	5	-531	-7	428	168
Q1 10	293	88	242	-396	41	13	-588	-8	421	106
Q2 10	306	96	217	-475	70	12	-527	-7	441	132
Q3 10	276	119	208	-357	90	8	-593	-7	437	181
Q4 10	322	113	219	-420	39	5	-531	-7	428	168
Q1 11	337	122	211	-472	8	10	-472	-7	452	187

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							
2006	1,631.7	786.6	422.6	356.0	14.6	1,579.8	849.6	797.7
2007	1,695.3	820.4	440.0	371.4	24.8	1,656.5	885.2	846.5
2008	1,740.8	840.3	464.8	365.5	15.2	1,685.7	959.0	903.8
2009	1,656.1	813.6	496.3	303.4	-20.3	1,592.9	792.8	729.6
2010	1,742.7	853.1	511.7	292.1	-6.3	1,650.5	882.8	790.6
Q2 10	436.4	211.3	128.5	75.3	1.1	416.2	220.5	200.3
Q3 10	438.9	208.7	127.6	72.4	0.3	409.1	231.2	201.3
Q4 10	452.3	224.2	130.5	78.4	-4.0	429.1	230.2	207.1
Q1 11	428.9	212.5	126.3	66.2	0.6	405.6	231.1	207.7
Q2 11	449.0	217.0	129.6	74.3	4.4	425.3	239.0	215.3
	Real growth compared with previous year, per cent							
2006	3.4	3.6	2.8	14.2	...	5.2	9.0	13.4
2007	1.6	3.0	1.3	0.4	...	2.3	2.8	4.3
2008	-1.1	-0.6	1.6	-3.2	...	-1.2	2.8	2.7
2009	-5.2	-4.5	3.1	-14.3	...	-6.5	-9.7	-12.5
2010	1.7	2.3	0.7	-3.2	...	1.7	3.8	3.9
Q2 10	2.2	1.9	1.8	1.5	...	3.7	3.2	6.6
Q3 10	3.2	1.7	0.3	-0.9	...	2.5	6.1	4.7
Q4 10	2.7	2.6	-0.6	3.2	...	2.1	7.7	6.9
Q1 11	1.7	-0.8	-0.7	-1.5	...	0.2	10.6	8.4
Q2 11	2.0	-0.2	0.0	-3.7	...	0.0	8.7	5.1
	Real growth compared with previous quarter (seasonally adjusted), per cent							
Q2 10	0.9	-0.5	0.3	6.3	...	2.1	2.0	4.6
Q3 10	1.1	-0.1	-0.4	-0.6	...	-0.3	2.9	0.1
Q4 10	-0.3	0.9	-0.4	0.5	...	0.0	0.8	1.5
Q1 11	0.1	-0.9	-0.1	-7.2	...	-1.4	4.6	2.0
Q2 11	1.0	-0.3	0.9	4.5	...	1.6	0.2	1.4

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	10.4	17.4	72.2	7.4	3.9	60.9	53.2	16.8	36.4
	Year-on-year growth, per cent									
2006	1.9	5.3	2.2	1.2	2.1	0.9	1.1	1.3	3.1	0.4
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
Q1 08	3.2	7.5	6.0	1.7	2.2	2.4	1.6	2.0	3.6	1.1
Q2 08	3.7	9.7	7.4	1.7	2.6	4.0	1.4	1.8	4.2	0.6
Q3 08	4.6	10.4	8.6	2.5	3.9	3.7	2.2	2.2	4.9	0.9
Q4 08	3.0	3.1	5.0	2.4	2.4	3.8	2.3	2.3	3.2	1.8
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

Note: The weights reflect the weighting basis as of January 2009.

[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 [3]
	Gross [1]	Net	2005=100	2005=100	Number		Balance per cent			
2006	...	3.9	105.7	103.5	1,231	156,719	10.5	9	21	24
2007	3.7	2.8	107.0	104.9	1,392	162,481	7.5	5	9	20
2008	2.7	1.9	106.7	101.7	2,840	150,663	-7.7	-7	-16	3
2009	4.9	3.6	88.2	97.0	4,140	112,249	-5.0	-17	-44	-13
2010	6.2	4.3	90.6	96.7	5,222	153,609	1.8	3	-35	4
					Seasonally adjusted					
Aug 10	6.3	4.2	91.0	95.8	384	13,165	4.9	4	-32	4
Sep 10	6.3	4.3	94.7	96.3	419	13,589	2.1	5	-28	5
Oct 10	6.4	4.3	91.2	96.6	441	13,727	1.2	2	-32	5
Nov 10	6.3	4.3	90.4	96.8	407	14,323	2.5	-2	-33	9
Dec 10	6.3	4.2	89.8	96.2	420	13,851	1.8	-1	-31	3
Jan 11	6.2	4.2	94.8	96.7	426	14,691	1.9	4	-32	8
Feb 11	6.1	4.1	90.6	96.0	429	14,067	0.8	3	-21	10
Mar 11	6.1	4.1	92.4	95.9	385	14,627	1.4	0	-16	7
Apr 11	6.0	3.9	95.6	96.5	400	13,773	-0.1	9	-20	13
May 11	6.1	4.1	98.7	95.2	394	14,978	0.9	12	-17	8
Jun 11	6.1	4.1	93.9	94.7	351	14,186	3.0	4	-20	10
Jul 11	6.1	4.1	96.9	93.7	386	14,039	-1.3	6	-18	9
Aug 11	...	...	...	...	407	...	-1.8	5	-21	-1

[1] Including persons in activation programmes.
[2] Excluding shipbuilding.
[3] Revised as from May 2011.

