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Nationalbank

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2nd Quarter

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MONETARY REVIEW 2nd QUARTER 2009

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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Recent Economic and Monetary Trends

This review covers the period from mid-March to the beginning of June

SUMMARY

The global economy is still in a recession, but the slowdown seems to be abating. If this trend continues, international organisations believe that output will begin to pick up towards the end of the year. The strong decline in world trade in the latter part of 2008 has ceased in recent months. In its April forecast, the International Monetary Fund, IMF, expects global GDP to fall by 1.3 per cent in 2009.

In line with the global development, the Danish economy has shown a strong negative trend since late 2008, but has also begun to stabilise. Indicators point to a further decline in private consumption in the 1st quarter, albeit probably less pronounced than the in preceding quarter. Exports, on the other hand, continued their downward trend throughout the 1st quarter, and investments are also expected to decline.

Unemployment, which typically follows the business cycle with a lag, can be expected to continue to rise for some time yet, but from a low level. The trend in notifications indicates that unemployment is likely to rise more slowly in the coming months.

Price inflation has been declining since the autumn and was 1.1 per cent in April. This is moderate, but higher than in the euro area. Wage inflation in Denmark also continues to outpace that of Denmark's competitors. At the same time, economic policy is strongly expansionary and public finances are rapidly deteriorating. Some of the fiscal measures taken have not yet had time to work, and therefore the scope for further major steps to ease fiscal policy is very limited at this point in time.

THE INTERNATIONAL ECONOMY

The global economy is in a recession, but the slowdown seems to be abating. Less negative indicators in several economies have boosted confidence in the global economy, and international organisations expect output to begin to rise towards the end of the year. The financial crisis has gradually been loosening its grip on the world economy over the

last few months, and coupled with economic-policy expansion this has cushioned the downturn.

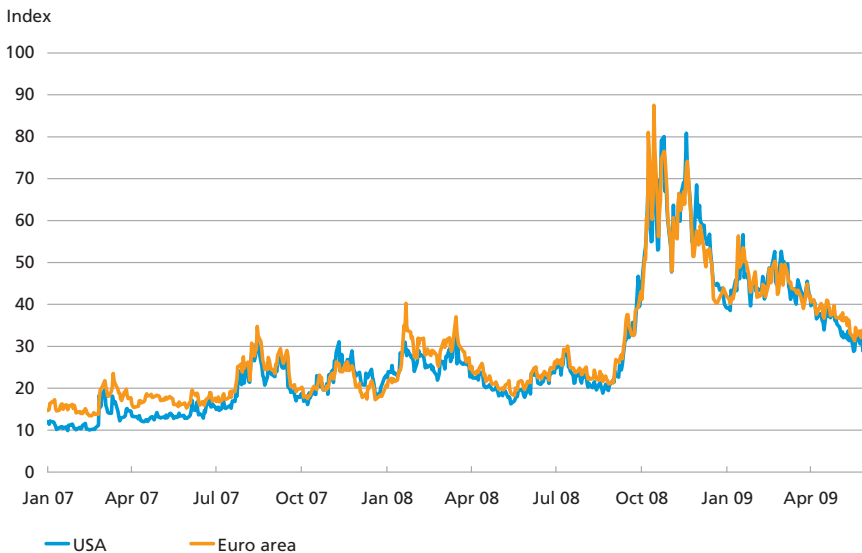
The financial markets

In many markets, particularly the money market, the spread between uncollateralised and collateralised interest rates, i.e. the credit spread, has narrowed from the crisis level in the autumn and investors' risk appetite has increased from a low level. The financial markets have by no means normalised, however. Compared with previous periods of turmoil, credit spreads in several markets remain wide, and considerable uncertainty impedes the functioning of the financial markets, cf. Chart 1.

The flight to government bonds seems to have reversed, and combined with an increased supply this has led to a rise in 10-year government bond yields in the USA, the euro area and the UK in the 1st half of 2009, to 3.6, 3.7 and 3.9 per cent, respectively, from the historically low levels at the end of 2008. Higher-risk assets such as equities have shown a steadily rising trend over the last three months, cf. Chart 2. Both industrial and financial stock indices in the USA, the euro area and the UK have increased considerably since March, and by early June industrial equities were back at their level at the beginning of the year. The upward trend was even more pronounced in the emerging market economies, where equity prices nevertheless remain considerably lower than at the beginning of 2008.

VOLATILITY INDICES FOR THE USA AND THE EURO AREA, 2007-09

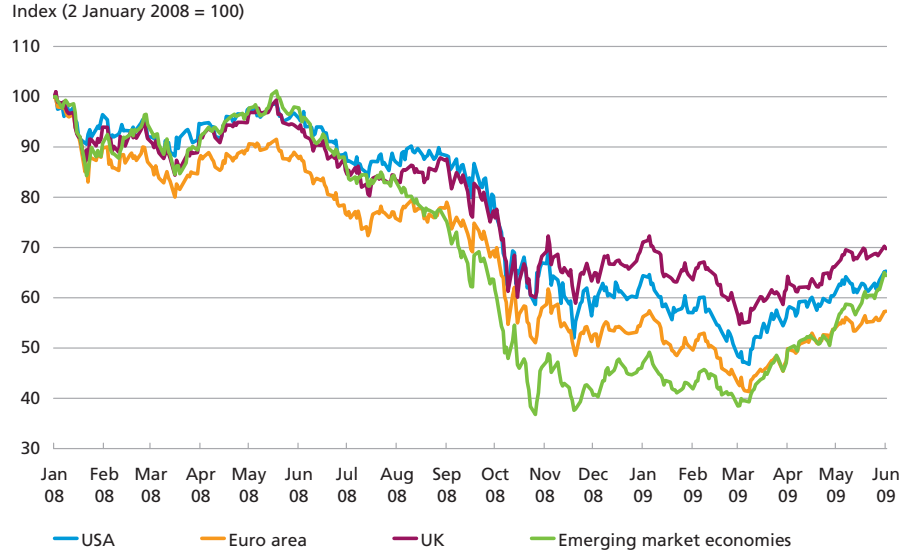
Chart 1



Note: The stock market volatility indices used are CBOE, VIX for the USA and VSTOXX for the euro area.
Source: Reuters EcoWin.

STOCK INDICES FOR SELECTED COUNTRIES AND ECONOMIES

Chart 2



Note: The stock indices applied are Standard & Poor's 500 Composite Index for the USA, Euro STOXX, Broad Index for the euro area, FTSE 100 for the UK and the weighted MSCI index in dollars for the emerging market economies.
 Source: Reuters EcoWin and Bloomberg.

In the spring, the 19 largest US banks were stress tested by the federal authorities in order to gauge the resilience of each individual bank to the economic crisis. On 7 May the US Department of the Treasury announced that 10 of the 19 banks were in need of a total of almost 75 billion dollars in extra capital. The three banks with the most urgent capital requirement (Bank of America, Wells Fargo and General Motors Acceptance Corp, GMAC) accounted for almost 80 per cent of the total. The stress-test conditions have been the subject of some discussion. The investor reaction to the results published was subdued. The banks found to be in need of further capital had to present a plan for procurement of such capital by 8 June 2009, and the plan must be implemented by 9 November 2009. In the EU, stress tests are also performed for a number of large banks with cross-border activities.

In April the IMF raised its forecast for potential write-downs in the US financial sector for the period 2007-10 to approximately 10 per cent of outstanding assets. This reflected expectations of more widespread credit deterioration than previously anticipated due to lower-than-expected economic activity in the first months of 2009. Similar forecasts for Europe (euro area plus UK) and Japan point to write-downs of 5 and 7 per cent, respectively, of the total outstanding assets over the same period.

The relative strengths of the major currencies have been fairly stable in recent months. Compared with the situation in the summer of 2008,

the euro thus remains relatively weak against the dollar, Swiss franc and yen, but has appreciated vis-à-vis the pound sterling, the Norwegian krone and the Swedish krona. Over the last month, the euro has strengthened against the dollar and the yen. The currencies of the emerging market economies have rebounded somewhat against the euro following strong currency depreciation in several countries at the end of 2008 and beginning of 2009.

Fiscal and monetary policies

The authorities have taken extensive measures to restore financial stability and mitigate the downturn, and both fiscal and monetary policies have been eased considerably.

The deteriorating economy automatically reduces public revenue from direct and indirect taxes and increases costs for transfer benefits. To this should be added the effect of actual relaxation of fiscal policy and the costs of the financial stimulus packages. This will put public finances under extensive pressure in the coming years. According to the IMF, the budget deficit of the major industrialised countries (the G7 countries) taken as one will grow from 4.6 per cent of GDP in 2008 to 10.4 per cent of GDP in 2010 and are not expected to be back at the 2008 level until 2014.

Since December, the Federal Reserve and the Bank of Japan have kept their target interest rates unchanged at 0-0.25 and 0.1 per cent, respectively, while the Bank of England has maintained the bank rate at 0.5 per cent since 5 March. Since March, the European Central Bank, ECB, has lowered its key interest rate in three increments, from 2 per cent to 1 per cent, and on 21 April Sveriges Riksbank lowered the repo rate from 1 per cent to 0.5 per cent. Policy interest rates are thus historically low, except in Japan, where the target policy rate was zero for some years up to 2006.

Unconventional monetary-policy measures are used extensively. On 18 March the Federal Reserve announced further quantitative easing of monetary policy, including the purchase of government bonds for approximately 300 billion dollars. This had an immediate impact on 10-year government bond yields, which fell by almost 0.5 per cent following the announcement. Moreover, during 2009 the Federal Reserve will allocate more funds to the purchase of mortgage bonds. In May, the Bank of England decided to increase its asset purchase programme by 50 billion pounds (76 billion dollars), to a total of 125 billion pounds (approximately 189 billion dollars). The Bank of Japan has not announced any further steps since December, when it launched a programme to purchase securities in the short-term money market and corporate bonds

for a total of 4,000 billion yen (approximately 42 billion dollars). In May, the ECB announced that it would begin to purchase covered bonds for around 60 billion euro (approximately 82 billion dollars).

Market intervention by public authorities thus remains massive, and both monetary and fiscal policies are very accommodative. When the economy really begins to pick up again, it is important that the expansionary economic policies can quickly be rolled back and that the necessary consolidation of public finances takes place in order to ensure longer-term fiscal sustainability and anchoring of medium-term expectations for price stability.

Real economy

The global economy is in a deep crisis, but there are signs that the downturn is abating. Several key indicators have been less negative than the markets had expected in recent months, and if this trend continues, international organisations believe that global output may begin to grow towards the end of the year. The positive signs in the real economy are most pronounced in the USA and China. The US housing market has shown signs of improvement, and private consumption has also begun to rise. In China, domestic demand is increasing, especially investment. Furthermore, a number of survey-based indicators increasingly point to recovery in the economy. These include the Purchasing Managers' Index, PMI, which has risen since the turn of the year, but remains at a low level, cf. Chart 3. In the euro area, the positive signs are less pronounced, but several confidence indicators have improved recently.

World trade stabilised in February and March following a pronounced fall in the autumn, cf. Box 1. The tendency to stabilise at a lower level is seen across most major economies. Moreover, a few indicators point to inventories now being so low that it is time to step up production again.

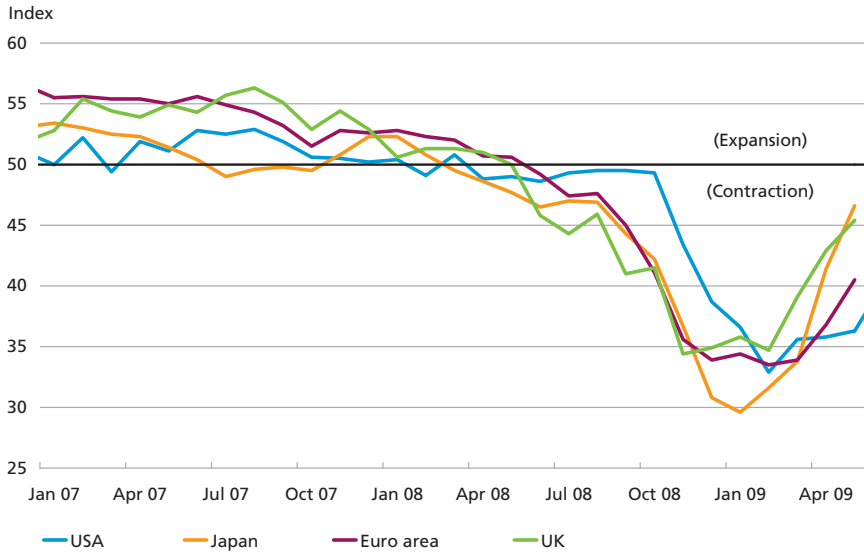
A more gloomy 1st quarter led the international organisations to adjust their growth expectations for 2009 and 2010 considerably downwards from end-March to May.¹ According to the IMF, global GDP is expected to fall by 1.3 per cent in 2009, cf. Table 1. In 2010 it is predicted to grow by 1.9 per cent.

The more sombre outlook related to emerging markets, developing countries and industrialised countries alike. Until 2010, actual output is expected to fall to a level considerably below its potential in the Indus-

¹ The OECD adjusted its growth forecasts downwards in the interim Economic Outlook 31 March 2009, and on 17 April the IMF followed suit in its World Economic Outlook, April 2009. Most recently, the European Commission in its spring forecast 2009, published on 4 May, lowered its expectations for the global economy.

INDEX FOR MANUFACTURING

Chart 3



Note: The Chart shows PMI, manufacturing, for the USA, Japan, the euro area and the UK, respectively. The Purchasing Managers' Index, PMI, is based on a questionnaire survey in which manufacturing executives report how their business enterprises are doing compared with the previous month. The survey is based on order intake, inventories, output, supplier deliveries and employment. A value of 50 is the threshold between contraction and expansion. A value above/below 50 indicates improvement/deterioration compared with the preceding month. Source: Bloomberg and Reuters EcoWin.

ESTIMATED GDP GROWTH IN SELECTED AREAS AND COUNTRIES

Table 1

Per cent	2009			2010		
	IMF	EU	Consensus	IMF	EU	Consensus
USA	-2.8	-2.9	-2.9	0.0	0.9	1.8
Euro area	-4.2	-4.0	-3.7	-0.4	-0.1	0.3
Germany	-5.6	-5.4	-5.0	-1.0	0.3	0.4
Japan	-6.2	-5.3	-6.1	0.5	0.1	1.3
China	6.5	6.1	7.5	7.5	7.8	8.4
India	4.5	n.a.	5.1	5.6	n.a.	6.7
World	-1.3	n.a.	n.a.	1.9	n.a.	n.a.

Source: IMF, World Economic Outlook, April 2009, European Commission's spring forecast, May 2009, and Consensus Economics, May 2009.

A PRONOUNCED FALL IN WORLD TRADE

Box 1

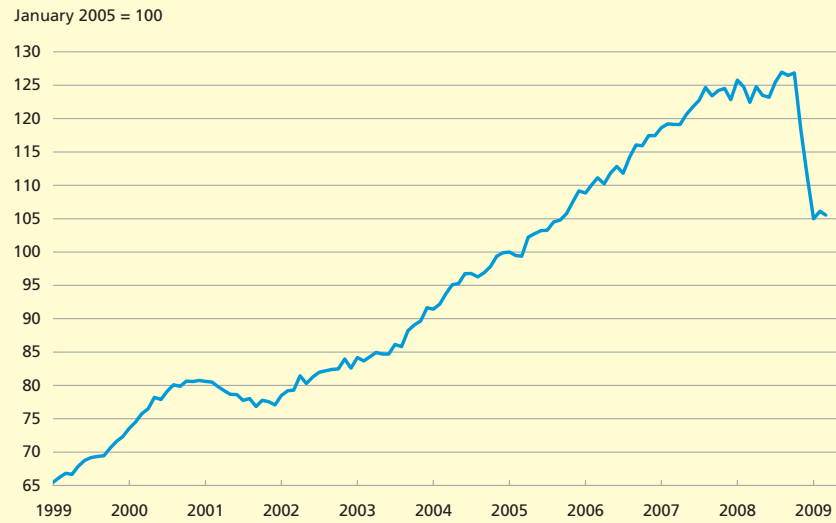
Since mid-2008, global trade has contracted to an extent not seen since the 1930s, cf. Chart 4. The downturn hit all major economies in one sweeping blow as a result of the strong international integration of trade. In the first months of 2009, global trade was approximately 15 per cent below the level one year earlier, having declined by around 6 per cent month-on-month from November 2008 to January 2009. In recent months world trade has stabilised.

Lower global demand in the 4th quarter of 2008 explains most of the decline in trade, but other factors have contributed to the unusually steep fall. According to the OECD¹, the first of these factors is globalisation, whereby the manufacturing chain extends across several countries. As foreign trade does not measure value added, this phenomenon inflates trade in good times and reduces it strongly in bad times.

Secondly, a widespread absence of trade credits² may have amplified the downward trend in the wake of general tightening of credit standards as a result of the financial crisis. The quantitative effect is, however, very difficult to assess.

DEVELOPMENT IN GLOBAL TRADE, 1999-2009

Chart 4



Source: Netherlands Bureau for Economic Policy Analysis, CPB.

¹ OECD, Economic Outlook, Interim Report, March 2009, Box 1.2.

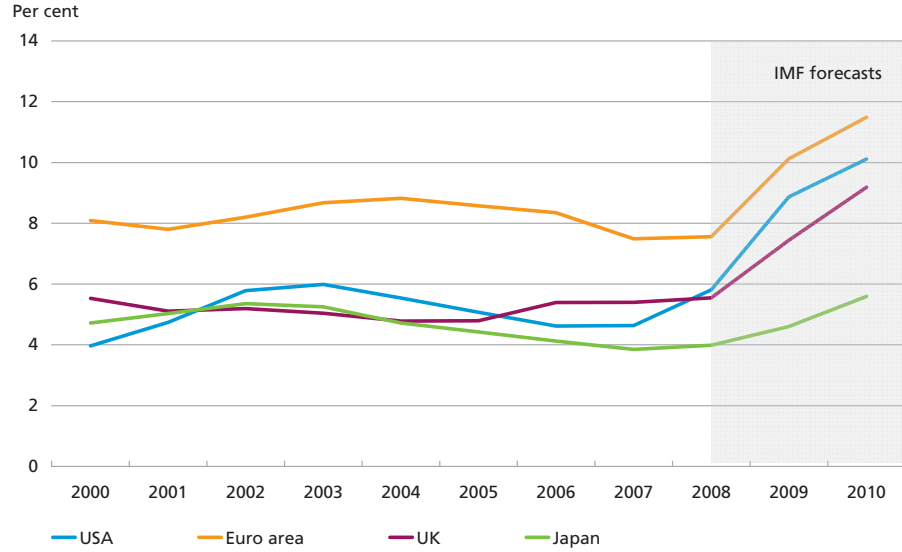
² Trade credits are widely used financial instruments that facilitate the exchange of goods between exporters and importers.

trialised world, and even when growth begins to pick up, unemployment will continue to rise, cf. Chart 5.

It is uncertain how soon trend growth can be restored, and to which extent potential growth has been reduced in connection with the crisis, including as a consequence of lower investments. In previous cases, economic recessions have been fairly long when coupled with financial crises. In addition, unwinding of the global imbalances requires a more

IMF FORECASTS OF UNEMPLOYMENT IN SELECTED COUNTRIES

Chart 5



Note: Unemployment in per cent of the labour force.
Source: IMF, World Economic Outlook database, April 2009.

sustained increase in the propensity to save in the US private sector. On the other hand, extensive measures have been taken synchronously around the globe in an attempt to restore the financial system and kick-start the economy.

At the G20 summit on 2 April, the participants agreed on a number of initiatives to strengthen the financial system, including that the quality and quantity of the banks' capital should be improved and that capital buffers should be built up in good times. The G20 countries also agreed that financial reporting rules, especially for valuation and provisions, should be strengthened. Moreover, it was decided to provide substantial funds to the IMF so that it can continue its lending programmes, cf. Box 2. Without credit facilities from the IMF, it would have been necessary to tighten economic policies even further in countries where capital inflows have come to a halt and exports have plunged. Finally, it was decided to allocate at least 250 billion dollars over the next two years to ensure access to trade credits.

Attention has centred on preventing more widespread use of trade barriers and other protectionist measures as a result of the economic crisis. In general, the world has avoided an actual wave of protectionist measures so far, and communiqués from all summits have emphasised the risks associated with increased protectionism. A few scattered protectionist initiatives have been seen, but on the whole a negative spiral of escalating protectionism, as evidenced in the wake of the Smoot-Hawley Tariff Act implemented in the USA in 1930, has been avoided so far.

During the financial crisis, the IMF has played a more visible role in the international financial system.

IMF lending during the crisis

Since October 2008, the IMF has extended large crisis loans to a number of its member countries. In Eastern Europe alone, loan commitments totalling 75 billion dollars have been made to seven countries.

Besides granting large loans, the IMF has updated its lending instruments and conditions in recent months. In particular, a precautionary facility, Flexible Credit Line (FCL), has been established, under which only countries with a track record of sound economic policies and successful implementation of the necessary reforms are eligible for loans. In addition, the limits for the ordinary loan instruments have been raised, and the structures for extra costs (fees and excess interest) on loans exceeding the limits have been simplified. The FCL has already proved to be popular, and since its introduction Mexico, Poland and Colombia have been granted loans totalling 78 billion dollars under this facility. The large demand for loans makes it necessary to allocate extra funds to the IMF for lending purposes.

Increase in IMF resources

There is broad international support for rapidly increasing the IMF's lending resources considerably. At the G20 summit, participants backed bilateral loans of 250 billion dollars to the IMF. In the medium term, these loans are to be incorporated into an extended New Arrangements to Borrow, NAB¹, loan agreement, which is to be made more flexible. The plan is for the NAB arrangement to be increased by up to 500 billion dollars, equivalent to a tripling of the IMF's lending capacity. The EU member states have voluntarily committed themselves to providing fast temporary support for the IMF's lending capacity by way of loans totalling 75 billion euro, approximately 100 billion dollars. The loans are contributed by EU member states whose currencies are sufficiently strong to be included in IMF transactions on the basis of these member states' quotas following the 2008 quota reform. Denmark's share will be 1.95 billion euro, equivalent to kr. 14.5 billion. In addition to the EU contribution of 75 billion euro, a loan of 100 billion dollars from Japan has already been adopted, as well as NAB loan commitments of 100 billion dollars from the USA, 10 billion dollars from Canada, 10 billion dollars from Switzerland and 4.5 billion dollars from Norway.