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			
2006	2,825	1,980	145.7	146.1	134.2	100.3
2007	2,903	2,061	151.4	152.1	138.4	104.8
2008	2,958	2,120	158.1	158.5	143.0	100.1
2009	2,866	2,016	162.9	163.2	145.7	88.1
2010	2,806	1,946	166.6	167.4	149.5	90.5
			Seasonally adjusted			
2. kvt. 10	2,815	1,953	166.0	167.1	148.9	91.1
3. kvt. 10	2,804	1,942	167.0	168.0	149.7	91.3
4. kvt. 10	2,798	1,942	167.7	169.1	150.6	90.9
1. kvt. 11	2,798	1,945	168.6	170.3	152.2	89.2
2. kvt. 11	2,804	1,953	169.1	170.9	152.6	...
			Change compared with previous year, per cent			
2006	2.1	2.9	3.1	3.1	2.7	21.6
2007	2.8	4.1	3.8	4.0	3.2	4.6
2008	1.9	2.9	4.4	4.2	3.3	-4.5
2009	-3.1	-4.9	3.0	2.9	1.9	-12.0
2010	-2.1	-3.4	2.3	2.6	2.6	2.8
2. kvt. 10	-2.4	-4.0	2.2	2.6	2.6	3.6
3. kvt. 10	-1.4	-2.4	2.2	2.5	2.4	3.0
4. kvt. 10	-0.5	-0.8	2.2	2.5	2.3	2.9
1. kvt. 11	-0.4	-0.2	1.8	2.4	2.2	0.6
2. kvt. 11	-0.4	0.0	1.9	2.3	2.5	...

EXCHANGE RATES — Table 24

	EUR	USD	GBP	SEK	NOK	CHF	JPY
	Kroner per 100 units						
	Average						
2006	745.91	594.70	1,094.32	80.62	92.71	474.22	5.1123
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
Aug 10	744.95	577.90	904.51	79.07	93.91	555.68	6.7733
Sep 10	744.76	570.26	886.92	80.74	94.09	569.07	6.7591
Oct 10	745.67	536.57	850.91	80.36	91.93	554.34	6.5603
Nov 10	745.47	545.99	871.93	80.02	91.51	554.70	6.6164
Dec 10	745.28	563.81	879.47	82.23	94.22	580.90	6.7607
Jan 11	745.18	558.00	879.82	83.62	95.30	583.22	6.7529
Feb 11	745.55	546.27	880.93	84.84	95.34	574.71	6.6116
Mar 11	745.74	532.75	860.72	83.93	95.26	579.63	6.5200
Apr 11	745.74	516.75	844.58	83.10	95.52	574.38	6.1913
May 11	745.66	519.65	849.47	83.24	95.13	594.77	6.4033
Jun 11	745.81	518.67	839.89	81.73	95.21	617.16	6.4487
Jul 11	745.60	522.76	842.79	81.63	95.80	634.03	6.5852
Aug 11	744.98	519.42	849.80	81.29	95.66	665.74	6.7465

EFFECTIVE KRONE RATE — Table 25

Average	Nominal effective krone rate	Consumer-price indices: Denmark	Consumer-price indices: Abroad	Real effective krone rate based on consumer prices	Real effective krone rate based on hourly earnings	Consumer-price index in the euro area
	1980=100					2005=100
2006	101.6	246.2	233.4	107.3	110.3	102.2
2007	103.2	250.5	238.7	108.3	112.7	104.4
2008	105.8	259.0	246.9	111.1	116.7	107.8
2009	107.8	262.4	247.2	114.9	120.6	108.1
2010	104.0	268.4	251.4	111.7	116.5	109.8
Aug 10	102.8	269.0	251.5	110.7	...	109.9
Sep 10	102.8	270.1	252.1	110.9	115.4	110.1
Oct 10	104.4	269.9	252.6	111.9	...	110.5
Nov 10	103.9	270.1	252.9	111.4	...	110.6
Dec 10	102.7	270.3	254.3	109.9	116.1	111.3
Jan 11	102.5	270.6	254.2	109.7	...	110.5
Feb 11	102.9	273.9	255.5	110.7	...	111.0
Mar 11	103.8	275.4	257.1	111.4	115.0	112.5
Apr 11	104.7	276.5	258.2	112.2	...	113.1
May 11	104.3	276.9	258.6	111.8	...	113.1
Jun 11	104.5	276.3	258.5	111.9	116.4	113.1
Jul 11	104.1	276.0	...	...	...	112.4
Aug 11	104.2	...	...	...	...	...
	Change compared with previous year, per cent					
2006	0.0	1.9	2.1	-0.1	0.5	2.2
2007	1.6	1.7	2.3	0.9	2.2	2.2
2008	2.5	3.4	3.4	2.6	3.6	3.3
2009	1.9	1.3	0.1	3.5	3.3	0.3
2010	-3.6	2.3	1.7	-2.8	-3.4	1.6
Aug 10	-4.3	2.3	1.6	-3.2	...	1.6
Sep 10	-4.8	2.6	1.8	-3.6	-4.1	1.8
Oct 10	-3.7	2.5	1.9	-3.1	...	1.9
Nov 10	-4.2	2.6	2.0	-3.3	...	1.9
Dec 10	-5.0	2.8	2.2	-4.0	-3.9	2.2
Jan 11	-4.2	2.7	2.4	-3.6	...	2.3
Feb 11	-2.7	2.7	2.5	-2.5	...	2.4
Mar 11	-1.6	2.7	2.7	-1.7	-2.6	2.7
Apr 11	-0.1	2.9	2.8	-0.4	...	2.8
May 11	1.0	3.1	2.9	0.4	...	2.7
Jun 11	2.2	3.0	2.8	1.5	0.1	2.7
Jul 11	1.1	2.9	...	...	...	2.5
Aug 11	1.4	...	...	...	...	...

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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