Beyond the general contribution of extra lending resources, there is international agreement to mobilise further funds for the IMF's concessional lending to low-income countries.

Furthermore, it has been discussed that the IMF should allocate Special Drawing Rights, SDRs, to member countries for a total of 250 billion dollars with a view to boosting international foreign-exchange reserves and making member countries more resilient to balance-of-payments problems. SDR is an international foreign-exchange-reserve asset based on a basket of currencies (dollar, euro, yen and pound sterling).

¹ The NAB arrangement comprises 26 countries, including Denmark, that make a total of 34 billion SDRs (53 billion dollars) available to the IMF. Under NAB, the IMF can potentially draw 367 million SDR (550 million dollars) on Danmarks Nationalbank. NAB has been activated once, in December 1998, in connection with a loan to Brazil. In this context the IMF requested 9.1 billion SDR, of which 2.9 billion SDR was used. Loans to the IMF under NAB are included in the foreign-exchange reserve in accordance with the IMF's balance-of-payments manual.

CONTINUED

Box 2

Countries that need "hard" currency may exchange SDRs with countries with excess international liquidity. Combined with previously adopted extra SDR allotments, this is estimated to increase Denmark's SDR allotment by approximately 1.4 billion SDRs, corresponding to approximately kr. 11.4 billion.

Reform of the IMF's governance structure

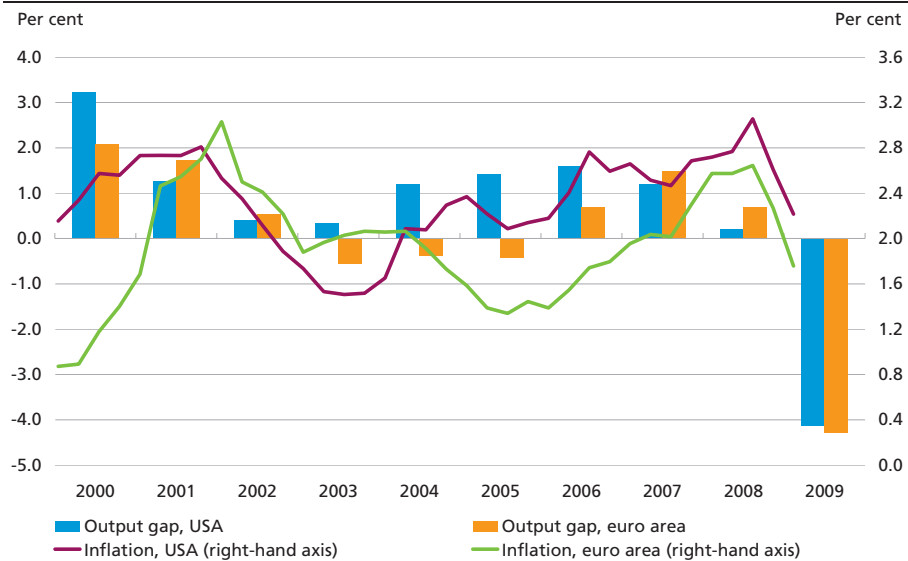
In connection with these financial measures it has also been agreed to initiate a major reform of the IMF's governance structure. This reform process should be viewed in light of, *inter alia*, the growing importance of the G20 summits and the wish of the large emerging market economies to have greater influence in the international financial institutions. In particular, the reform process brings forward the next review of IMF quotas (the member countries' ownership shares in the IMF) to January 2011. This can be expected to lead to further shifts in the distribution of quotas, as well as an increase in total quotas. At the same time, the IMF will consider other proposals for amending the Fund's governing bodies.

Price developments

Inflationary pressures continued to ease in the 1st half of 2009, and in several industrialised countries inflation is very low. In the USA, the annual rate of price increase was negative in March for the first time since 1955, and euro area inflation was 0 per cent in May. The trend in inflation broadly reflects the development in energy prices over the last year,

INFLATION AND OUTPUT GAPS IN THE USA AND THE EURO AREA

Chart 6



Note: Quarterly observations for *inflation*, annual observations for *output gaps*. Output gaps for 2009 are IMF estimates.

Source: IMF, World Economic Outlook database, April 2009, and Reuters EcoWin.

which will continue to exert considerable downward pressure on inflation until the summer of 2009. Stripped of the impact of energy prices, inflation remains above 1.7 per cent in the USA and the euro area, but the increased spare capacity in the economy, measured by the large negative output gaps, has also contributed to keeping inflation at bay in recent months, cf. Chart 6.

Commodity prices have begun to rise in recent months. The price of a barrel of Brent crude oil was 68 dollars at the beginning of June, compared with approximately 40 dollars at the start of the year, and metal prices have also increased over the past few months, but from a low level. The price of gold remains high.

THE DANISH ECONOMY: MONETARY AND EXCHANGE-RATE CONDITIONS

In recent months, the krone has been stable vis-à-vis the euro at close of its central rate in ERM II.

On 2 April 2009, the ECB lowered the rate of interest on its main refinancing operations by 0.25 per cent to 1.25 per cent. Following suit, Danmarks Nationalbank reduced its lending rate and rate of interest on certificates of deposit by 0.25 per cent to 2.00 per cent with effect from 3 April. The discount rate and current-account rate were reduced by 0.25 per cent to 1.75 per cent.

The ECB lowered its rate of interest by a further 0.25 per cent, to 1.00 per cent, on 7 May 2009. Against that background, Danmarks Nationalbank reduced its lending rate and rate of interest on certificates of deposit by 0.35 per cent to 1.65 per cent with effect from 11 May. The discount rate and current-account rate were reduced by 0.35 per cent to 1.40 per cent. The spread between Danmarks Nationalbank's lending rate and the ECB's rate of interest on its main refinancing operations (the monetary-policy interest-rate spread between Denmark and the euro area) thus narrowed from 0.75 per cent to 0.65 per cent. Danmarks Nationalbank's interest rates were reduced by more than those of the ECB due to continued purchases of foreign exchange in the market.

On 4 June 2009, the ECB decided to keep its key interest rate unchanged. On the basis of foreign-exchange purchases in the market, Danmarks Nationalbank lowered its lending rate by 0.1 per cent to 1.55 per cent with effect from 8 June 2009. At the same time, the rate of interest on certificates of deposit was reduced by 0.2 per cent to 1.45 per cent, while the discount and current-account rates were reduced by 0.2 per cent to 1.20 per cent. The monetary-policy interest-rate spread to the euro area thus narrowed from 0.65 per cent to 0.55 per cent.

The interest-rate reductions introduced a margin of 0.1 per cent between the lending rate and the rate of interest on certificates of deposit, the purpose being to give banks and mortgage-credit institutes a greater incentive to exchange liquidity in the money market rather than using Danmarks Nationalbank's facilities.

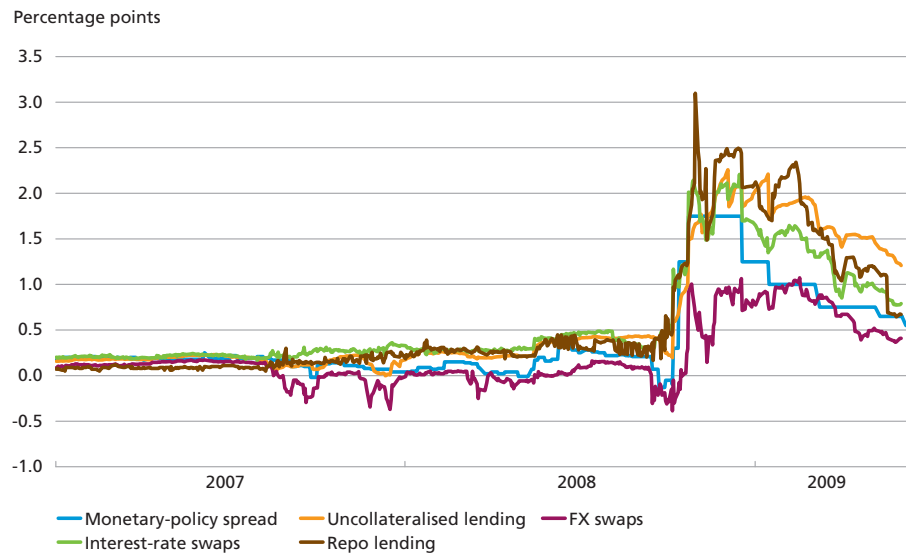
Since late 2008, Denmark has generally seen an inflow of capital in connection with portfolio investments. Danmarks Nationalbank has regularly intervened to purchase foreign exchange for kroner, for a total of kr. 78 billion up until end-May 2009. In addition, the government has raised foreign loans for kr. 31 billion with the foreign-exchange reserve in mind. The foreign-exchange reserve was kr. 325 billion at the end of May 2009.

The spread between money-market interest rates in Denmark and the euro area has decreased in connection with the gradual narrowing of the monetary-policy interest-rate spread since late 2008, cf. Chart 7.

On 7 May 2009, the ECB decided to maintain its deposit rate at 0.25 per cent, while the marginal lending rate was lowered by 0.5 per cent to 1.75 per cent, thereby reducing the corridor around the main refinancing rate from 2 per cent to 1.5 per cent.

MONETARY-POLICY INTEREST-RATE SPREADS AND 3-MONTH INTEREST-RATE SPREADS BETWEEN DENMARK AND THE EURO AREA

Chart 7



Note: The monetary-policy interest-rate spread is the difference between Danmarks Nationalbank's lending rate and the ECB's marginal rate in the main refinancing operations. In October 2008, the ECB switched from allotting a given amount of liquidity at a variable rate to full allotment at a fixed rate. The interest-rate spread for uncollateralised lending is the Cibor-Euribor spread. The interest-rate spread for FX swaps is determined on the basis of the forward premium on FX swaps between kroner and euro. The interest-rate spread for interest-rate swaps is determined on the basis of the 3-month interest rate in interest-rate swaps with the overnight interest rate. The most recent observations are from 3 June 2009 for the 3-month interest-rate spread and with effect from 8 June 2009 for the monetary-policy spread.

Source: Reuters EcoWin and Danmarks Nationalbank.

In this connection it was announced that the ECB's long-term operations would be supplemented with fixed-rate refinancing operations with a maturity of one year and full allotment. In the first operation, announced on 23 June 2009, the rate will be the fixed allotment rate in the main refinancing operations. In subsequent operations, the fixed rate may include a spread in addition to the rate in the main refinancing operations, depending on the circumstances at the time.

Finally, the ECB announced that it will begin to purchase covered bonds denominated in euro and issued in the euro area for around 60 billion euro.

The yield spreads between covered bonds and government bonds in the euro area widened considerably in the autumn of 2008 as the financial crisis intensified. The same applied to the yield spread between mortgage-credit and government bonds in Denmark, where the agreement on financial stability between the Danish Insurance Association and the Ministry of Economic and Business Affairs was concluded with a view to ensuring market stability and preventing systematic divestment of Danish mortgage-credit bonds.¹ The Danish yield spread has subsequently narrowed.

Since the beginning of March, Danmarks Nationalbank has held six dollar auctions and two euro auctions under the swap lines agreed with the Federal Reserve and the ECB in the autumn of 2008. The ECB and the Federal Reserve fix and receive the interest on the loans in their respective currencies. The demand for loans in dollars and euro in the auctions has been lower than the supply, and the foreign-exchange loans granted to banks and mortgage-credit institutes under the swap lines have declined from kr. 71 billion at the beginning of March to kr. 34 billion at end-May, cf. Chart 8.

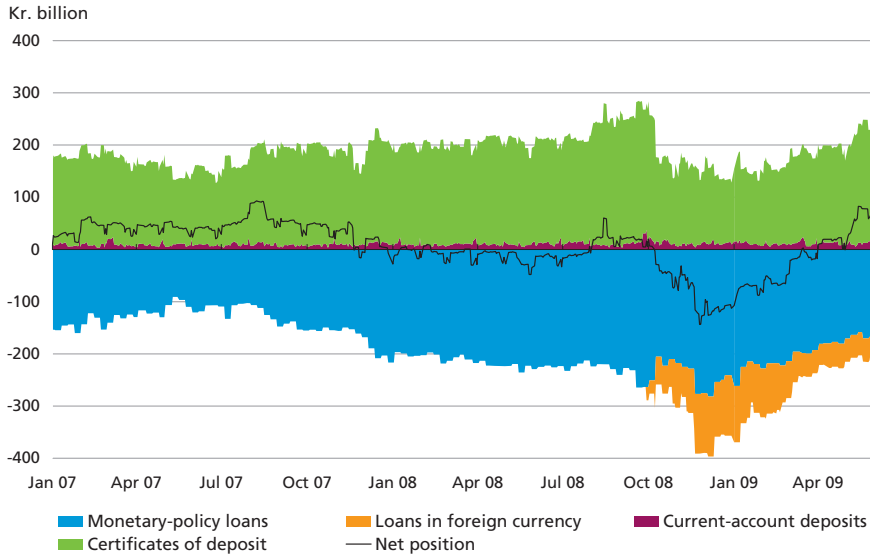
Demand in Danmarks Nationalbank's dollar auctions remains high, considering that the rate of interest on dollar loans from Danmarks Nationalbank has been high in relation to the general market rate. This indicates that a few monetary-policy counterparties are still finding it difficult to obtain credit from foreign banks, which makes it more expensive to borrow dollars in the market than in Danmarks Nationalbank's auctions.

All other things being equal, government capital injections into banks and mortgage-credit institutes under Bank Rescue Package II increases the net position of banks and mortgage-credit institutes vis-à-vis Danmarks Nationalbank. At the end of 2008, their net position was reduced considerably in connection with extraordinary issuance of government

¹ For further details, see Danmarks Nationalbank, *Monetary Review*, 4th Quarter 2008, p. 36-37.

NET POSITION OF BANKS AND MORTGAGE-CREDIT INSTITUTES VIS-À-VIS
DANMARKS NATIONALBANK

Chart 8



Note: The banks' and mortgage-credit institutes' loans in foreign currency from Danmarks Nationalbank are not included in the net position vis-à-vis Danmarks Nationalbank. Loans in foreign currency are granted by Danmarks Nationalbank to banks and mortgage-credit institutes on the basis of swap lines with the Federal Reserve and the ECB. The most recent observations are from 29 May 2009.

Source: Danmarks Nationalbank.

bonds, the proceeds of which were deposited to the central government's account at Danmarks Nationalbank.

With effect from 1 June 2009, Danmarks Nationalbank has adjusted the temporary collateral basis for credit facilities at Danmarks Nationalbank. Until 30 December 2013, banks and mortgage-credit institutes may also pledge government-guaranteed bank bonds and senior debt (junior covered bonds) issued by credit institutions as collateral.

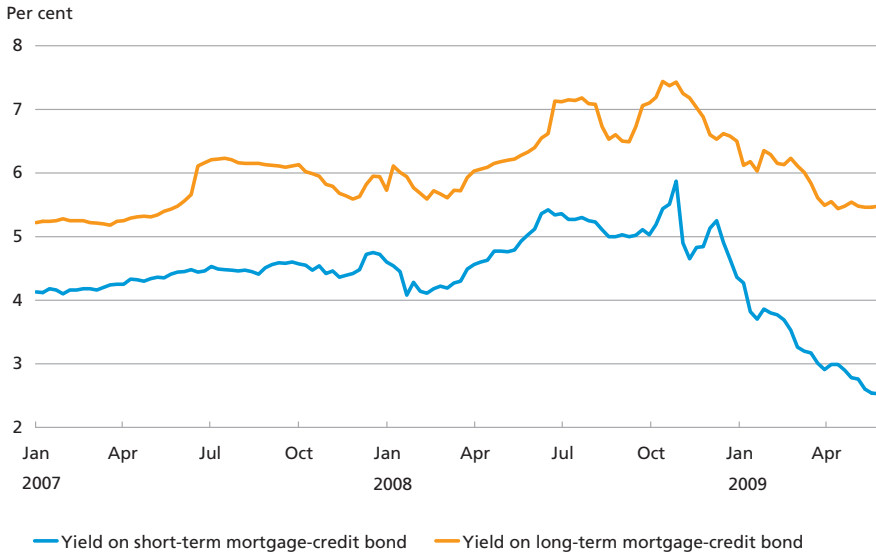
The yield on Danish 10-year government bonds has risen by around 0.4 per cent since the beginning of March, to 3.8 per cent at end-May. The spread to corresponding German bonds narrowed by 0.2 per cent, to 0.3 per cent, over the same period.

Retail interest rates, mortgage-credit yields and credit developments

The yield on Danish mortgage-credit bonds has declined, cf. Chart 9. This particularly applies to short-term bonds, which have fallen against the background of the reduction in monetary-policy interest rates. In April, adjustable-rate loans accounted for 83 per cent of new lending (gross) for owner-occupied housing and summer cottages, compared with around 50 per cent in October 2008, when mortgage-credit yields began to show a downward trend.

MORTGAGE-CREDIT BOND YIELDS

Chart 9

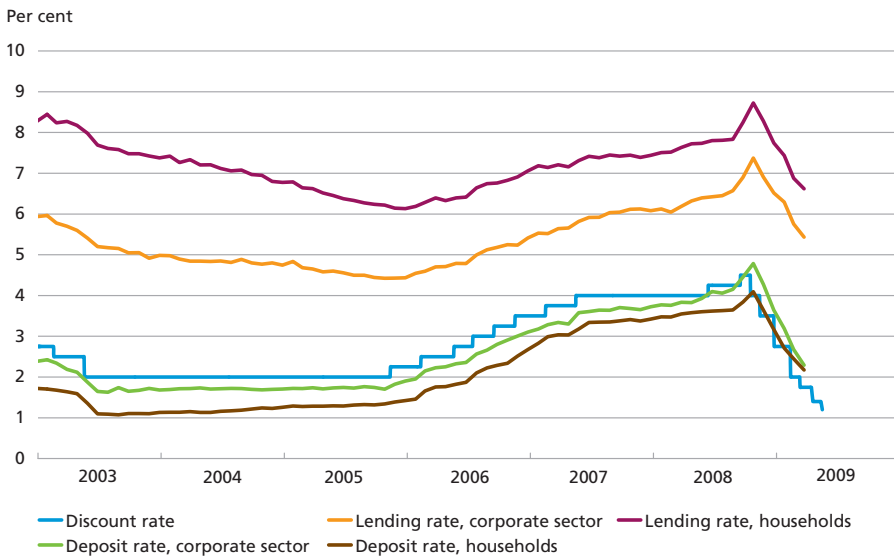


Note: Weekly data. The yields on mortgage-credit bonds are average yields, the short-term yield being based on 1-and 2-year non-callable mortgage-credit bonds, the long-term yield on 30-year callable mortgage-credit bonds. The most recent observations are from calendar week 22, 2009.
 Source: Association of Danish Mortgage Banks.

The lower monetary-policy interest rates have also made it less expensive for banks to borrow from Danmarks Nationalbank, which has to some extent been reflected in their retail rates, cf. Chart 10.

THE DISCOUNT RATE AND THE BANKS' AVERAGE INTEREST RATES

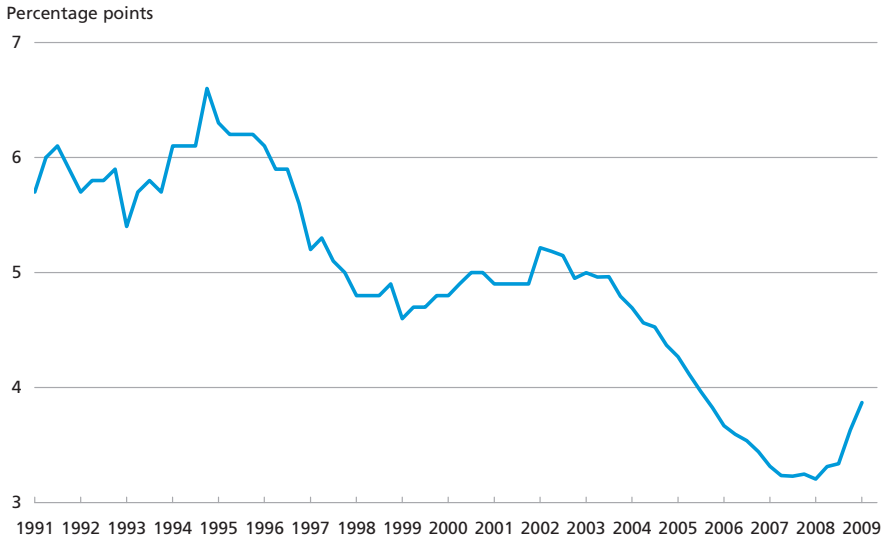
Chart 10



Note: The discount rate is stated on a daily basis. Other interest rates are monthly averages for outstanding business. The most recent observations are from April 2009 for the banks' interest rates and 8 June for the discount rate (decision of 4 June).
 Source: Danmarks Nationalbank.

THE BANKS' INTEREST-RATE MARGINS SINCE 1991

Chart 11



Note: Quarterly data. The most recent observation is from the 1st quarter of 2009. The banks' average lending rate has been adjusted for data breaks back in time. The interest-rate margin is calculated as the difference between the banks' average lending and deposit rates on outstanding business within general government, non-financial corporations and households. For a discussion of the development in the interest-rate margin over time, see Maria Carlsen and Charlotte Franck Fæste, The Pass-Through from Danmarks Nationalbank's Interest Rates to the Banks' Retail Interest Rates, Danmarks Nationalbank, *Monetary Review*, 2nd Quarter 2007.

Source: Danmarks Nationalbank.

Since the financial crisis intensified in the autumn of 2008, the interest-rate margin has widened. This has also been the case in previous periods when bank earnings have been under pressure, e.g. in the early 1990s, cf. Chart 11.

The widening of the interest-rate margin reflects how the financial crisis has generally made it more expensive for banks to obtain financing in the money and capital markets. In addition, payments relating to the government guarantee under Bank Rescue Package I may run into kr. 35 billion. The financial crisis has also led to increased write-downs and losses, primarily on exposures with financial institutions and corporate customers, while write-downs on households have remained modest.¹

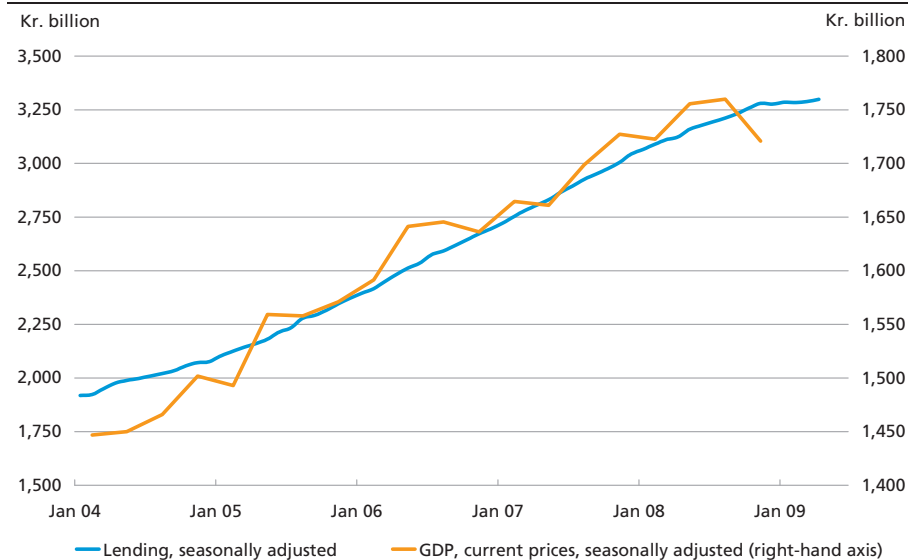
Bank Rescue Package II reduces the risk that sound projects cannot obtain financing from banks and mortgage-credit institutes. Most of the institutions are expected to apply for funding under this Package. The deadline for applications is 30 June 2009.

Seasonally adjusted bank lending to households and the corporate sector has decreased recently. In contrast, lending by mortgage-credit institutes continues to rise, so that total lending by banks and mortgage-

¹ See Danmarks Nationalbank, *Financial stability 2009, 1st half*, for a further analysis of bank profits.

GDP AND THE BANKS' AND MORTGAGE-CREDIT INSTITUTES' LENDING TO HOUSEHOLDS AND NON-FINANCIAL CORPORATIONS

Chart 12



Note: Nominal GDP. Annualised quarterly data for GDP. Monthly data for lending. The most recent GDP observation is from the 4th quarter of 2008. The most recent lending observation is from April 2009.
Source: Statistics Denmark and Danmarks Nationalbank.

credit institutes has been more or less unchanged over the past few months, cf. Chart 12.

Corporate lending is often priced on the basis of a reference interest rate such as Euribor or Cibor, depending on the currency, plus an enterprise-specific premium. The spread between uncollateralised money-market interest rates in kroner and euro widened in the autumn and has remained in the interval 1-2.5 per cent since then, cf. Chart 7. This has increased the demand for loans in euro, which now account for almost 20 per cent of the banks' total lending to non-financial corporations.

The weak credit growth should be viewed against the backdrop of lower demand for loans as a result of the economic slowdown. This is also reflected in Danmarks Nationalbank's most recent lending survey, in which the banks reported that demand for loans fell for both the corporate sector and households from the 4th quarter of 2008 to the 1st quarter of 2009. The mortgage-credit institutes generally reported an unchanged level of demand from customers.

According to the survey, the banks and mortgage-credit institutes tightened their credit policies further in the 1st quarter of 2009, citing mainly the more gloomy risk outlook as the underlying reason. Most institutions report that tightening has been implemented by way of higher margins and fees and more stringent collateral requirements.

In view of the economic slowdown, it is natural that the banks and mortgage-credit institutes have tightened their credit standards in order to mitigate the risk of losses on loans. It does not follow from the lending survey that credit conditions have been tightened to an extent that creditworthy projects, given the economic environment, cannot obtain financing from banks and mortgage-credit institutes.

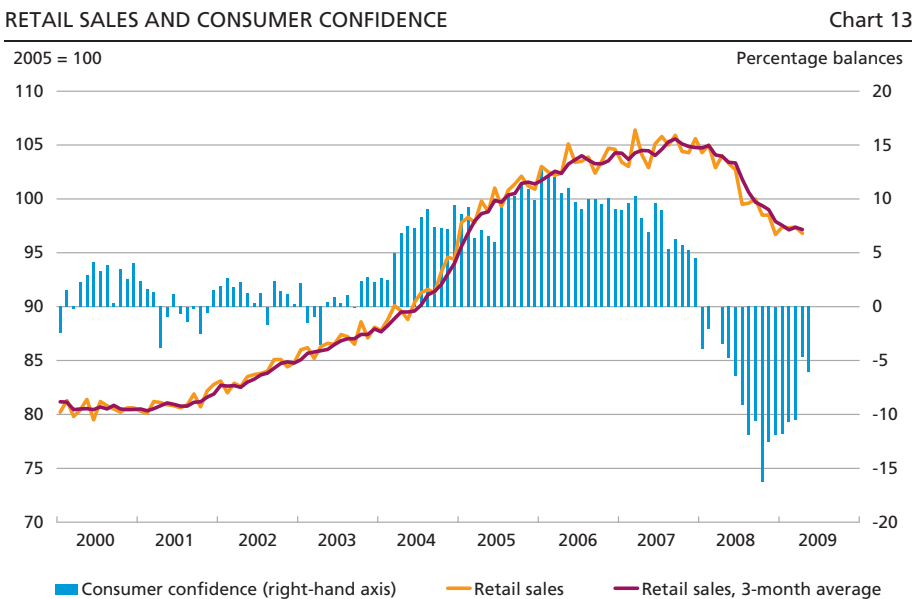
Earlier in the year, the deadlines for payment of VAT, income tax and labour-market contributions by business enterprises were postponed, and the plan was to re-introduce the normal deadlines from August. In May it was decided to ease corporate liquidity further by gradually re-introducing the normal deadlines from August to December.

THE DANISH ECONOMY: REAL ECONOMY

Economic activity

Following strong deterioration in the latter part of 2008, several indicators for the Danish economy point to stabilisation over the last few months, but the trend is not clear. For 2009 overall, GDP is predicted to fall by 2.5 per cent. Unemployment is expected to continue to rise for some time yet.

In the first four months of 2009, retail sales were 0.6 per cent lower than in the 4th quarter of 2008. The index flattened out as compared with the clear downward trend throughout most of 2008, cf. Chart 13.



Note: The most recent observation is from April 2009 for retail sales and May 2009 for consumer expectations.
 Source: Statistics Denmark.

Sales of passenger cars were flat in the first four months of the year, at a level almost 40 per cent lower than in the same period of 2008. Imports for consumption have fallen less than imports for the corporate sector. National accounts data reaching into 2009 is not available yet. Indicators point to a further fall in private consumption in the 1st quarter, albeit presumably less pronounced than in the previous quarter. Coupled with the fact that incomes are still rising steadily, this signals that the savings ratio is increasing.

Consumer confidence has improved appreciably over the last two months, but the indicator remained negative in May. Above all, consumers now take a more optimistic view of the Danish economy.

Industrial production, which is to a large extent for export, fell strongly in the 1st quarter. Expectations within the sector remain very negative, but have improved marginally during the spring.

Employment expectations in building and construction fell until March, but have been flat for the last two months, as has the composite business indicator. The service sector, on the other hand, is a bit more optimistic when it comes to sales opportunities, and both turnover and employment expectations have become less pessimistic than at the beginning of the year.

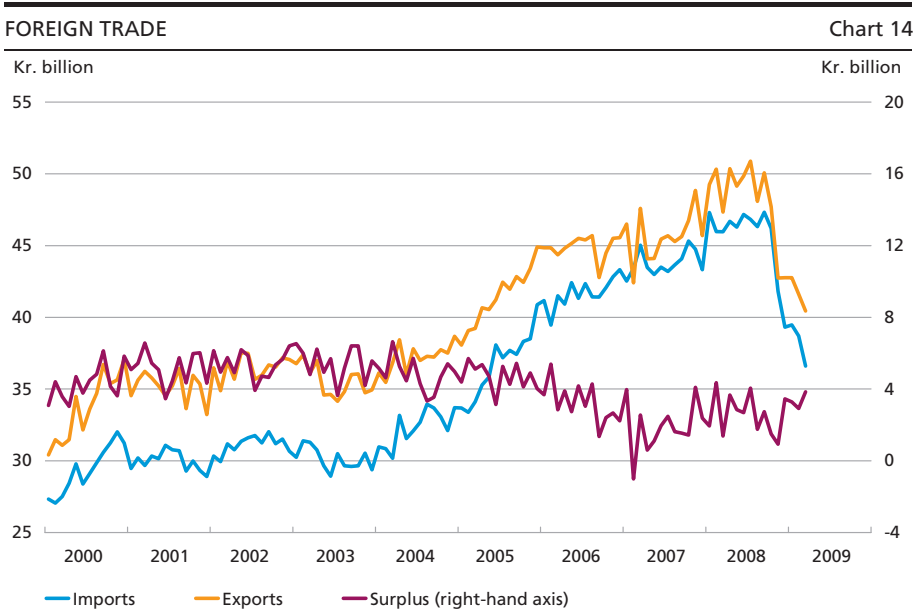
Foreign trade and balance of payments

World trade has been severely hit by the global recession and consequently export-market growth is negative. Exports have been declining since September 2008 and were 16 per cent lower in March than one year earlier, cf. Chart 14.

The situation in the export markets, which is important in terms of sales opportunities for the industrial sector, remains very negative. This view is supported by a steadily decreasing order intake from export markets. However, the fall in world trade seems to have ceased in recent months. Preliminary data indicates that Denmark gained market shares in its export markets in 2008 compared with 2007.

The development in Danish exports varies considerably from market to market. A comparison of March 2009 with March 2008 shows that exports to the German market fell by almost 16 per cent, while the declines in exports to the UK and Sweden were 22 and 27 per cent, respectively. These three countries are Denmark's largest export markets. In contrast, exports to the USA and China have risen over the last year, primarily due to increased sales of wind turbines and pharmaceutical products.

The diverging trends in exports from market to market are not only attributable to differences in domestic demand in these countries, but



Note: Current prices. The most recent observations are from March 2009.
Source: Statistics Denmark.

also to factors such as exchange rates. Both the Swedish krona and the pound sterling have depreciated vis-à-vis the Danish krone, giving these countries a competitive edge in the short term. Moreover, wage inflation has been higher in Denmark than in competitor countries.

Imports fell more rapidly than exports in the 1st quarter, and the trade balance continued to show a surplus, in the range of kr. 3-4 billion per month. This is slightly higher than in the latter part of 2008.

The current account of the balance of payments has been marginally negative in the last three months, but less so than in the same period of 2008. The most recent 12-month data, for the period until March, shows a total surplus of kr. 43 billion, mainly stemming from trade in services, including sea freight, and investment income.

The surplus on sea freight has declined since last autumn, partly on account of lower freight rates, but presumably also because volumes have decreased. Investment income comprises the return on Danish foreign investments, both in real capital and securities, less the return on foreign investments in Denmark. This item, which showed a surplus of kr. 33 billion in the 1st quarter, may be adjusted when the financial statements for 2008 are incorporated into the statistics.

The housing market

The housing market still shows no clear signs of a recovery. The prices of single-family and terraced houses declined throughout 2008. This trend

has continued into 2009, and in the 1st quarter the price per square metre was 10 per cent lower than one year earlier according to the Association of Danish Mortgage Banks. The largest falls have been seen on Zealand, particularly in the Copenhagen area, while they have been more moderate in other parts of the country. According to the statistics from the Association of Danish Mortgage Banks, the prices of owner-occupied flats have taken an even sharper downturn.

Sales of housing have declined over the last year. In the 1st quarter of 2009 seasonally adjusted sales were below 6,000, the lowest number since the statistics were introduced in 1995. The average for the period is 10,000 sales per quarter. The slowdown in the housing market is accentuated by the fact that while sales are low, the number of homes for sale is high. This has increased the time on market to around 7 months, compared with 4 months in 2005-06.

The tough times in the housing market are also reflected in an increasing number of enforced sales. In March the seasonally adjusted number of enforced sales announced was 282. Nevertheless, the level remains low in a long-term perspective. The average for the last 30 years is 685 enforced sales per month, but the number fluctuates considerably.

Looking ahead, the housing market is buoyed up by sizable growth in disposable incomes for people in employment and a low level of interest rates, particularly at the short end of the curve. Falling house prices and interest rates have also considerably reduced the cost of purchasing a home. On the other hand, unemployment is rising, and jobs are less secure. Some potential buyers are biding their time, expecting house prices to fall further. Moreover, a large supply bulge must be eliminated before the market can seriously begin to pick up again, cf. Box 3.

Labour market and wages

Since unemployment bottomed out at 46,700 in June 2008, it has risen month by month, by more than 10,000 per month in the last two months. In April seasonally adjusted unemployment was 92,800, equivalent to an unemployment rate of 3.3 per cent. Judging from the number of notifications, which peaked in January, the rate of unemployment growth can be expected to fall in the coming months. The industrial sectors exposed to competition have taken the brunt of the blow, but the building and construction sector has also been affected, while domestically oriented service sectors are faring better, cf. Chart 16.

The pronounced reversal in unemployment figures reflects weak demand in Denmark and abroad, as well as the fact that unemployment had reached a very low level. The international recession has amplified a change that would have occurred in any case.

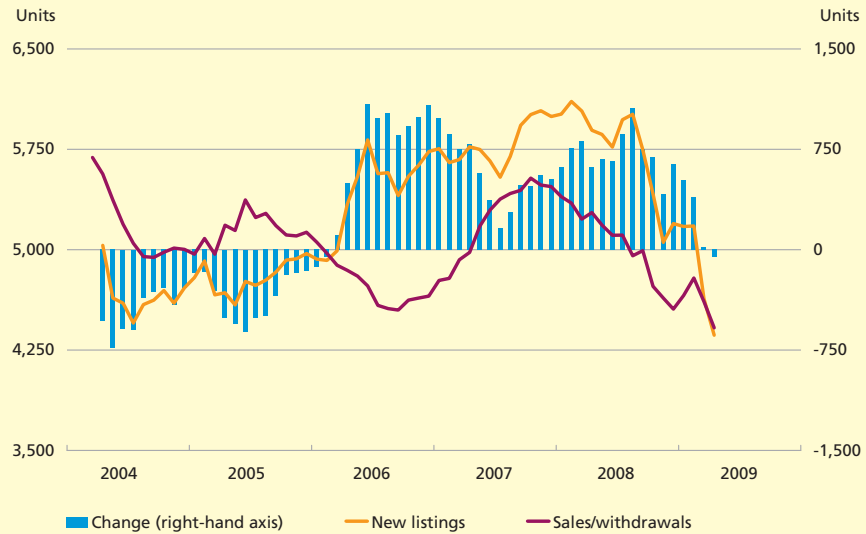
SUPPLY OF HOMES FOR SALE – IS THE TIDE TURNING?

Box 3

The sluggish housing market is reflected in low turnover and a large number of homes for sale. The number of single-family and terraced houses on the market has more than doubled since the beginning of 2006, to more than 40,000 in April 2009.

CHANGE IN SUPPLY OF SINGLE-FAMILY AND TERRACED HOUSES FOR SALE

Chart 15



Note: Monthly observations for the whole of Denmark. 3-month moving average. The seasonal pattern for new listings is determined indirectly. The most recent observations are from April 2009.
 Source: RealViewTNI and own calculations.

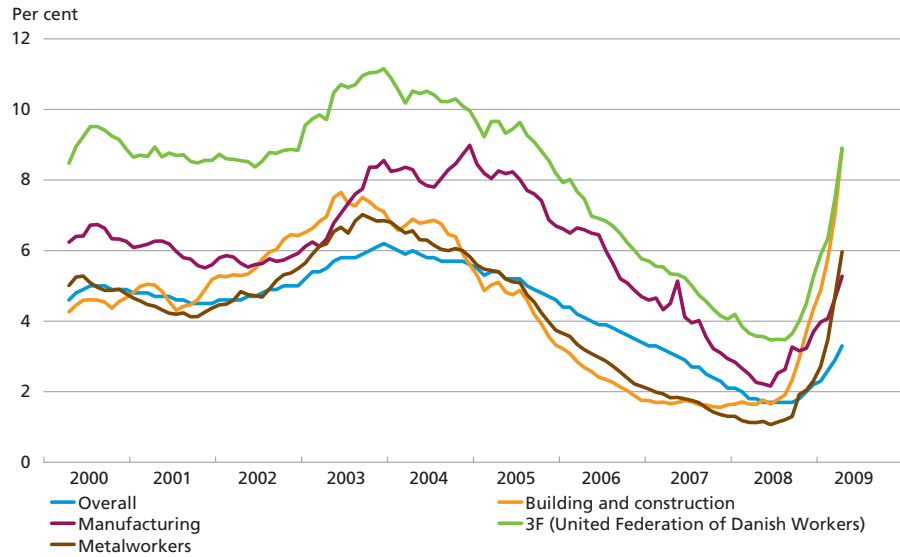
Extensive housing construction in the boom years cannot explain the increased number of homes on the market. The supply to a large extent reflects that more existing homes are being put up for sale.

While turnover and prices have fallen since the spring of 2006, net new listings continue their rising trend, cf. Chart 15. Taking into account the usual spring effect on the supply, a slight fall can, however, be observed in recent months, particularly in the Copenhagen area. The increased supply has exerted downward pressure on prices. If the housing market is to pick up, the supply of unsold homes must be reduced, preferable through increased sales rather than fewer new listings. In the market for owner-occupied flats, the number of homes for sale has fallen over the last year, but this is due to fewer new listings, not increased sales.

The level of unemployment in Denmark remains low in a historical perspective and when compared with most other countries. Pressure on the private-sector labour market has eased and the number of business enterprises reporting a shortage of labour is approaching zero. In some areas, notably the public sector, it is still difficult to attract the necessary qualified labour.

UNEMPLOYMENT BROKEN DOWN BY UNEMPLOYMENT FUNDS

Chart 16



Note: Data for the last 6 months is preliminary and has been adjusted for the difference between preliminary and final data. The most recent observations are from April 2009.

Source: Statistics Denmark and own seasonal adjustment.

The high wage inflation in Denmark in the last phase of the boom has moderated in recent quarters – to just over 4 per cent in the 1st quarter in the sectors covered by agreements with the Confederation of Danish Employers. In the public sector, substantial wage increases were seen in the 1st quarter. Wage increases in both the public and the private sectors are considerably higher than the level of consumer price inflation.

Private-sector wage inflation is highest within services and lower within manufacturing and construction, which is consistent with unemployment trends in the respective sectors. Preliminary data from local industrial bargaining in the spring points to further moderation of the rate of wage increase in the sectors exposed to competition. A larger-than-usual share of employees have not been given any raise at all. A wide spread among business enterprises points to flexible wage formation, so that wage increases are based on corporate affordability.

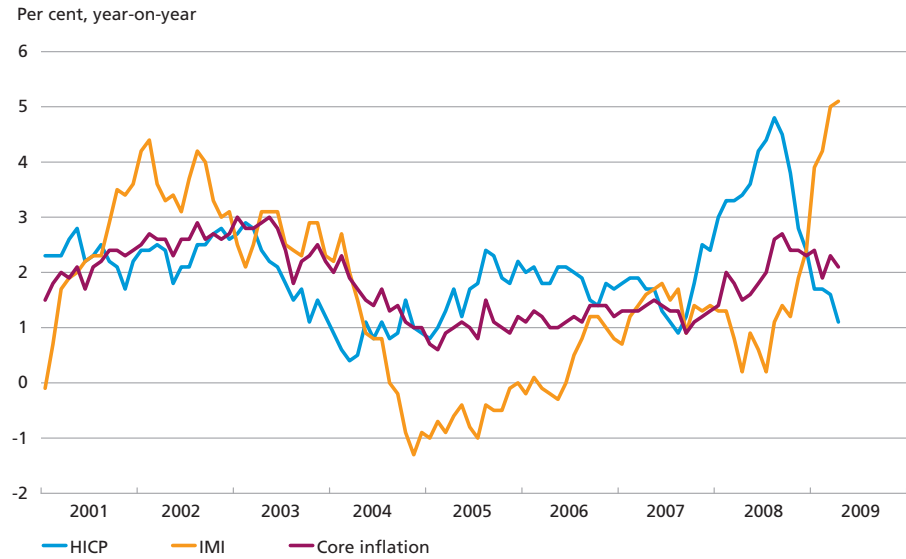
Prices

Measured by the Harmonised Index of Consumer Prices, HICP, prices rose by 1.1 per cent in April. The rate of increase has been declining in the first months of the year, cf. Chart 17, mainly on account of falling energy prices and a more subdued development in food prices.

Domestic market-determined inflation, IMI, on the other hand has risen sharply in recent months, to 5.2 per cent in April. The reason is that

PRICE DEVELOPMENTS

Chart 17



Note: The most recent observations are from April 2009. *HICP* is the EU's Harmonised Index of Consumer Prices. *IMI* is a measure of domestic market-determined inflation. *Core inflation* is the consumer price index stripped of energy and food.

Source: Statistics Denmark.

falling import prices have not been fully passed on to consumers, but have initially boosted profits. This is a typical pattern, which was also seen – albeit in the reverse direction – in the preceding period of rising import prices. Historically, *IMI* has fluctuated more than the overall consumer price index.

The survey of consumer expectations shows that the households' inflation expectations have fallen in line with actual inflation. The households do not expect price developments to moderate further in the coming year. This is likely to be reflected in the expected rate of wage increase.

Year-on-year inflation in the euro area was zero in May. Lower inflation in the euro area than in Denmark is primarily attributable to lower capacity pressure. This is reflected in lower core inflation, i.e. consumer prices stripped of energy and food.

Economic policy

Economic policy in Denmark is highly expansionary. Denmark's National Bank's discount rate is at an all-time low, and accommodative fiscal policy makes a positive contribution to growth. Public finances are rapidly deteriorating. After a period of large surpluses, the Ministry of Finance now expects a budget deficit of 1.3 per cent of GDP in 2009, rising to

more than 3 per cent of GDP in 2010. Deficits of this magnitude have not been seen since the mid-1990s.

The good starting point with relatively low government debt has been used to ease fiscal policy in an attempt to curb the rise in unemployment. The impact of several of the measures already adopted remains to be seen. The surging budget deficit limits the scope for and expediency of further expansionary measures.

Right now central and local government are negotiating next year's budgets. Local councils are calling for further increases in local government investment beyond what has already been agreed.

Further fiscal-policy relaxation must be subsequently recouped by way of tightening – in addition to the needs already existing – if fiscal sustainability is to be maintained.

Experience shows that it is difficult to conduct countercyclical fiscal policy in good times. This was evident during the most recent upswing from 2004 to 2007, when fiscal policy was expansionary in spite of signs of overheating in several sectors of the economy, leading to high wage inflation and loss of competitiveness. It is not prudent continuously to pursue expansionary fiscal policy. Since the millennium rollover, Denmark's overall competitiveness has deteriorated by 25-30 per cent as a result of weaker exchange rates in the countries it trades with, excess wage increases in Denmark and weak productivity development.

During the boom, unemployment fell to a level significantly below its structural level, which is currently estimated to be 100,000-120,000. This has contributed to excess wage increases compared with those in competitor countries and has eroded competitiveness by making Danish goods more expensive than those of its trading partners. In the longer term, this will reduce the number of jobs and create significant imbalances in the economy. Bringing Danish wage increases more in line with those of competitor countries may require a period with unemployment above the structural level. Reforms to increase the supply of labour and flexibility in the labour market may permanently raise the level of employment.

To ensure that the overall economy balances, including to ensure employment in a slightly longer perspective, Danmarks Nationalbank believes that at present restraint should be shown in terms of introducing further fiscal relaxation.

Establishment of VP Subsidiary in Luxembourg

INTRODUCTION

Last year, VP Securities A/S, VP, established a central securities depository, CSD, in Luxembourg, VP Lux S.à r.l. The primary objective was to give Danish banks and mortgage-credit institutes access to issue euro-denominated bonds in the euro area. This enables investors to raise liquidity in euro against securities issued by Danish issuers in VP Lux since such securities are eligible as collateral to central banks in the euro area.

At the end of May 2009, bond issuance in VP Lux amounted to just over 15 billion euro. Since these securities are as a main rule quoted on NASDAQ OMX Copenhagen, it is Danmarks Nationalbank's task to accept and enter the individual securities on the list of eligible assets of the European Central Bank, ECB. This task will be performed as soon as Banque Centrale du Luxembourg, BCL, has notified Danmarks Nationalbank that BCL and VP have the operational framework in place.

This article outlines the process of establishing VP Lux, followed by an account of the ECB's credit assessment framework and the acceptance procedure for the individual issues as well as their eligibility as collateral.

ESTABLISHMENT OF VP LUX

In principle, issuance of euro-denominated securities in VP meets the ECB's rules for asset eligibility as described below if the securities are transferred to the euro area via links between central securities depositories. Consequently, for several years VP and Danmarks Nationalbank operated with several models to meet the ECB's eligibility criteria whereby securities issued in VP would become eligible as collateral in the euro area. Since the model that was acceptable to the Eurosystem was difficult to apply, in 2007 VP began to look into the opportunities of establishing a subsidiary in the euro area. The Board decided to establish a CSD in Luxembourg. Operations were to be managed from Denmark to minimise costs, and most of the operations of VP Lux would thus be outsourced to VP.

On 19 December 2008, the ECB announced that the Governing Council had approved VP Lux. This means that securities issued in VP Lux are eligible as collateral to Eurosystem central banks. The lengthy approval procedure can be attributed to differences in the legal basis for issuance of securities in Denmark and Luxembourg.

Following approval by the Governing Council, BCL and VP Lux have been working on integrating the latter into the Eurosystem's Correspondent Central Banking Model, CCBM, for cross-border collateralisation. Meanwhile, Danmarks Nationalbank has implemented a system for adding these securities to the ECB's list of eligible assets.

By early June 2009, all procedures between BCL and VP Lux had been established and thoroughly tested, although some documentation issues remain. Once they are finalised, Danmarks Nationalbank will enter VP Lux issuance on the ECB's list.

ACCEPTANCE PROCEDURE UNDER THE ECB'S CREDIT ASSESSMENT FRAMEWORK

The principal eligibility criteria for bonds are that they must be issued by a creditworthy issuer resident in the European Economic Area, EEA, i.e. the EU, Norway, Iceland and Liechtenstein, or a non-EU G10 country, i.e. Canada, Japan, Switzerland or the USA. In addition, the bonds must be denominated in euro and located in the euro area to ensure that forced realisation is subject to the law of a euro area member state. Furthermore, the bonds must be admitted to trading on a regulated market or a non-regulated market approved by the ECB. NASDAQ OMX Copenhagen is a regulated market.

The criterion concerning a high credit standard is defined as a credit assessment of at least "single A"¹. For long-term debt this corresponds to at least "A-" from Fitch Ratings and Standard & Poor's, "A3" from Moody's and "AL" from DBRS. In the absence of a credit assessment of the individual issuance, the criterion is instead applied to the long-term debt of the issuer or guarantor, if any. In the event of several, possibly conflicting, assessments of an issuer, the issuer may use the most favourable one. Under the ECB rules, debt beyond 370 days is classified as long-term debt, and a credit assessment of long-term debt may be applied to short-term debt.

Compared with Danmarks Nationalbank's rules, the ECB's eligibility criteria are broader as they do not include requirements concerning sector of issuer. Consequently, corporate bonds, including bank bonds, are

¹ <http://www.ecb.int/paym/coll/eliss/ratingscale/html/index.en.html>.

eligible in the Eurosystem's credit operations. However, the ECB does not accept bonds from a bank issued by that bank or close links, i.e. institutions in which the bank owns at least 20 per cent of the capital or vice versa. Exceptions apply if bonds meet the criteria of Article 22(4) of the UCITS Directive, including the requirement for priority in the event of liquidation, or if the bond holders are protected by similar statutory rules.

For the purposes of calculation of the specific collateral value of the bonds, the ECB sets a valuation haircut corresponding to that applicable to loans from Danmarks Nationalbank, which has chosen to apply the ECB's rules in this area.

Finally, a number of special rules apply, e.g. the requirement for a positive or zero coupon rate or the requirement that the bond debt must not be subordinated in relation to other bond debt from the same issuer.

Issuers of a bond that meets the above eligibility criteria must submit details about the bond to Danmarks Nationalbank on an Excel spreadsheet in order for the bond to become eligible. Danmarks Nationalbank's guidelines for completing the form are available from Payment Systems (bfk@nationalbanken.dk). The application must be submitted to the same address, accompanied by documentation verifying the statements in the spreadsheet, e.g. the credit assessment of the issuer. When the information requirements have been met, Danmarks Nationalbank will forward the spreadsheet to the ECB, once all issues concerning VP Lux have been finalised. The bond will then be featured on the ECB's list of eligible assets within 24 hours.

COLLATERALISATION OF VP LUX ISSUANCE

Bonds featured on the ECB's list of eligible assets may be collateralised to any central bank in the euro area. Securities issued in VP Lux can thus be pledged as collateral to BCL by institutions resident in Luxembourg, once the securities are on the list. In the rest of the euro area, issuance in VP Lux can be collateralised using the CCBM. In that case, Banque Centrale du Luxembourg will act as custodian bank for the central bank providing the loan.

Using the CCBM, securities issued in VP Lux are also eligible as collateral to Danmarks Nationalbank for credit in euro, cf. Terms and Conditions for Pledging of Collateral for Credit Facilities in Euro at Danmarks Nationalbank.

Three CSDs are linked to VP Lux, i.e. the two international CSDs Clearstream Banking, Luxembourg, and Euroclear Bank, Belgium, as well

as VP. Issuers in VP Lux can thus offer investors a choice of custodian services for their securities at one of these CSDs or VP Lux itself. If the link to Euroclear is approved by the Eurosystem, collateralisation to Banque Nationale de Belgique/Nationale Bank van België can be registered directly to Euroclear without using the CCBM.

Securities issued in VP Lux can be collateralised to Danmarks Nationalbank already from the date of issuance as they can be pledged to Danmarks Nationalbank via the link to VP under the existing procedures for credit in kroner and euro.

Supply of US Government Securities and Long-Term Yields

Søren Schrøder and Esben Humble Slotsbjerg, Financial Markets

INTRODUCTION AND SUMMARY

The world is in a slump in the wake of the financial crisis. Tax revenue is declining, expenditure is rising, and to that should be added expenditure for comprehensive stimulus and rescue packages. All of this puts pressure on public finances. In the USA, large budget deficits are expected in the coming years, cf. Chart 1, resulting in drastically increasing issuance of government securities.

In the course of the financial crisis, the 10-year US government bond yield has fallen as monetary-policy interest rates have been cut. At the same time, the spread between monetary-policy interest rates and long-term government bond yields has widened, cf. Chart 2. This is similar to the development in earlier periods when the Federal Reserve eased its monetary policy.

Yields have been driven by recession, fear of deflation and highly accommodative monetary policy during the financial crisis. In addition, there has been strong demand for US government securities as a result of demand for highly liquid and safe securities¹ and continued strong demand from Asian central banks and sovereign wealth funds. Demand has absorbed the growth in issuance since the summer of 2008 without leading to significant yield increases. Long-term yields have gone up in recent months, however.

Long-term nominal yields traditionally depend on growth and inflation expectations.² Normally, they are primarily driven by inflation expectations. Expectations of large budget deficits for the next many years have not raised inflation expectations significantly in recent months.³ In the long term there is a risk that the growing debt may give rise to increasing inflation expectations.

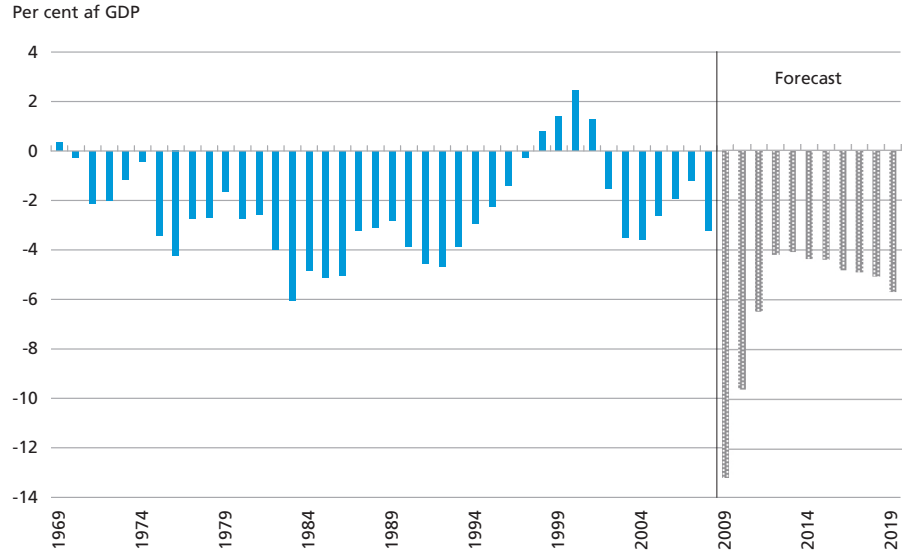
¹ A highly liquid bond is a security that can be sold within a short timeframe corresponding to its theoretical price.

² Long-term yields depend on a number of factors, including expectations of inflation, real growth, risk aversion and risk premium. For a description of how long-term yields are determined, see

³ Andersen, Hydeskov and Sand (2005) and Andersen, Ejsing and Sand (2006).
Consensus Economics; inflation expectations for the coming year.

US FEDERAL DEFICIT/SURPLUS

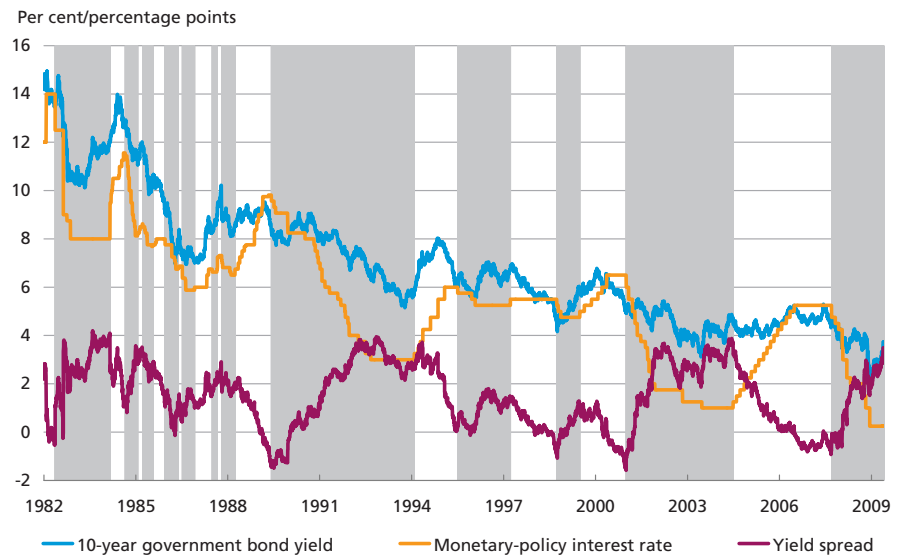
Chart 1



Note: The forecast relates to the Congressional Budget Office's estimate of the President's budget proposal.
 Source: Congressional Budget Office, www.cbo.gov.

10-YEAR GOVERNMENT BOND YIELD AND MONETARY-POLICY RATE IN THE USA

Chart 2



Note: The monetary-policy interest rate is the fed funds target rate. The most recent observation is from 2 June 2009. The grey areas are periods in which the Federal Reserve has eased monetary policy. The yield spread between the fed funds target and the 10-year government bond is in percentage points.

Source: Reuters EcoWin.

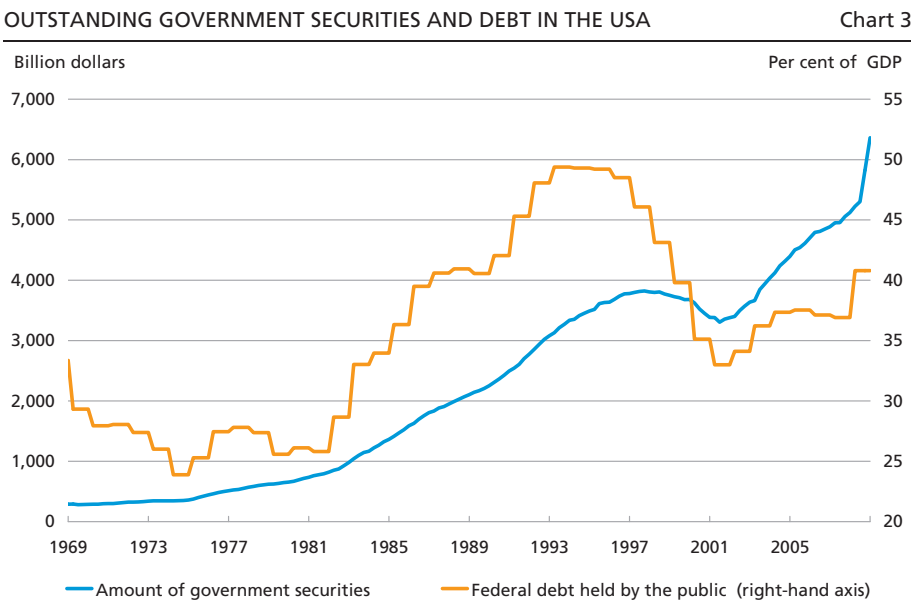
This article reviews some of the latest supply and demand trends and empirical correlations between the supply of government securities and long-term yields. The starting point is the yields on US government securities that may be seen as the hub of the global formation of interest rates.

SUPPLY OF US GOVERNMENT SECURITIES

The outstanding amount of US government securities has increased exponentially during the financial crisis, cf. Chart 3, and large net issuance is expected over the coming years.

According to the Congressional Budget Office, CBO, the budget deficit is expected to increase to approximately 13 per cent of the gross domestic product, GDP, in 2009, cf. Chart 1. This is more than twice as much as the largest deficit in the past 40 years. The projected budget deficits for 2010-19 are also large compared with previous deficits due to factors such as rising social and healthcare expenditure as a result of an ageing population.

The total debt is therefore expected to increase considerably in the coming years. The debt has been between 24 and 50 per cent of GDP for almost 40 years, cf. Chart 3. According to CBO, it may increase to more than 80 per cent of GDP in 10 years.



Source: Bloomberg and Congressional Budget Office, www.cbo.gov.

SUPPLY OF GOVERNMENT SECURITIES AND SLOPE OF THE YIELD CURVE

The slope of the US yield curve has steepened over the last 18 months or so as the deficit has grown, cf. above. This is in accordance with the traditional close correlation between net issuance of US government securities and the slope of the yield curve, cf. Chart 4. The yield curve steepens with increasing issuance.

Issuance of government securities typically increases in periods of economic slowdown with rising unemployment and declining inflation and growth expectations. In such periods, the Federal Reserve has typically reacted by easing monetary policy, which leads to falling short-term yields.

But long-term yields also depend on the long-term expectations of inflation and growth, and consequently monetary-policy rate cuts will not make long-term interest rates go up or down to the same degree. As a result, the yield curve steepens. The periods in which net borrowing and unemployment have been at the highest levels are also the periods with the steepest yield curve, cf. Chart 4.

The deficit's isolated effect on the slope can be estimated by adjusting for e.g. cyclical effects. A number of empirical studies find a positive correlation between the slope of the yield curve and the deficit.¹

The slope is more or less at the same level as during previous periods of high net borrowing, although expectations now include larger deficits and thus higher borrowing than before. Because short-term yields are close to zero, any further steepening of the yield curve is only possible if long-term interest rates increase, and unlike in previous recessions, long-term yields may potentially go up.

Maturity structure and the slope of the yield curve

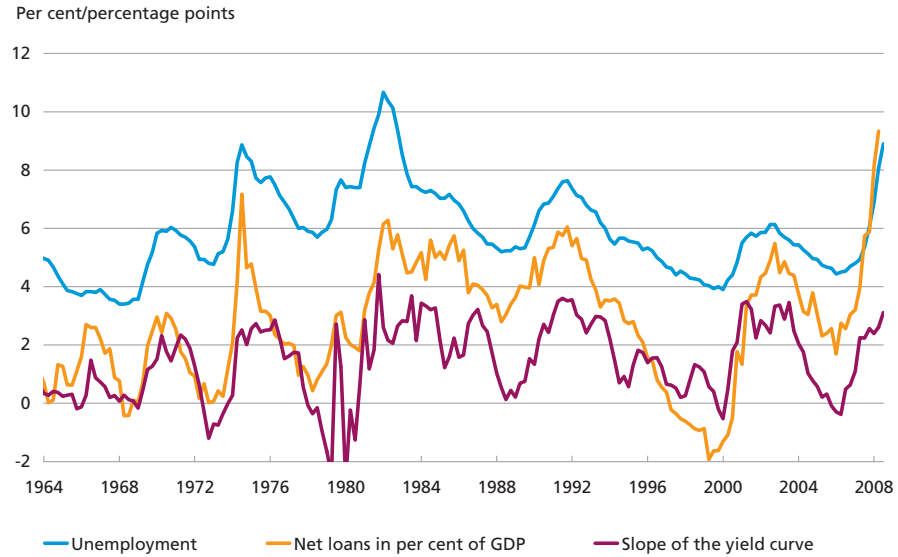
Since January 2008, the US government has increased the outstanding amount of securities with maturities of less than 1 year by approximately 1,000 billion dollars, and of securities with maturities of 1-10 years by approximately 500 billion dollars, cf. Chart 5. The average maturity of the outstanding amount of US government securities has thus decreased during the crisis.

This may affect the slope of the yield curve depending on the maturity of the bonds issued, because investors have different preferences with regard to maturities. The risk premium normally increases with the maturity.

¹ See e.g. Canzoneri, Cumby and Diba (2002), Paesani, Strauch and Kremer (2006) and Kiani (2009).

UNEMPLOYMENT, SLOPE OF THE YIELD CURVE AND NET ISSUANCE OF GOVERNMENT SECURITIES IN THE USA

Chart 4

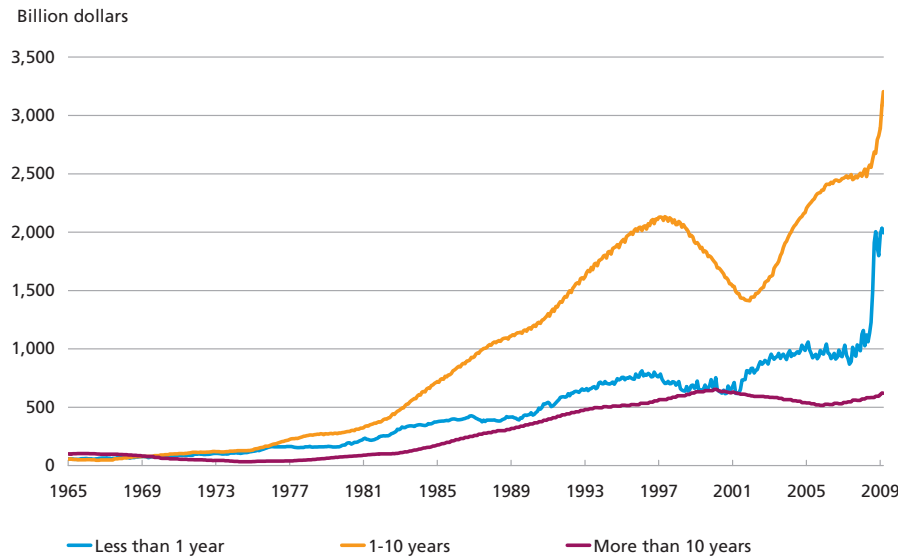


Note: The slope is measured as the spread between the 10-year and 3-month US government bond yields. The most recent observation is from 2 June 2009. The slope is stated in percentage points.
 Source: Reuters EcoWin.

If short-term securities make up the major part of the issuance, the effect of the growing budget deficit on the slope may be less pronounced than if the government primarily issued longer-maturity se-

OUTSTANDING GOVERNMENT SECURITIES BY MATURITY

Chart 5



Source: Reuters EcoWin and Bloomberg.

curities. This is confirmed by Greenwood and Vayanos (2008) who find a positive correlation between the slope of the yield curve and the relative maturity structure of the issued securities. An increase in the supply of long-term government securities compared with short-term securities may thus result in a steeper slope.

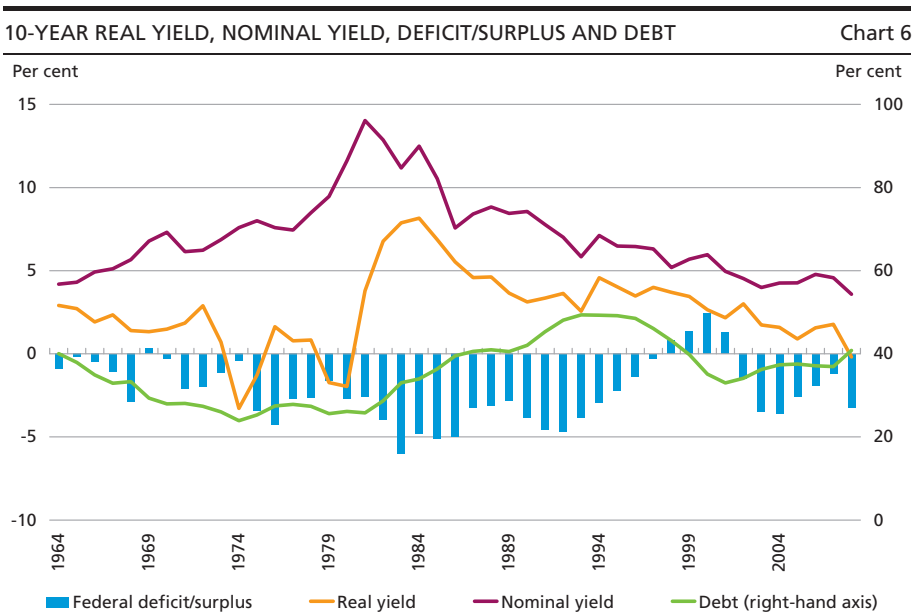
During the financial crisis there has been strong demand for highly liquid and safe securities. On some days, short-term US government securities have traded at a negative yield.

If the government chooses the maturity structure according to demand in the market, an increasing supply of government securities may have a less pronounced effect on the slope of the yield curve than would otherwise have been the case.

DEFICITS AND LONG-TERM YIELDS

The massive issuance of government securities and expectations of large deficits in the coming years have not led to any major increases in long-term yields. The trend has been rising since the beginning of 2009, however.

The development from 1963 to 2008 does not show a clear relationship between the debt or deficit level and real or nominal interest rates, cf. Chart 6.



Note: The most recent observation is from end-2008.
 Source: Reuters EcoWin.

Some empirical studies show that a growing deficit may have a positive effect on long-term yields, while others show no effect. This depends on whether the debt or deficit is used, and how the interest-rate effect is isolated from the cyclical effects.¹ Some empirical studies consider the relationship between real yields and the deficit. This is due to the fact that rising government debt can crowd out private investments and make real yields go up.

One way to separate the effect of a growing budget deficit on long-term yields from cyclical effects is to examine the long-term expectations of yields and budget deficits. The advantage of considering long-term expectations of yields and budget deficits is that these expectations are less dependent on the current economic situation. This separates the effect of easing monetary policy and the automatic stabilisers from the effect of a growing deficit.²

Using this method and adjusting for a number of economic factors, Laubach (2003) estimates that an increase of 1 percentage point of the expected budget deficit in per cent of GDP in five years will increase long-term real interest rates by about 0.25 percentage points. When using the actual deficit or the expectations of the accumulated debt, the effect is considerably smaller.

The results are subject to uncertainty, and the coming budget deficits are larger than previously seen. In addition, there is uncertainty as to the demand for US government securities.

DEMAND FOR US GOVERNMENT SECURITIES

So far, due to the current pronounced risk aversion in the financial markets, strong demand for safe and easily tradable assets and continued strong external demand, the market has absorbed the large supply of government securities in the auctions without significant price drops and thus rising yields. This is reflected by the large share of bidders compared to the historical average, cf. Chart 7. Long-term yields have risen since the beginning of 2009, however.

The question is whether there will be sufficient demand in future to cover the supply without causing significant yield increases.

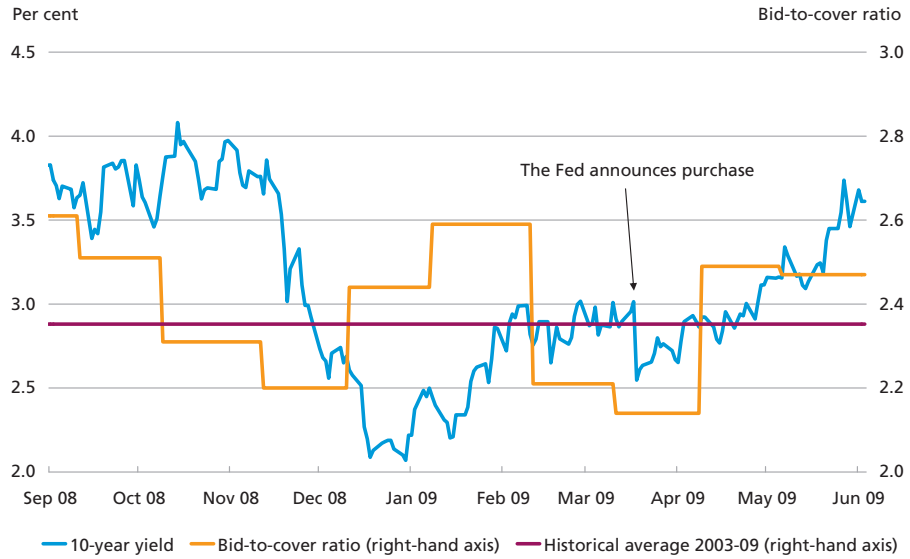
The Federal Reserve

The Federal Reserve, the Fed, has traditionally been a major buyer of government securities, cf. Chart 8. At the beginning of the crisis, the Fed

¹ See e.g. Engen and Hubbard (2004).

² For a discussion, see Laubach (2003) and Engen and Hubbard (2004).

10-YEAR GOVERNMENT-BOND YIELD AND BID-TO-COVER RATIO Chart 7

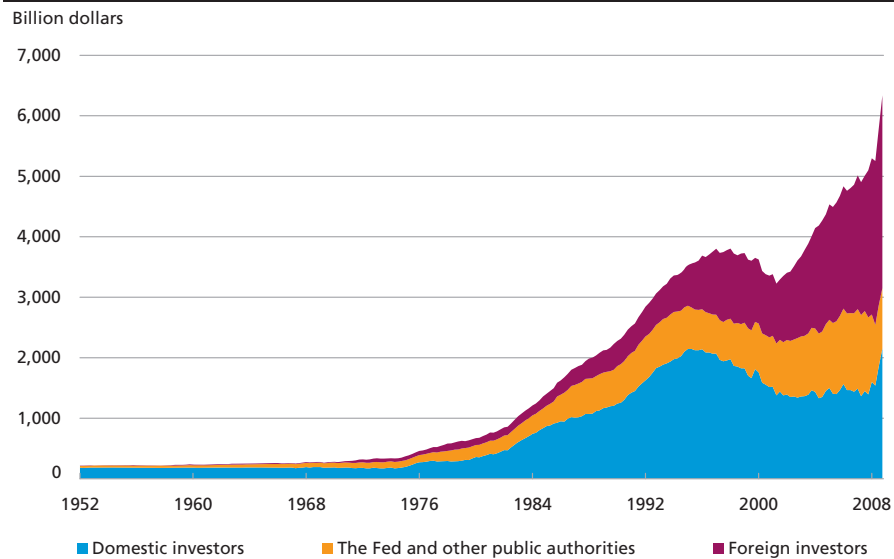


Note: The bid-to-cover ratio is the amount of bids in relation to the amount for sale.
 Source: Reuters Ecowin.

reduced the portfolio of government securities and increased the portfolio of mortgage bonds, etc.

The Fed subsequently announced purchases of US government securities for up to 300 billion dollars. The 10-year US government bond

US GOVERNMENT SECURITIES BY OWNERSHIP Chart 8



Source: Reuters EcoWin.

yield dropped about 0.5 percentage points in one day due to this announcement. The long-term yield is now at a higher level than before the announcement, cf. Chart 7.

Purchases of government securities may dampen the upward pressure on the 10-year yield in the short term. In the longer term, substantial purchases of debt may raise inflation expectations as the purchases may be seen as a step towards monetary financing¹ and thus inflation. It is not clear how much the Fed will commit to buying in addition to the 300 billion dollars. The desire to keep long-term interest rates down for some time may require the Fed to buy increasing amounts of government securities if inflation expectations rise at the same time.

In addition, the risk premium on US government securities may increase if the increasing debt affects the market view of the US government's credit rating.

Domestic investors

In the course of the crisis, domestic investors have increased their holdings of US government securities, cf. Chart 8.

The growing private savings ratio, which has been close to zero for a number of years, may absorb the increased supply of US government securities. In addition, domestic investors may buy more government securities after their great losses on stocks and the housing market, etc.

Foreign investors

Foreign investors have been willing to continue buying the growing supply of US government securities, cf. Chart 8.

Traditionally, Asian and oil-exporting countries have been major buyers of US government securities due to higher savings ratios, and this has contributed to keeping long-term yields down, cf. Andersen, Fick and Hansen (2007). It is difficult to assess whether this will also be the case in future, but there seems to be several effects that may potentially drive up the long-term yields.

Firstly, oil prices have fallen compared with the peak in July. The sovereign wealth funds in the oil-producing countries have therefore been affected by lower income and thus lower savings. Furthermore, the global slowdown in growth may reduce capital inflows – and thus foreign-exchange revenue – in the South East Asian emerging market economies. This reduces their capacity to continue to buy US government securities.

¹ Direct financing of government deficits by purchases of government bonds by central banks is called monetary financing.

Secondly, a large share of the Asian foreign-exchange reserves and the wealth of sovereign wealth funds is placed in US government securities. Increased diversification of investment rather than investment in dollar-denominated assets may give rise to capital outflows from the USA and thus exert upward pressure on long-term yields.

Conversely, the sovereign wealth funds, like other players in the financial markets, have suffered substantial losses on their investments, and this has decreased their wealth. This may reduce the risk appetite of the funds, thus diminishing their portfolios of equities, etc. offset by a larger share of government securities. Such a portfolio effect might exert downward pressure on yields.

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Fiscal Policy in the EU: Trends and Challenges

Thomas Munk Gade and Marianne C. Koch, Economics

INTRODUCTION

Public finances are under pressure in the EU member states. The strong economic downturn and fiscal-policy expansion entail falling tax revenue and rising public expenditure. In addition, there is expenditure for financial stability measures and for rescuing ailing financial institutions. This article takes a closer look at the development in public finances in 2008 and the coming years. The article also addresses the application of the Stability and Growth Pact in the current situation, and provides an overview of the EU member states currently subject to the excessive deficit procedure, along with the status of the member states' medium-term objectives, MTOs, for budget adjustment.

PUBLIC FINANCES: DEVELOPMENT AND OUTLOOK

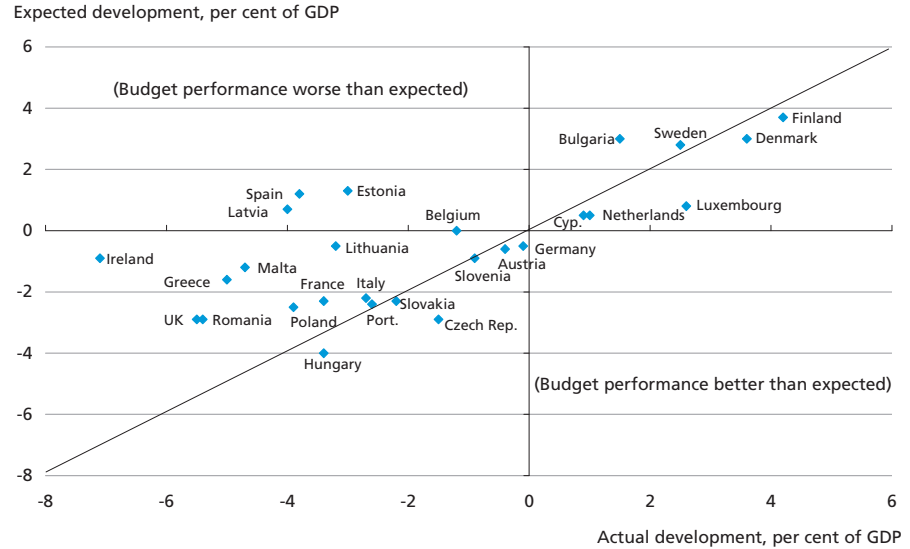
Development in public finances

Following the considerable upswing in previous years, growth in the gross domestic product, GDP, of the EU decreased markedly to approximately 1 per cent in 2008 compared with around 3 per cent in the preceding years. Activity declined substantially over the year, and from the 2nd half of 2008, the EU as a whole was in a recession.¹ As a result of the weak cyclical position, the overall budget deficit rose to 2.3 per cent of GDP in 2008 from 0.8 per cent of GDP in 2007.

The setback hit most EU member states with surprising force. In 16 of the 27 EU member states, the performance in the government budget was worse than expected, cf. Chart 1. Some member states experienced a significant deviation, notably Ireland, whose actual budget deficit was 7.1 per cent of GDP in 2008 compared with an expected deficit of 0.9 per cent of GDP. In addition, the budget performance was also considerably worse than expected in Spain, Greece, the UK and the Baltic States.

¹ Recession defined as two consecutive quarters of negative quarterly growth.

ACTUAL AND EXPECTED BUDGETARY DEVELOPMENTS IN 2008 Chart 1



Note: In the member states above the diagonal line, the actual government budget performance was worse than expected at end-2007. On the other hand, in the member states below the diagonal line the actual government budget performance was better than expected.

Source: Stability and convergence programmes from the review of the stability and convergence programmes 2007/08 and Eurostat.

The recession in most of the EU member states in 2009 is expected to put further pressure on public finances in the coming years. According to the European Commission's spring forecast, the overall budget deficit of the EU member states will increase considerably from 2.3 per cent of GDP in 2008 to 6.0 per cent in 2009 and 7.3 per cent in 2010. Government debt is expected to rise from 61.5 per cent of GDP in 2008 to 72.6 per cent in 2009 and 79.4 per cent in 2010. The government deficits of almost all member states are expected to exceed the reference value of 3 per cent of GDP, stipulated in the Stability and Growth Pact, in the coming years, cf. Table 1.

Economic recovery plan and stimulus packages

In order to avoid a deep recession and mitigate the consequences of the economic downturn, in November 2008 the Commission presented an overall plan to support the European economy. The European Economic Recovery Plan rested on two pillars and was anchored in the Lisbon strategy and the Stability and Growth Pact. The Commission proposed that the member states and the EU should implement a discretionary budgetary expansion of approximately 200 billion euro or 1.5 per cent of EU GDP. The contribution of the member states was to amount to 1.2 per cent of EU GDP (around 170 billion euro). The initia-

**EUROPEAN COMMISSION FORECAST OF GOVERNMENT BUDGET DEFICITS
AND GOVERNMENT DEBT IN THE EU MEMBER STATES IN 2008-10**

Table 1

Per cent of GDP	Budget balance			Government debt		
	2008	2009	2010	2008	2009	2010
<i>Euro area member states</i>						
Belgium	-1.2	-4.5	-6.1	89.6	95.7	100.9
Cyprus	0.9	-1.9	-2.6	49.1	47.5	47.9
Finland	4.2	-0.8	-2.9	33.4	39.7	45.7
France	-3.4	-6.6	-7.0	68.0	79.7	86.0
Greece	-5.0	-5.1	-5.7	97.6	103.4	108.0
Netherlands	1.0	-3.4	-6.1	58.2	57.0	63.1
Ireland	-7.1	-12.0	-15.6	43.2	61.2	79.7
Italy	-2.7	-4.5	-4.8	105.8	113.0	116.1
Luxembourg	2.6	-1.5	-2.8	14.7	16.0	16.4
Malta	-4.7	-3.6	-3.2	64.1	67.0	68.9
Portugal	-2.6	-6.5	-6.7	66.4	75.4	81.5
Slovakia	-2.2	-4.7	-5.4	27.6	32.2	36.3
Slovenia	-0.9	-5.5	-6.5	22.8	29.3	34.9
Spain	-3.8	-8.6	-9.8	39.5	50.8	62.3
Germany	-0.1	-3.9	-5.9	65.9	73.4	78.7
Austria	-0.4	-4.2	-5.3	62.5	70.4	75.2
Euro area	-1.9	-5.3	-6.5	69.3	77.7	83.8
<i>Other member states</i>						
Bulgaria	1.5	-0.5	-0.3	14.1	16.0	17.3
Denmark	3.6	-1.5	-3.9	33.3	32.5	33.7
Estonia	-3.0	-3.0	-3.9	4.8	6.8	7.8
Latvia	-4.0	-11.1	-13.6	19.5	34.1	50.1
Lithuania	-3.2	-5.4	-8.0	15.6	22.6	31.9
Poland	-3.9	-6.6	-7.3	47.1	53.6	59.7
Romania	-5.4	-5.1	-5.6	13.6	18.2	22.7
UK	-5.5	-11.5	-13.8	52.0	68.4	81.7
Sweden	2.5	-2.6	-3.9	38.0	44.0	47.2
Czech Republic	-1.5	-4.3	-4.9	29.8	33.7	37.9
Hungary	-3.4	-3.4	-3.9	73.0	80.8	82.3
EU	-2.3	-6.0	-7.3	61.5	72.6	79.4

Note: The grey areas are budget deficits and government debt higher than the reference values of 3 per cent and 60 per cent of GDP, respectively, stated in the Stability and Growth Pact.

Source: European Commission (2009).

tives of the member states were to be timely, targeted and temporary as well as coordinated, and the individual member states' measures should reflect their budgetary starting positions. Some member states were thus encouraged to implement large budgetary expansions, while others would have to focus on reducing external and internal imbalances. The aim of the second pillar of the Recovery Plan was to improve Europe's long-term competitiveness by increasing focus on investment in e.g. energy efficiency, clean technologies and infrastruc-

ture. The European Recovery Plan was adopted by the European heads of state and of government in December 2008.

According to the Commission's calculations, discretionary fiscal measures will stimulate EU GDP by 0.5-1 per cent in 2009 and 0.4-0.7 per cent in 2010. In addition, the automatic stabilisers have an automatic expansionary effect, although the size varies across the member states.¹

Financial stimulus packages to stabilise the financial sector

In addition to the budgetary impulses to mitigate the economic downturn, the EU member states have had to implement measures to support the financial system. Many member states have guaranteed the banks' issuance of private-sector debt and injected subordinated capital into the banking sector. Several European governments have had to step in and rescue important financial institutions,² while a few governments have even nationalised crisis-stricken banks. A country-specific overview of government measures to stabilise the financial sector is given in Denmark's Nationalbank, *Financial stability 2009, 1st half*.

Measures to stabilise the financial sector impact on the public finances of the member states, but whether the measures influence both the budget deficit and the gross government debt or just the gross debt depend on their nature.³

According to the Commission's estimate, total capital injections into the financial sector in the EU amount to 1.25 per cent of EU GDP. In addition, the Commission has approved guarantee programmes for the financial sector corresponding to approximately 24 per cent of EU GDP. So far, government-guaranteed debt totalling around 7.5 per cent of GDP has been issued, cf. the Commission's spring forecast.

Financing costs

Government bond yield spreads within the euro area have been stable for a number of years. Since the late 1990s, 10-year government bond yields in the euro area member states have thus been less than 0.5 percentage points above the benchmark German government bond. This trend reversed in 2008, and the yield spreads to Germany widened for

¹ The Nordic EU member states and Belgium, France, the Netherlands and Germany are among the EU member states found to have the greatest automatic stabilisers, while they are less pronounced in member states such as Ireland, Portugal, Spain and the UK, cf. Olesen and Winther (2009).

² The most prominent examples of financial institutions that were rescued by their respective governments during the autumn of 2008 were: Bradford and Bingley (UK), Fortis Bank (Benelux), Dexia (France/Belgium) and Hypo Real Estate (Germany).

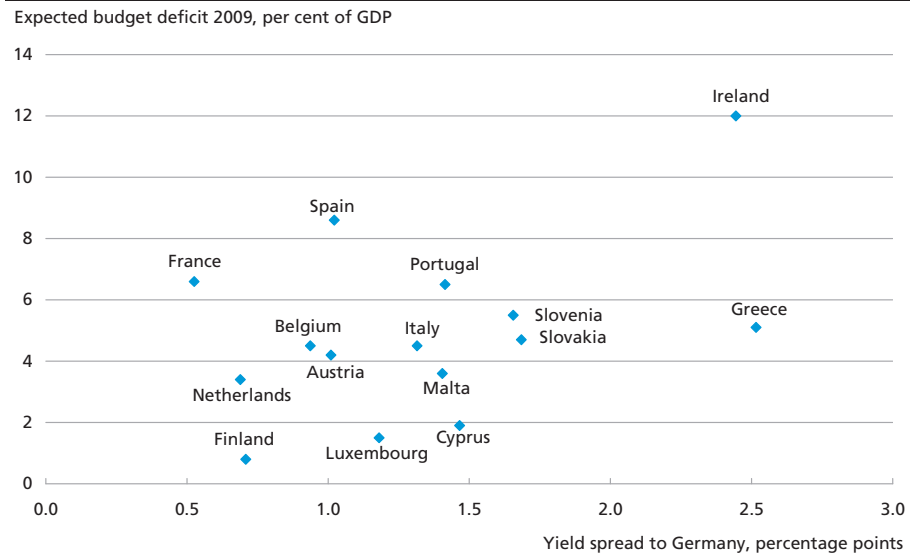
³ Eurostat, the statistical agency of the EU, has not yet formally finalised the statistical treatment of government intervention to stabilise the financial sector. Generally, it seems that government guarantees and recapitalisation affect only the gross domestic debt in so far as the measures are implemented on market terms. The measures will have a budgetary effect only in the event of default on guaranteed issuance.

all other euro area member states. This was especially pronounced for Ireland and Greece, where government bond yields at the beginning of 2009 were around 3 percentage points higher than the corresponding German yield. The individual member states' government bond yield spreads to Germany have narrowed since March, but at the beginning of June they were still wider than before the financial turmoil. The general tendency for wider yield spreads reflects that the markets are increasingly assessing the fiscal sustainability of individual member states as a result of the financial crisis. This fiscal assessment is based on a number of factors, notably the size of the government debt, the expected budget deficit, the member state's track record of fiscal sustainability, and whether the member state is exposed to current risks such as e.g. a correction of the housing market. A comparison of the member states' yield spreads with their expected budget deficits in 2009 shows a positive correlation between the yield differential and the expected budget deficit, cf. Chart 2.

The extension of government budgets in 2009 and higher-than-expected debt in the coming years have increased the need for government issuance in the member states. The more pronounced yield differentiation by the market thus entails greater variation in costs among the member states in relation to implementation of stimulus packages and financial crisis assistance.

RELATIONSHIP BETWEEN YIELD SPREAD AND BUDGET DEFICIT

Chart 2



Anm.: The yield spread is measured as the average yield spread between a 10-year government bond in the relevant euro area member state and a German 10-year government bond in the period February-April 2009.

Source: Reuters EcoWin.

THE STABILITY AND GROWTH PACT IN THE CURRENT SITUATION

Based on the Treaty, the Stability and Growth Pact is at the heart of the EU's budgetary surveillance of the member states. Such surveillance spans from the short-term perspective of the excessive deficit procedure, i.e. the corrective arm of the Pact, via the medium-term perspective of MTOs to the long-term perspective of fiscal sustainability analyses, i.e. the preventive arm.

The excessive deficit procedure

The excessive deficit procedure is a key element of the EU's budgetary surveillance. Article 104 of the Treaty prohibits excessive government deficits in the EU member states. Under normal economic circumstances, an excessive government deficit is a deficit exceeding 3 per cent of GDP. However, a government deficit in excess of this limit may not be regarded as an excessive deficit if the excess is due to exceptional economic circumstances. The reform of the Stability and Growth Pact in 2005¹ provided for a more lenient interpretation of exceptional economic circumstances. Excess of the 3-per-cent limit can be regarded as "exceptional" if it is due to negative growth or output losses accumulated over a sustained period of very low GDP growth relative to its potential. The criterion of exceptional economic circumstances is only one of several criteria that are to be met for a member state with a government deficit exceeding 3 per cent to be granted exemption from the excessive deficit procedure. In addition, a deficit exceeding 3 per cent of GDP must be "temporary" and "close" to the 3-per-cent reference value. In the absence of clear definitions of the latter two criteria, however, the Commission has more scope for interpretation. The Commission is in an awkward position as it must now apply the Stability and Growth Pact in the light of the measures implemented by the member states at the instigation of the Commission itself.

Member states subject to the excessive deficit procedure

The number of member states subject to the excessive deficit procedure has declined steadily in recent years, down to two, the UK and Hungary, but the trend has reversed this year. The Commission's review of the updated stability and convergence programmes in the spring of 2009 revealed excessive deficits also in Ireland, France, Spain, Greece, Latvia and Malta in 2008. The Commission found that only

¹ Presidency conclusions from the European Council on 22-23 March 2005. The reform of the Stability and Growth Pact is described in more detail in Jensen and Larsen (2005).

Malta should be exempted from the excessive deficit procedure, because Malta's government deficit in 2008 was assessed as being "close" to the reference value of 3 per cent and "temporary". According to the Commission, Ireland's and Latvia's 2008 government deficits could be regarded as "exceptional" since both economies have suffered severe economic setbacks already in 2008, but the breach of the reference value of 3 per cent could not be regarded as "temporary" on the basis of the Commission's forecast for 2009 and 2010.¹ As regards France, Spain and Greece, the Commission found that their 2008 government deficits could not be regarded as "exceptional" since positive GDP growth was observed in all three member states in 2008. However, while the Commission did classify the deficits of France and Spain as being "close" to the reference value of 3 per cent, they could not be regarded as "temporary" in the light of the Commission's forecast for 2009 and 2010. In Greece's case the Commission concluded that the government deficit exceeded the reference value already in 2007 and expected the deficit to remain above 3 per cent in 2008, 2009 and 2010. Consequently, the two criteria of "close" to 3 per cent and "temporary" had not been met.

Acting on the Commission's recommendation, the Ecofin Council decided in April to initiate the excessive deficit procedure against Ireland, France, Spain and Greece under Article 104(6) of the Treaty, cf. Table 2. No formal Council decision under this Article exists as yet regarding Latvia.²

According to the most recent Eurostat figures for the government deficits of the EU member states, the deficits of Malta and Latvia in 2008 were worse than expected earlier this year when the two member states were considered in connection with the excessive deficit procedure. Malta's government deficit in 2008 was 4.7 per cent of GDP, while that of Latvia was 4.0 per cent. In addition, the most recent data releases reveal that the government deficits of Romania (5.4 per cent), Poland (3.9 per cent) and Lithuania (3.2 per cent) also exceeded the reference value of 3 per cent of GDP in 2008. The Commission has suggested that the excessive deficit procedure be initiated for these member states, and a formal Council decision is expected in June.

Only a few member states are expected to observe the reference value for government deficits in 2009. In addition, most member states' excess of the reference value is expected to be considerable and sustained. The

¹ The Commission's preliminary economic forecast from January 2009 formed the basis for the Commission's assessment and the Council decision.

² The European Commission has not yet issued a recommendation under Article 104(6) of the Treaty concerning Latvia, so the Ecofin Council has not yet decided on the matter.

STATUS FOR MEMBER STATES SUBJECT TO THE EXCESSIVE DEFICIT PROCEDURE,
MAY 2009

Table 2

	Initiation of procedure	Type of decision (Article in the Treaty)	Budget balance 2008	Deadline for correction
<i>Euro area member states</i>				
France	2009	Decision/recommendation (104.6/7)	-3.4	2012
Ireland	2009	Decision/recommendation (104.6/7)	-7.1	2013
Greece	2009	Decision/recommendation (104.6/7)	-5.0	2010
Spain	2009	Decision/recommendation (104.6/7)	-3.8	2012
Malta	2009	Report/opinion (104.3/4)	-4.7	-
<i>Other member states</i>				
Hungary	2004	Decision/recommendation (104.6/7)	-3.4	2009
UK	2008	Decision/recommendation (104.6/7)	-5.5	2013/14
Latvia	2009	Report (104.3)	-4.0	-
Lithuania	2009	Report/opinion (104.3/4)	-3.2	-
Poland	2009	Report/opinion (104.3/4)	-3.9	-
Romania	2009	Report/opinion (104.3/4)	-5.4	-

Note.: The type of decision refers to the individual member state's stage of the procedure in relation to Article 104(3), (4), (6), (7), (8) and (9) of the Treaty. The European Commission prepares a report, Article 104(3) and a draft Council opinion under Article 104(4). Under Article 104(6) the Ecofin Council decides whether an excessive deficit exists, and under Article 104(7) a *recommendation* is issued to the member state for correction of its deficit within a given period. Under Article 104(8) the Council has established that there has been *no effective action* in response to its recommendation to correct the budget deficit within the given period. Under Article 104(9) the Council *gives notice* to a member state to correct its deficit within a specified time limit. Only euro area member states can be given notice to correct their budget deficits, and if they fail to comply with the Council decision, sanctions can be imposed under Article 104(11), which has never been the case so far, however. The Table illustrates the status of the member states subject to the excessive deficit procedure at the time of going to press.

number of member states subject to the excessive deficit procedure under the Stability and Growth Pact is therefore expected to rise this year and in 2010.

The medium-term objectives (MTOs)

The aim of the preventive arm of the Stability and Growth Pact is to ensure that the EU member states in principle avoid large budget deficits in the longer term. According to the preventive elements, the EU member states must aim for a structural balance (cyclically adjusted budget balance stripped of one-off measures) close to balance or in surplus. To this end, the member states must prepare medium-term objectives for their public finances, imposing a medium-term structural budget objective. The individual member states prepare their own MTOs based on the size of their government debt and potential growth.

Euro area and ERM II member states are subject to more stringent rules: in the MTOs of member states with small debt or high potential growth, the structural budget deficit must not exceed 1 per cent of GDP, while member states with large debt or low potential growth must still aim for a budget close to balance or in surplus in the medium term. In addition, under the preventive arm of the Stability and Growth Pact

member states that fail to observe their medium-term objectives must make annual structural adjustments – for euro area and ERM II member states by at least 0.5 percentage point of their structural balance in relation to GDP. More extensive structural adjustments in good times are expected. Furthermore, the Pact stipulates that the member states must avoid procyclical fiscal policies.

The key issues in relation to the preventive arm of the Pact are thus whether the member states observe their individual MTOs and whether they implement sufficient structural adjustments if they do not observe their MTOs.

The member states' observance of their MTOs

Very few EU member states observed their medium-term objectives in 2008, cf. Table 3, in fact most member states are relatively far from doing so. In addition, the starting point of most member states, i.e. the actual structural budget balance for 2008, is worse than expected when the stability and convergence programmes were prepared at the end of 2008.

Furthermore, the structural balance is likely to deteriorate during 2009 and for several member states also in 2010 as a result of expansionary discretionary fiscal policies in 2009 and 2010. A considerable degree of structural adjustment is therefore required in step with economic recovery. The Ecofin Council may issue an early warning to a member state on the basis of a recommendation from the Commission if the Commission has determined significant deviation between the member state's actual budgetary position and its MTO. The reform of the Stability and Growth Pact in 2005 provided for advice directly from the Commission to a member state on the general implications of the fiscal policy pursued. The Commission most recently gave advice to France in May 2008 and Romania in June 2008. The Commission is now considering its position as regards the current deviation between the actual budgetary situations and the MTOs of many member states.

Fiscal sustainability and MTOs

The next 50 years will see considerable growth in public expenditure. The main reason is the demographical factors related to the changing age composition of European populations. In the 2005 reform of the Stability and Growth Pact it was already clear that MTOs were to take account of the sustainability challenges resulting from the increasing age-related expenditure. In October 2007, the Ecofin Council decided that the member states should include new, long-term projections in their MTOs when preparing their stability and growth programmes in

MEMBER STATES' MEDIUM-TERM OBJECTIVES (MTOS) AND COMPLIANCE Table 3

	MTO	Structural balance	Expected structural balance according to stability and convergence programmes 2008/09				
		2008	2008	2009	2010	2011	2012
<i>Euro area member states</i>							
Belgium	0.5	-2.2	-1.9	-2.2	-2.4	-2.3	-1.9
Cyprus	0.0	0.1	0.7	-0.8	-1.2	-1.7	-2.1
Finland	2.0	2.8	3.7	2.4	1.7	1.6	1.6
France	0.0	-4.3	-2.6	-3.0	-1.9	-1.4	-0.9
Greece	0.0	-6.5	-4.5	-4.3	-2.8	-2.2	-
Netherlands	-0.5/-1	-0.5	0.8	1.0	1.1	1.5	-
Ireland	0.0	-7.5	-6.2	-8.1	-7.4	-5	-4.1
Italy	0.0	-3.4	-2.9	-2.7	-2.0	-1.7	-
Luxembourg	-0.8	2.0	1.5	0.6	0.4	-	-
Malta	0.0	-4.9	-3.7	-1.7	-0.2	0.9	-
Portugal	-0.5	-3.8	-2.0	-3.0	-1.8	-1.2	-
Slovakia	<1.0	-4.7	-	-	-	-	-
Slovenia	-1.0	-2.5	-	-	-	-	-
Spain	0.0	-3.9	-3.5	-4.7	-3.4	-2.8	-
Germany	0.0	-1.2	-0.8	-2.5	-3.4	-2.4	-2.1
Austria	0.0	-1.8	-1.3	-2.9	-3.8	-3.7	-3.8
<i>ERM II member states</i>							
Denmark	0.75-1.75	4.2	4.0	2.6	1.7	1.3	0.6
Estonia	0.0	-4.1	-2.4	-0.1	0.4	1.2	0.7
Latvia	-1.0	-5.8	-5.1	-4.9	-3.3	-1.4	-
Lithuania	-1.0	-5.2	-4.9	-1.8	0.1	1.1	-
<i>Other member states</i>							
Bulgaria	1.5	0.2	2.6	3.2	3.6	3.5	-
Poland	-1.0	-5.3	-3.1	-2.5	-1.9	-1.7	-
Romania	-0.9	-7.9	-	-	-	-	-
UK	-	-5.6	-5.3	-7.2	-6.2	-5.1	-4.2
Sweden	1.0	1.7	2.8	1.9	2.1	2.5	-
Czech Republic	-1.0	-3.4	-1.9	-1.7	-1.3	-1.1	-
Hungary	-0.5	-4.5	-3.5	-1.8	-1.6	-1.7	-

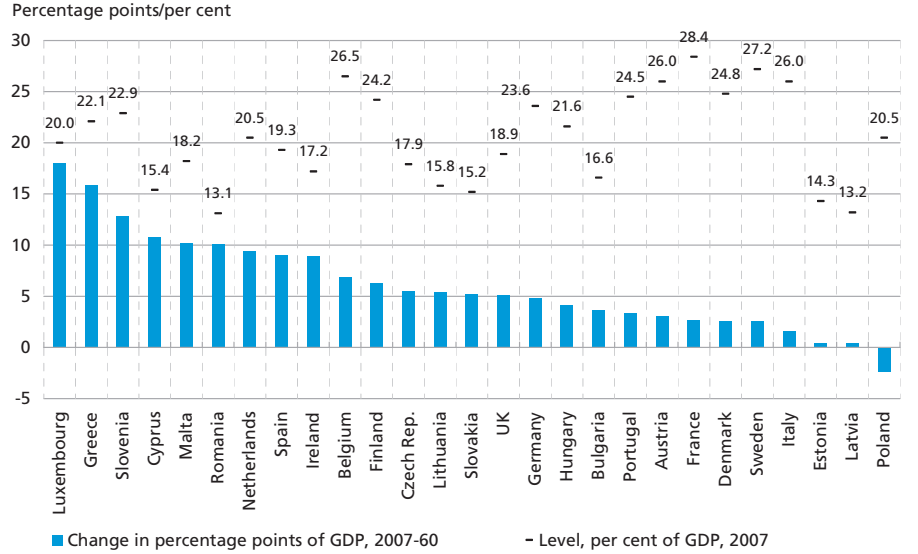
Note: The grey areas indicate compliance with MTOs in 2008. The MTO for Denmark runs until 2010. After that time, the MTO for Denmark is a balanced structural balance. The structural balance for 2008 is based on the latest data or estimates from the European Commission's spring forecast, May 2009. "-" means data not available for the member state in question.

Source: European Commission, Public Finances 2008. Adopted Council conclusions on the member states' stability and convergence programmes for 2008-11 or the member states' submitted stability and convergence programmes for 2008-11.

2009. The EU member states are now close to agreement on the methods of including the long-term projections in MTOs. Updated long-term projections were published on 20 April 2009 in The Ageing Report 2009 prepared jointly by the Commission and the Economic Policy Committee, EPC. According to the report, public age-related expenditure will increase significantly over the next 50 years, cf. Chart 3.

AGE-RELATED PUBLIC EXPENDITURE AND EXPECTED CHANGE

Chart 3



Source: European Commission, The Ageing Report 2009.

The current economic downturn results in a worse starting point for government debt in connection with the long-term projections, and the future challenges for public finances are even greater. It is therefore important to stay focused on fiscal consolidation in connection with the current downturn, and on resuming the fiscal consolidation process in step with the expected gradual economic recovery.

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Global Imbalances and the Financial Crisis

Paul Lassenius Kramp, Economics

INTRODUCTION AND SUMMARY

Prior to the current worldwide recession, the global imbalances were perceived as one of the most serious risk factors for global economic stability.

This article discusses the role of the imbalances in the light of the financial crisis. The conclusion is that the global imbalances neither triggered nor caused the financial crisis, but that the factors underlying the global imbalances were also contributory to the financial crisis. Substantial savings in a number of countries, notably China, and accommodative monetary policy in the USA resulted in growing global imbalances. These factors also led to low real interest rates and small risk premiums – two important drivers of the financial crisis. The global imbalances have, however, exacerbated the financial crisis in that they have served as a channel through which the financial crisis has spread internationally, thereby affecting many countries synchronously.

This article first defines and describes the global imbalances. This is followed by an account of the various explanations of the imbalances and an analysis of the relationships between the global imbalances and the financial crisis.

THE GLOBAL IMBALANCES

The term "global imbalances" covers the considerable current-account surpluses/deficits sustained by a number of countries over the last 10 years or so, cf. Chart 1.¹

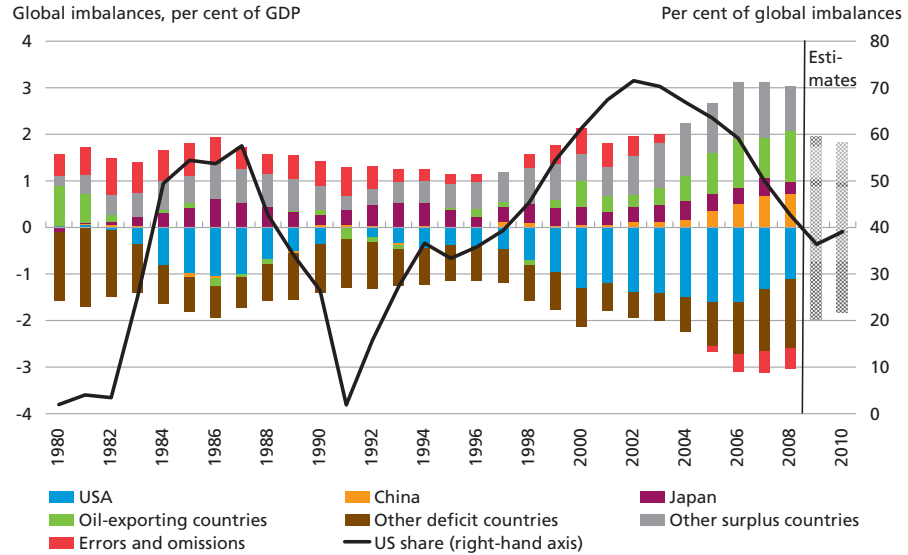
The group of countries with large current-account surpluses comprises China, Japan, other East Asian countries, oil-exporting countries and Germany, while the group of deficit countries comprises the USA, the UK and Southern and Eastern Europe.

Overall, current-account deficits accounted for more than 3 per cent of global Gross Domestic Product, GDP, at their peak in 2006 and 2007. The US deficit alone made up more than half of the total deficit. In the wake

¹ See e.g. IMF (2009b).

GLOBAL IMBALANCES

Chart 1



Note: Global imbalances are defined as the sum of global current-account deficits/surpluses. As from 2009, the trend is based on the IMF's April 2009 forecast.

Source: IMF, World Economic Outlook database, April 2009.

of the financial crisis, the IMF expects the global imbalances to diminish in 2009, to almost 2 per cent of GDP, and to remain unchanged in 2010.

This article focuses solely on the substantial US deficit on the one hand and the large surpluses in Asia – especially China – and the oil-exporting countries on the other hand. The imbalances in Europe are regarded as a distinctly European phenomenon, one reason being that the current-account balance of the euro area has been around zero for the last 10 years.

FACTORS BEHIND THE GLOBAL IMBALANCES

According to economic theory, investment will flow from the high-income industrialised countries to low-income emerging market economies where higher returns on the scarce capital stock can be achieved relative to the industrialised countries. The flows have moved in the opposite direction, however, from emerging market economies to Industrialised countries, mainly the USA. Such "unnatural" capital flows are called a "Lucas paradox".¹ The global imbalances are thus not only of a historical magnitude, they also stem from flows in the "wrong" direction from what could initially be expected.

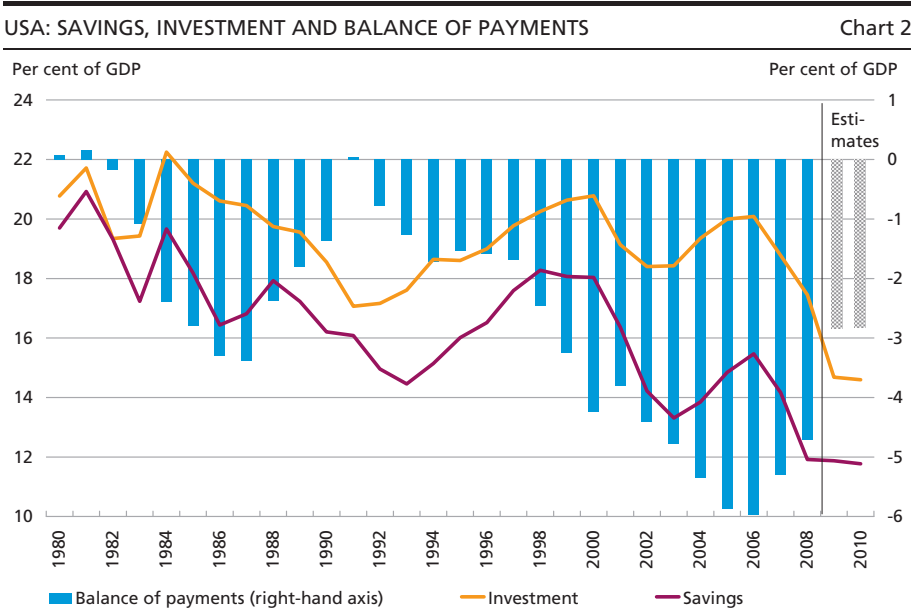
¹ See Lucas (1990).

According to national accounts identities, a country incurs a current-account deficit if investment exceeds savings. For a number of years, this has been the case in the USA, where investment has remained in the range of 18-20 pct. of GDP in the period 1980-2008, but a considerable drop is expected in 2009. Savings, on the other hand, have been declining for many years, cf. Chart 2.

At the beginning of the 1980s, total savings by households, business enterprises and the public sector accounted for approximately 20 per cent of GDP, while it was around 16.4 per cent of GDP in 2001 and 14.2 per cent of GDP in 2007. Especially savings by US households have been very low, their savings ratio having dropped from around 10 per cent of disposable income at the beginning of the 1980s to around zero over the last five years or so. Declining savings entail increased spending, which contributes to a current-account deficit.

Asia has seen rising savings and investment since 1980, cf. Chart 3. In connection with the Asian crisis in 1997, investment dropped more than savings, resulting in emerging current-account surpluses in these economies. Savings have increased from 31 per cent of GDP in 2000 to no less than 48 per cent in 2008.

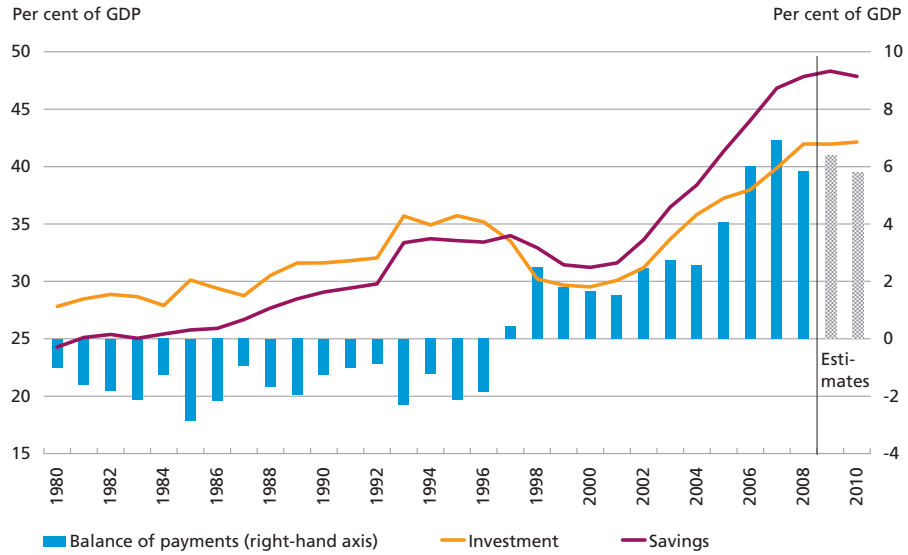
The international debate has offered several explanations of why US savings have shown a downward trend, while savings in Asia have shown a strong upward trend.



Note: According to the national accounts definitions, the development in the balance of payments should equal the difference between savings and investment. Deviations are due to statistical discrepancies.
 Source: Reuters EcoWin and own calculations.

ASIAN EMERGING MARKET AND DEVELOPING ECONOMIES: SAVINGS, INVESTMENT AND BALANCE OF PAYMENTS

Chart 3



Note: According to the national accounts definitions, the development in the balance of payments should equal the difference between savings and investment. Deviations are due to statistical discrepancies.
 Source: IMF, World Economic Outlook database, April 2009.

Excess savings: "the global savings glut"

The premise of this explanation is that specific factors in Asia and the oil-producing countries have entailed a very high desired savings ratio. In China, three structural factors in particular are emphasised as having led to higher savings.

Firstly, increased labour-market liberalisation has entailed higher savings. A growing proportion of Chinese are employed by private-sector companies where job security, pension schemes and health insurance conditions are much poorer than in the public sector. This gives rise to a need to increase precautionary savings.

Secondly, the private real property market has grown considerably in size, but access to mortgage financing is poor as the liberalisation of the financial sector lags behind the property market. Consequently, purchases of real property must be financed via savings.

Thirdly, demographical factors contribute to increased savings. China has a large population of young people of working age, and their savings ratio is far higher than that of older population groups, who tend to spend some of their savings.

In the oil-exporting countries, high oil prices – particularly since 2004 – have generated massive export revenue. A considerable share of this revenue has been regarded as a windfall. This has boosted savings, so that oil revenue will benefit future generations as well.

The high, rising savings ratio in Asia and the oil-exporting countries resulted in a tendency for global excess savings, or "the global savings glut".¹ This led to an excess supply of capital – too much capital chasing too few investment opportunities.²

Excess savings: Bretton Woods II

Until the Asian crisis in 1997 the Asian economies had had relatively large current-account deficits. The Asian crisis meant that international investors were no longer willing to finance the current-account deficits of the emerging market economies, which caused growth to drop sharply in several Asian economies. To prevent the vulnerability that a large current-account deficit entails, several countries changed strategies in favour of export-driven growth and accumulation of substantial foreign-exchange reserves. Trade surpluses were ensured *inter alia* by pegging exchange rates to the dollar, hence the term Bretton Woods II.³

At the same time, inflows of foreign capital were sterilised to a high degree, i.e. channelled to foreign-exchange reserves.⁴

This resulted in significantly higher foreign-exchange reserves in a number of economies, particularly after the millennium rollover, cf. Chart 4. At end-2008, the global foreign-exchange reserves accounted for more than 11 per cent of global GDP.

Excess spending in the USA: "the global liquidity glut"

From 1997 to 2000 the USA saw strong growth in private wealth generated by the dotcom bubble. Some of the capital gains were spent, resulting in lower savings. The Federal Reserve focused predominantly on price stability and high growth, largely refraining from countering price bubbles in the stock and housing markets. Firstly, the assessment was that bubbles were extremely difficult to identify; secondly, the credibility of monetary policy can be undermined by having several objectives; thirdly, the right instruments were not at hand. The effects of raising monetary-policy interest rates would be far too broad-based and could do more damage than good.⁵

¹ See Bernanke (2005) and (2007).

² "Capital chasing investment" or "money chasing ideas". See Trichet (2007).

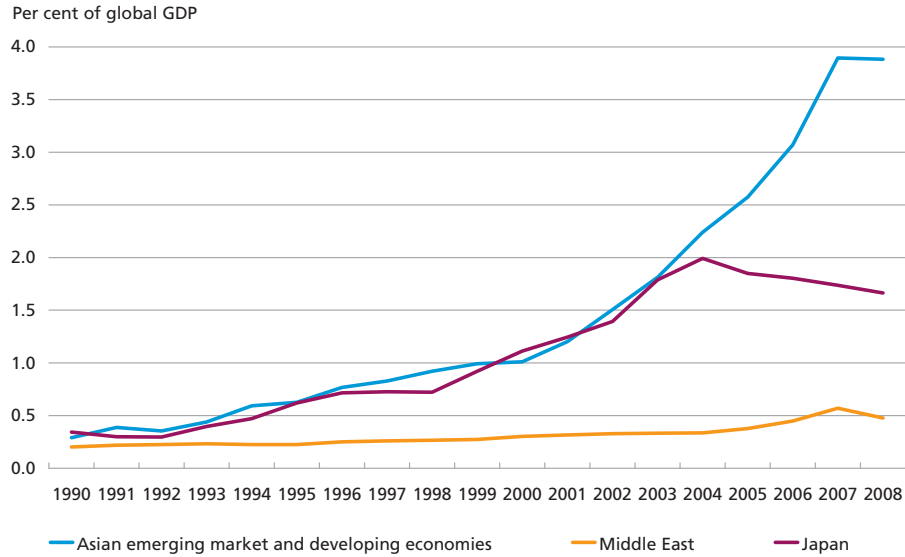
³ Bretton Woods refers to the international monetary system prevailing in 1944-71. The participating countries were obliged to keep their currencies stable (± 1 pct.) against the dollar (and the dollar was pegged to gold).

⁴ In order to absorb the substantial capital inflows China, among others, raised its minimum reserve requirements, from 6 per cent in 2003 to 17.5 per cent in mid-2008.

⁵ In 1996, the then governor of the Federal Reserve stated as follows: "But how do we know when irrational exuberance has unduly escalated asset values, which then become subject to unexpected and prolonged contractions as they have in Japan over the past decade? And how do we factor that assessment into monetary policy? We as central bankers need not be concerned if a collapsing financial asset bubble does not threaten to impair the real economy, its production, jobs, and price stability. Indeed, the sharp stock market break of 1987 had few negative consequences for the economy.", Greenspan (1996).

OFFICIAL FOREIGN-EXCHANGE RESERVES

Chart 4



Note: Official foreign-exchange reserves do not include Sovereign Wealth Funds (SWF), which is especially important in relation to the Middle East. The size of the SWFs globally is not known for certain, but they are estimated to amount to 2,100-3,000 billion dollars in 2006, cf. IMF (2008). This corresponded to 40-60 per cent of the global official foreign-exchange reserves (excluding gold). See Schröder and Slotsbjerg (2008) for a more detailed description of the importance of SWFs for the global economy.

Source: IMF, International Financial Statistics.

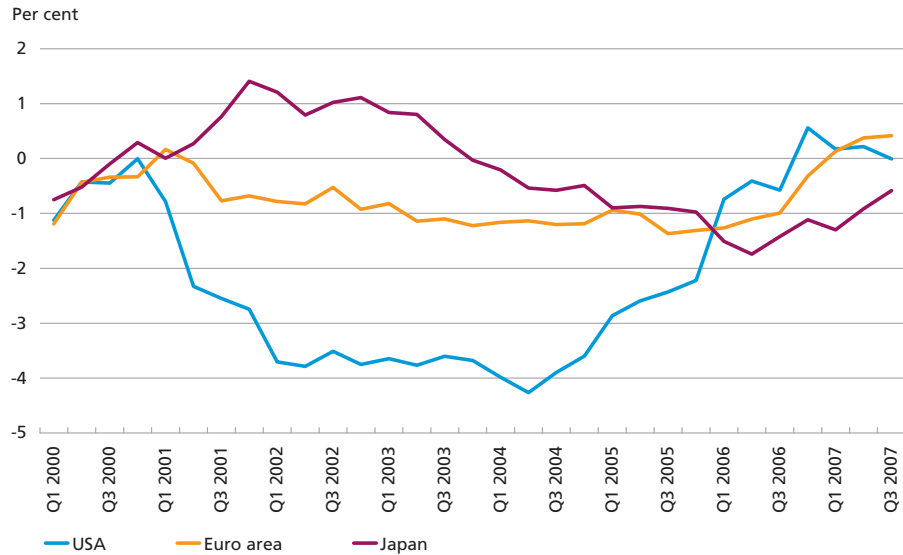
The bursting of the dotcom bubble led to strong expansion of monetary policy. Monetary-policy interest rates were lowered from 6.5 per cent at the end of 2000 to 1.75 per cent at end-2001, and further to 1 per cent in mid-2003. Meanwhile, it was announced that interest rates were likely to remain low for a considerable length of time.

In the years following the bursting of the dotcom bubble, the highly accommodative monetary policy reflected, among other factors, the Federal Reserve's concerns about the risk of deflation. The subsequent period saw no tightening of monetary policy since inflation remained relatively low. Not only did the low inflation reflect weak demand, it was also a temporary consequence of globalisation. Wage inflation in the manufacturing sector was dampened by concerns about relocation of production to abroad. Meanwhile, the volume of inexpensive goods – imported from e.g. China – rose strongly.

In light of low inflation and falling unemployment, monetary policy remained highly expansionary, cf. Chart 5. This resulted in "the global liquidity glut". Only the soaring housing prices – a housing bubble in the making – called for a tightening of monetary policy.

DEVIATION FROM TAYLOR RULE

Chart 5



Note: The Taylor rule is a mechanical calculation of what monetary-policy interest rates should be. The calculation is based on 1. potential growth, 2. the output gap and 3. the difference between expected inflation and the inflation target.
 Source: IMF, World Economic Outlook, April 2009, Chart 1.7.

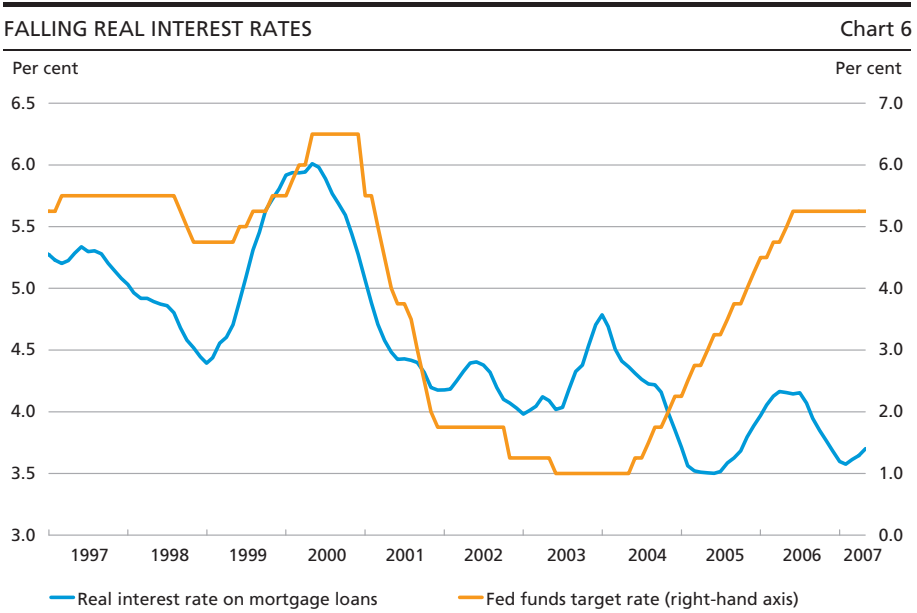
Excess spending in the USA: fiscal policy and "the twin deficits"

The large US budget deficits are also cited as one of the factors behind the current-account deficit, i.e. the "twin deficits". Fiscal policy was procyclical, especially from 2003. Taxes were cut to a considerable extent and public savings declined from 4.4 per cent of GDP in 2000 to -1.6 per cent in 2003. In combination with the too accommodative monetary policy and low private savings, the budget deficit may have contributed to the deterioration of the current-account deficit.

CONSEQUENCES OF THE GLOBAL IMBALANCES

The derived effects of the global imbalances partly depend on whether the global imbalances can be attributed to savings in the Asian and oil-exporting economies being pushed into the USA, or whether capital was pulled into the USA as a result of the too accommodative monetary policy and excess US spending.

If the primary cause of the global imbalances was excess savings and thus an excess supply of capital, the expected consequences would be rising stock and housing prices, falling risk premiums in the financial markets, a tendency for balance-sheet consolidation and declining real interest rates to ensure equilibrium between the supply of and demand for capital. This was actually observed, cf. Chart 6. In addition, the pro-



Note: Real interest rate on mortgage loans: 6-month moving average. Based on a 30-year fixed-interest mortgage loan guaranteed by Freddie Mac less core inflation.
 Source: Reuters EcoWin and own calculations.

ponents of this explanation point out that real interest rates continued to fall even after June 2004, when the Federal Reserve began to tighten monetary policy.

The combination of increased wealth and falling real interest rates prompted US households to reduce savings and increase spending. This resulted in US trade and current-account deficits.

The effect of excess savings was stronger in the USA than in other industrialised economies. Foreign-exchange reserves were to a large extent placed in the USA due to the dollar's status as the world's reserve currency, the legal security of the creditor and the perception of the US financial markets as the best regulated and most liquid in the world.

However, the observed data can be explained equally well by too accommodative monetary policy. When monetary-policy interest rates are low and expected to remain so for a long period, this will thus also lead to strong credit growth, a tendency for balance-sheet consolidation, declining risk premiums and rising housing and stock prices, resulting in increased spending. Only the decreasing real interest rates from 2006 onwards – a period of relatively fast tightening of monetary policy – seem difficult to explain.

Consequently, it seems fair to assume that both excess savings and too accommodative monetary policy contributed to the accumulation of

global imbalances.¹ However, the excess savings and too accommodative monetary policy also had more indirect consequences. The low return on safe assets and the small risk premiums created an environment where investors sought higher returns (e.g. by assuming higher risk) and new financial products were developed, e.g. collateralised debt obligations, CDOs, and other complex structured products with an obscure risk profile.

THE SIGNIFICANCE OF GLOBAL IMBALANCES FOR THE ECONOMIC CRISIS

For a long time, the global imbalances were identified as one of the most serious risk factors for the global economy, see e.g. IMF (2005).² It was feared that the large current-account and budget deficits would cause international investors to lose confidence in the US economy. This would put an end to demand for US securities, which would result in a plummeting dollar rate and rapidly climbing interest rates, reducing private consumption and investment.

This risk scenario has not materialised, so the financial crisis was not caused by the global imbalances. This is underscored by e.g. the IMF: "In the event, the crisis came in a different form: a sharp fall in confidence in the global financial system rather than a generalized run on dollar assets.", IMF (2009a).³ The dollar has, in fact, strengthened since the onset of the subprime crisis in the summer of 2007 as a result of "flight to safety".

Instead, the global imbalances can be regarded as a symptom of other underlying problems in the global economy, as observed e.g. by a member of the ECB's Governing Council: "The build-up of exceptionally large global imbalances in the last few years was an early symptom of the growing risks faced by the global economy. These risks have now materialised", cf. Bini Smaghi (2008).

The current crisis is caused by a combination of factors at both micro and macro level. As described above, excess savings and the accommodative monetary policy created a macroeconomic environment conducive to speculation for borrowed funds, increased risk appetite and

¹ An ECB Working Paper finds that the accommodative monetary policy has been the main factor contributing to the build-up of global imbalances, cf. Bracke and Fidora (2008).

² A number of specific recommendations were made in 2006 in connection with the IMF's Multilateral Consultation on Global Imbalances, which was held in order to reduce the global imbalances.

³ The IMF also states: "But a central role in the current crisis has been played by the failure of risk management in financial institutions and weakness in financial supervision and regulation.", IMF (2009b). According to the governor of the People's Bank of China, Zhou Xiaochuan, the global imbalances have played a far greater role: "The outbreak of the crisis and its spillover to the entire world reflect the inherent vulnerabilities and systemic risks in the existing international monetary system.", Xiaochuan (2009).

the development of complex financial products. All of these factors have contributed to the crisis.

Nevertheless, the global imbalances have intensified the crisis. As consumption and output in the industrialised economies grinded to a halt, export opportunities – and thus growth – disappeared for a number of export-driven economies. At the same time, falling output has led to lower commodity prices and thus reduced export revenue for the oil-exporting countries. The global imbalances, which also reflect the strong cross-border integration of product and capital markets, have thus contributed to the strong synchronicity of the crisis.

PERSPECTIVES AND CONCLUSION

Although the global imbalances did not directly trigger the crisis, they were symptomatic of underlying problems in the global economy. The factors that led to the build-up of the global imbalances were also contributory to the financial crisis.

The global imbalances can be attributed to a combination of

- capital exports to the USA driven by substantial structural savings in a number of emerging market and developing economies, and accumulation of reserves for policy reasons, e.g. exchange-rate policy;
- US capital imports (current-account deficit) driven by too accommodative monetary policy in the USA.

This had two consequences. The building up of global imbalances was immediately apparent. The other, more indirect consequence was that the macroeconomic environment created – with small risk premiums and low real interest rates on safe assets – induced investors to accumulate considerable risks. These risks have now materialised.

In the short term, the IMF estimates that the global imbalances will be significantly reduced in 2009 primarily due to falling investment activity. US savings are expected to decrease overall since growing household savings will be counterbalanced by a large budget deficit.

In the medium term, on the other hand, the trend in the global imbalances is more uncertain. The substantial structural propensity to save in e.g. China will decline only slowly. It takes a long time to implement structural reforms to strengthen domestic demand, improve the financial markets in China and reduce the need for precautionary savings. The medium-term development in US savings is more uncertain and depends strongly on the policy stance.

The risk of renewed increases in the global imbalances – and the ensuing risks to the global economy – in the medium term cannot be ruled out.

Although the global imbalances were not the direct cause of the current global recession, they did constitute a clear – easy to observe – indication that something was amiss. Large, persistent current-account deficits/surpluses can therefore not be ignored. A good foundation for safeguarding the stability of the international financial system could be to continue the Multilateral Consultation on Global Imbalances held in 2006 under the auspices of the IMF. The recommendations of the consultation included a reduction of the US budget deficit, appreciation of the Chinese renminbi, improvement of pension schemes in China and increased public investment in the oil-exporting countries. The recommendations are clear, specific and sensible, but difficult to implement.

Had the consultation recommendations been implemented to a higher degree, the crisis would probably have been less severe. However, the recommendations cannot be implemented overnight. It takes time to implement structural reforms, and appreciation of the renminbi requires a simultaneous structural change in China, away from export-driven growth, to prevent unemployment from rising.

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The Financial Crisis and Eastern Europe

Jakob Ekholdt Christensen, Economics

INTRODUCTION AND SUMMARY

After several years of high economic growth, many of the countries in Eastern Europe find themselves in dire economic straits as a result of the international financial crisis. The International Monetary Fund, IMF, expects the region's gross domestic product, GDP, to fall by 3.7 per cent in 2009 – a marked slowdown after an average annual growth rate of 5 per cent since the millennium rollover.

However, the degree to which the individual countries are affected by the crisis varies considerably. In the most exposed countries, i.e. the Baltic States, Hungary and Ukraine, GDP is expected to fall by up to 18 per cent. At the other end of the spectrum, Poland, Slovakia, Slovenia and the Czech Republic are "only" expected to experience a minor drop in GDP.

So far, the international community headed by the IMF has come to the rescue of seven Eastern European countries. In connection with Latvia's IMF programme, Denmark and other Nordic countries have contributed by approving bilateral loans and a swap facility. The IMF programmes have contributed to reducing instability in these countries, but considerable uncertainty still prevails regarding the outlook for the distressed economies.

There is a risk that the expected recession will have a significant impact on Western European countries due to the increasing economic and financial integration between the two regions. Eastern Europe is also an important export market for Denmark, while Danish banks are less exposed to the Eastern European market than other Western European banks.

The article focuses primarily on Denmark's most important trading partners in the region, i.e. the Baltic States, Belarus, Bulgaria, the Czech Republic, Hungary, Poland, Romania, Slovakia, Slovenia and Ukraine.

UNSUSTAINABLE GROWTH MIRACLE

The economic crisis in Eastern Europe has occurred after a very long period of strong economic growth and rising prosperity. The expansion

has to a large extent been financed by massive foreign lending. This has created an economic environment conducive to growing imbalances, cf. IMF (2009a), which has made the region highly vulnerable to the sudden slowdown in international credit that occurred in the autumn of 2008.

CONVERGENCE IN THE FAST LANE

During the last decade, the Eastern European countries have experienced considerable convergence in their standard of living compared to the rest of the EU, cf. Chart 1. In 2000, average income per capita in most of the countries was just half of the total EU average. In Belarus, Russia and Ukraine the income level was even lower.

In 2001-07, the countries experienced constant economic expansion. The Baltic States doubled their level of income during this period. Together with Belarus, Russia and Ukraine, Romania experienced significant economic growth.

In 2007, the income level in most of the countries exceeded half the EU average. There was still a wide gap, however, between the poorest countries (Belarus and Ukraine) and Slovenia that almost matched the EU average.

One of the reasons for the high growth was the increasing economic and financial integration with the EU. Easier access to the large Western European market meant improved export opportunities, and exports from the Eastern European countries to the "old" EU member states increased by 7 percentage points of GDP after they joined the EU, cf. the European Commission (2009a).

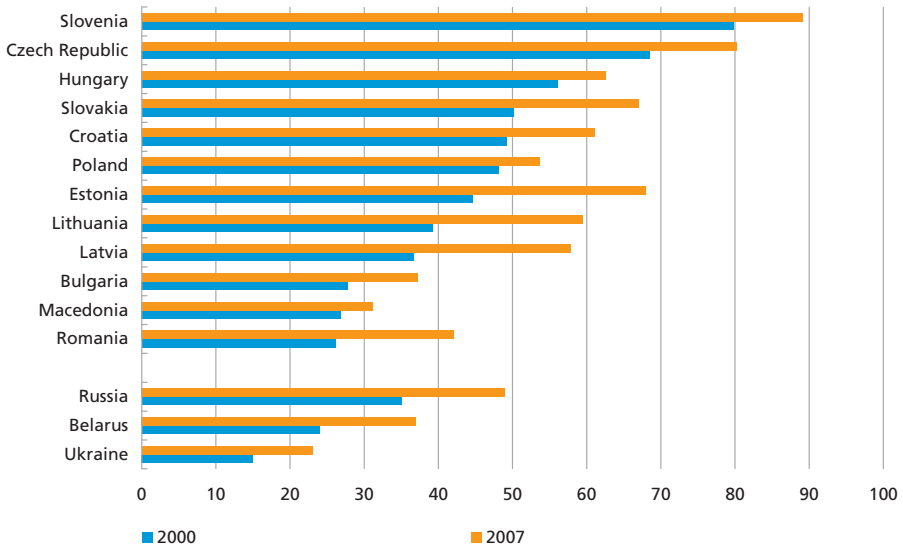
At the same time, Western European banks expanded strongly in Eastern Europe. Early in the period this meant increasing market shares for foreign banks, which grew from just under one third to more than two thirds in Bulgaria, Poland, Romania and the Czech Republic in the period 1998-2003. External competition pushed lending rates down, thereby easing the private sector's financing costs.

Liberalisation of the economies also increased their growth potential. Bulgaria, Estonia, Romania and the Czech Republic improved their business climate to the benefit of foreign and domestic investments, cf. the European Commission (2009a). Thus, annual foreign direct investments increased from 13 to 72 billion dollars in the 2003-07 period, cf. Chart 2.¹ In addition to increasing production capacity in the recipient countries, the foreign investments also led to technology- and knowledge transfer.

¹ Denmark's direct investments in Eastern Europe amounted to kr. 47 billion or 6 per cent of Denmark's total foreign direct investments.

INCOME PER CAPITA RELATIVE TO EU AVERAGE

Chart 1



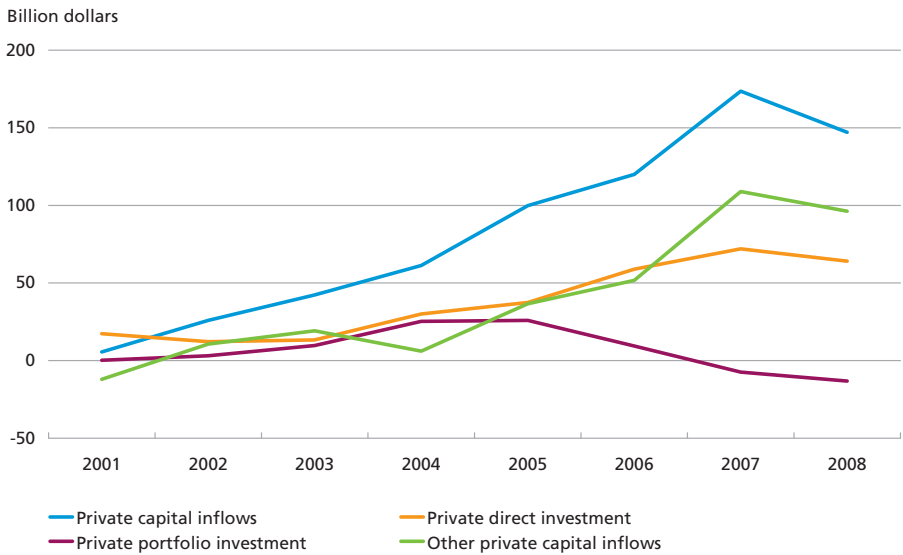
Source: Reuters EcoWin and Eurostat.

Growing imbalances

Foreign capital inflows rose substantially from 2004, primarily driven by the banks' increased foreign borrowing. The foreign loans helped finance a considerable credit expansion with lending growth far above 10

CAPITAL INFLOWS TO CENTRAL AND EASTERN EUROPE

Chart 2



Note: Banks' foreign borrowing is included in other private capital inflows.

Source: IMF (2009b).

per cent in many countries. Many of the loans were granted in foreign currency and were primarily used to finance housing purchases and consumer credit. 80 per cent of the outstanding credit to households and business enterprises in Latvia and Estonia were denominated in foreign currency in 2007, cf. the European Commission (2009a). The pronounced credit increase meant that growth was increasingly driven by domestic demand, cf. Chart 3.

The high growth resulted in falling unemployment and rising wages. This pushed up inflation significantly in many countries, so in 2008 it reached 25 per cent in Ukraine, 15 per cent in Latvia, 12 per cent in Bulgaria, 11 per cent in Lithuania and 10 per cent in Estonia. Part of the increase was also caused by external factors such as rising food and energy prices as well as adjustments in direct and indirect taxes, cf. Martin and Zauchinger (2009). The higher rate of wage increase and inflation led to a weakening of the countries' competitiveness.

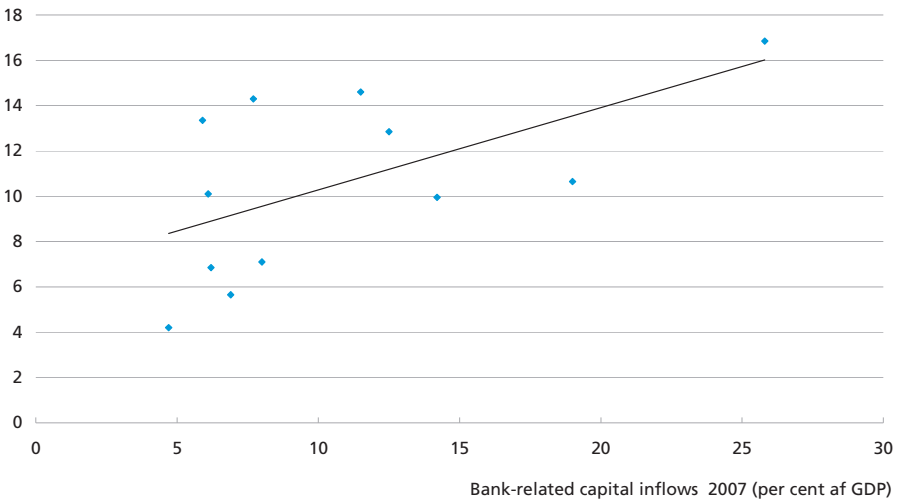
Despite clear signs of overheating in several countries, economic policies remained largely neutral or even slightly expansionary in some cases. The boom in these economies led to an improvement in government finances and in most cases only small budget deficits. However, the cyclically adjusted fiscal balances deteriorated from 2005-07 in the three Baltic States and Bulgaria and Romania.

Strong domestic demand led to increasing current-account deficits: from about 5 per cent of GDP in 2000 to 25 per cent in Bulgaria, 23 per

CAPITAL INFLOWS AND GROWTH IN DOMESTIC DEMAND (2006-07)

Chart 3

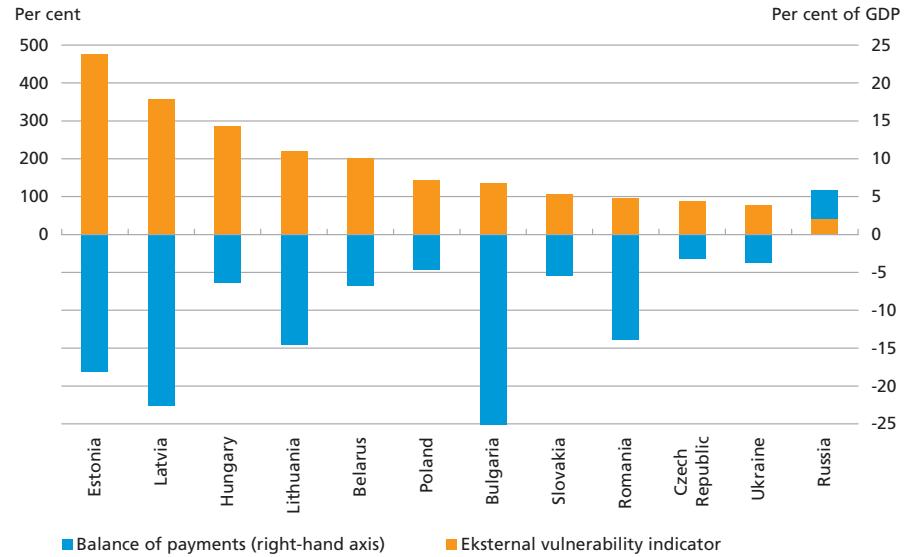
Contribution from domestic demand to GDP growth (per cent)



Source: IMF (2009a) and European Commission (2009b).

EXTERNAL VULNERABILITIES AND BALANCE OF PAYMENTS IN EASTERN EUROPEAN COUNTRIES

Chart 4



Note: Data is for 2008. The external vulnerability indicator is defined by Moody's as the sum of short-term foreign debt, current repayments on long-term debt and foreign bank deposits with a maturity of over 1 year, divided by the central bank's foreign-exchange reserves
 Source: Moody's (2008).

cent in Latvia, 18 per cent in Estonia, 15 per cent in Lithuania, and 14 per cent in Romania in 2007.

Because the current-account deficits in several countries were increasingly financed by short-term foreign debt, the countries became more vulnerable to sudden drops in capital inflows, cf. Chart 4. The most vulnerable countries were the Baltic States, Belarus, Hungary and Poland. Their currencies could come under pressure if foreign investors were to stop their transfer of capital.

SUDDEN FOREIGN CAPITAL FREEZE AND ECONOMIC CRISIS

Up until the summer of 2008, it was generally believed that the emerging markets would escape the economic crisis that prevailed in the USA and Western Europe – the "decoupling hypothesis". The region showed beginning signs of weakness with stagnating housing markets and more careful credit policies among the banks in the Baltic States, cf. Martin and Zauchinger (2009), and a tightening of Hungary's fiscal policy, cf. the IMF (2008), but economic growth remained strong in most countries.

In the autumn of 2008, the Eastern European countries were seriously hit by the global crisis. In the wake of the collapse of Lehman Brothers, risk aversion increased dramatically in the international financial mar-

kets. At the same time, the escalating crisis forced Western banks to reduce their balance sheets. The result was plummeting capital transfers to Eastern Europe and other emerging markets.¹

Meanwhile, demand for exports from the industrialised countries dropped sharply. The decline was especially pronounced in Russia (-10 per cent), Slovenia (-17 per cent), the Czech Republic (-17 per cent) and Hungary (-18 per cent).

Commodity-producing countries such as Belarus, Russia and Ukraine were further hit by collapsing export prices. After the decoupling hypothesis was disproved, commodity prices began to fall over the summer of 2008. Steel and oil prices fell by 60 and 70 per cent, respectively, from June to December.

Uncertainty as to the external situation of these countries increased due to the external shocks. Risk premiums measured as the price of insurance against failure to meet credit obligations (the credit default swap spread) subsequently rose significantly. The most risky countries according to this measure were the Baltic States, Bulgaria, Romania, Russia and particularly Ukraine.

The uncertainty led to increasing pressure on these currencies. In countries with floating exchange rates, i.e. Belarus, Poland, Russia and Ukraine, exchange rates fell by more than 30 per cent against the euro from October to March. Countries with fixed exchange rates, i.e. Bulgaria, Estonia, Latvia and Lithuania, spent large proportions of their foreign-exchange reserves on defending their currencies. Latvia lost almost a third of its foreign-exchange reserves when the crisis intensified in November 2008.

The currency unrest increased the fear of an actual financial collapse, especially due to the private sector's major liabilities denominated in foreign currency. Drastic measures were needed to stop the crisis and prevent it from spreading to the rest of Europe.

MANAGING THE CRISIS

The most severely affected countries quickly applied to the IMF and the EU for help. Other seriously affected countries are trying to cope with the crisis on their own. The least affected countries (the Czech Republic, Slovakia and Slovenia) have differentiated themselves from the weaker countries in the region and in some cases provided assistance to their crisis-stricken neighbours.

¹ The IMF (2009b) estimates that the region will face net capital outflows totalling just over 40 billion dollars in 2009 compared to capital inflows of 147 billion dollars in 2008.

Ukraine and Hungary were the first countries to apply to the IMF for help in November 2008. Since that time, Serbia, Latvia, Poland and Romania have joined the group of programme countries, cf. Table 1. Poland's programme makes use of the IMF's new flexible credit line, a liquidity facility for countries normally pursuing sound macroeconomic policies, but which may need foreign capital injections in case of severe external shocks like the current financial crisis.

So far, the IMF has made 75 billion dollars available. In view of the substantial financing needs, the programmes are exceptionally large. Even after a recent doubling of the limit, a country can normally only borrow up to six times its IMF quota. But in the case of the Eastern European countries, the loans made available are up to 11 times their quota.

Through its balance of payments facility the EU has contributed to EU member states (Latvia, Romania and Hungary), and to the candidate country Serbia. In total, the EU has made 23.6 billion dollars available. Due to strong demand, the EU has raised the balance of payments ceiling twice to the current 50 billion euro or just over 70 billion dollars.

Bilateral assistance has also been provided. In connection with the IMF programme with Latvia, Denmark and other Nordic countries have made commitments for government loans totalling 2.5 billion dollars. Prior to the adoption of the IMF programme last December, Danmarks Nationalbank and Sveriges Riksbank concluded a swap agreement for 125 and 375 million euro, respectively, with Latvijas Banka. The agreement expired at the end of March. Sveriges Riksbank renewed its swap agreement on 8 May and at the same time raised the limit to 500 million euro.

Country	Date	IMF contribution (billion dollars)	Per cent of country's IMF quota	EU contribution (billion dollars)	Total assistance (billion dollars)
Ukraine (SBA)	Nov 2008	16.5	802	0	16.5
Hungary (SBA)	Nov 2008	15.7	1,015	8.2	25.0
Serbia (SBA precautionary arrangement) ²	Jan 2008	0.4	50	4.3	10.5
Latvia (SBA)	Dec 2008	2.4	1,200	4.3	10.5
Belarus (SBA)	Jan 2009	2.5	419	0	2.5
Poland (FCL)	May 2009	20.6	1,000	0	20.6
Romania (SBA)	May 2009	17.1	1,111	6.6	26.4
Total		75.0	n.a.	23.6	111.8

Source: IMF-country reports (www.imf.org).

¹ In addition to the IMF and the EU, other multilateral institutions, primarily the World Bank and the European Bank for Reconstruction and Development, EBRD, and bilateral countries also contribute to the programmes in some countries.

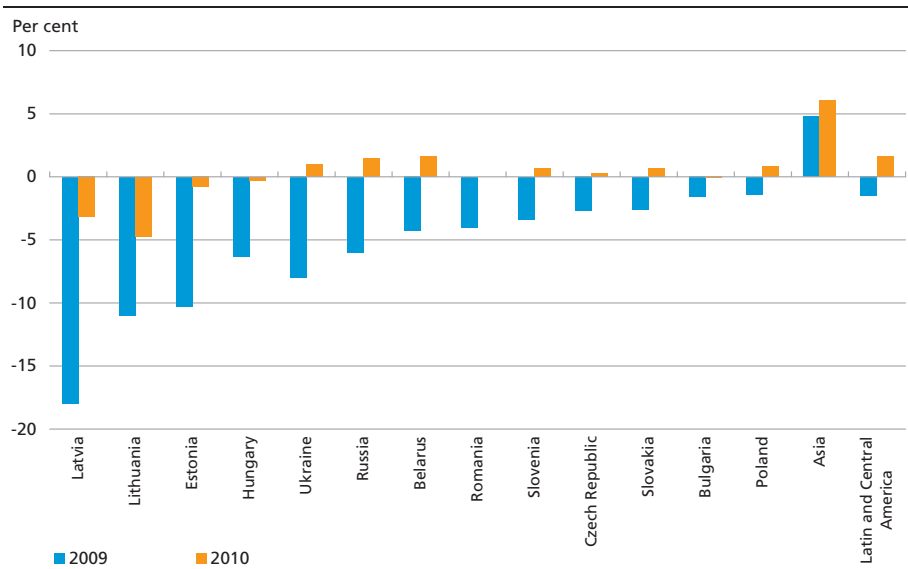
² The programme was extended to 3.9 billion dollars on 21 May 2009.

Despite the foreign aid, the countries are facing a painful adjustment of their economies. In view of falling tax revenue and lack of financing, most countries are tightening their fiscal policies. All three Baltic States are planning a substantial fiscal policy tightening.

The collapse in domestic and foreign demand means that many of the countries are expecting major GDP drops in 2009. An average drop of 6 per cent is expected in 2009 and a further 0.2 per cent drop in 2010, cf. Chart 5. This is far worse than in other regions with emerging markets, e.g. Asia and Latin America. The Baltic States are facing the deepest recession with a GDP drop of 10-18 per cent.

The countries are also strengthening their financial sectors by making liquidity facilities available and facilitating capital injections into banks. It is a significant challenge to maintain the involvement of foreign banks. These banks are also under severe pressure in terms of liquidity and solvency. If the foreign banks withdraw and stop lending to their Eastern European subsidiaries, this may have severe consequences for financial stability and economic growth in those countries. In connection with the IMF programme with Romania, the foreign banks made a joint agreement to maintain their commitments there. This agreement was named the Vienna Initiative, and it is hoped that it can be applied in other crisis-stricken countries.

GROWTH OUTLOOK FOR 2009-10 Chart 5



Source: Most of the countries, cf. European Commission (2009b). Russia, Belarus and Ukraine, cf. IMF (2009b). Latvia, cf. announcement from the ministry of finance of Latvia, 1 June (fm.gov.lv).

CONSEQUENCES OF THE CRISIS FOR DENMARK AND THE REST OF WESTERN EUROPE

When the turmoil intensified in Eastern Europe in the autumn of 2008, the market risk assessment of several Western European countries and their banks also increased. This is not surprising in view of the close economic and financial relations established between the two regions in recent years. Hence, the market fears that an escalation of the economic crisis in Eastern Europe will send shockwaves through some Western European economies.

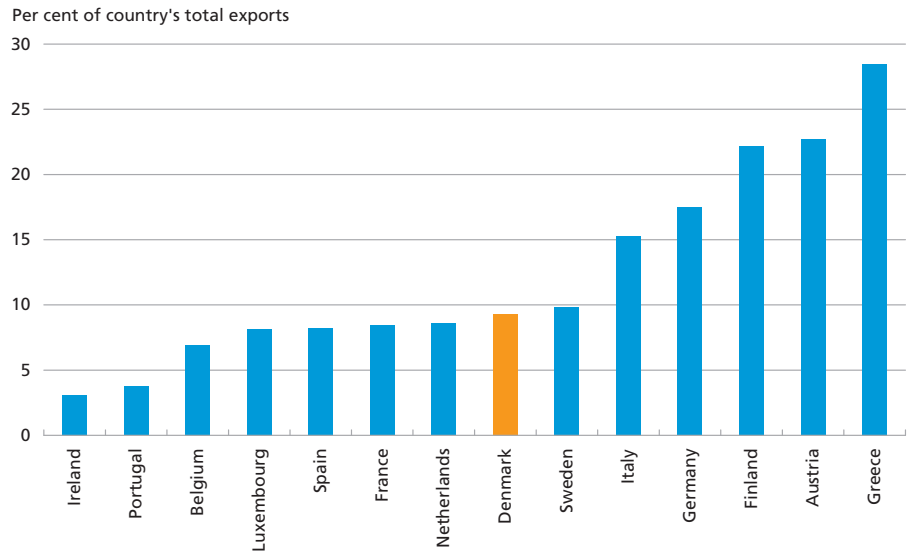
INTERNATIONAL TRADE EFFECTS

The Eastern European countries' share of euro area exports has grown in recent years. On average, these countries purchased almost 13 per cent of the euro area member states' goods exports in 2008, cf. Chart 6. The deep recession expected in Eastern Europe in 2009 is likely to have a sizeable impact on Western European export businesses, particularly in Greece, which sends one third of its exports to the Eastern European countries. The same applies to Austria, Finland and, to some extent, Germany.

While Denmark has relatively significant exports to Eastern Europe, the greater share goes to countries that are less severely affected by the

EXPORTS TO EASTERN EUROPE, 2008

Chart 6

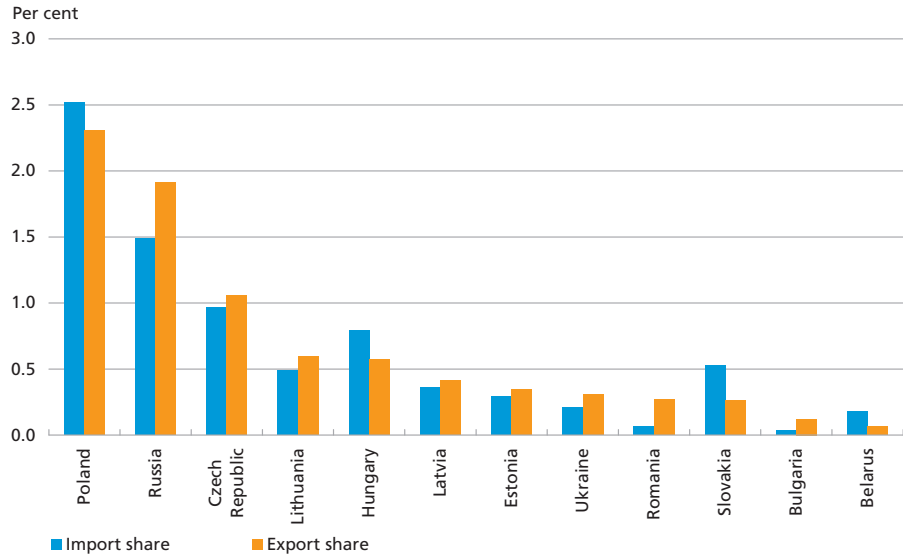


Note: Exports to Central and Eastern Europe and Belarus, Russia and Ukraine.

Source: IMF, Direction of Trade Statistics database (www.imf.org).

DENMARK'S EXPORTS AND IMPORTS TO SELECTED EASTERN EUROPEAN COUNTRIES

Chart 7



Note: Percentages of total exports and imports.

Source: Statistics Denmark.

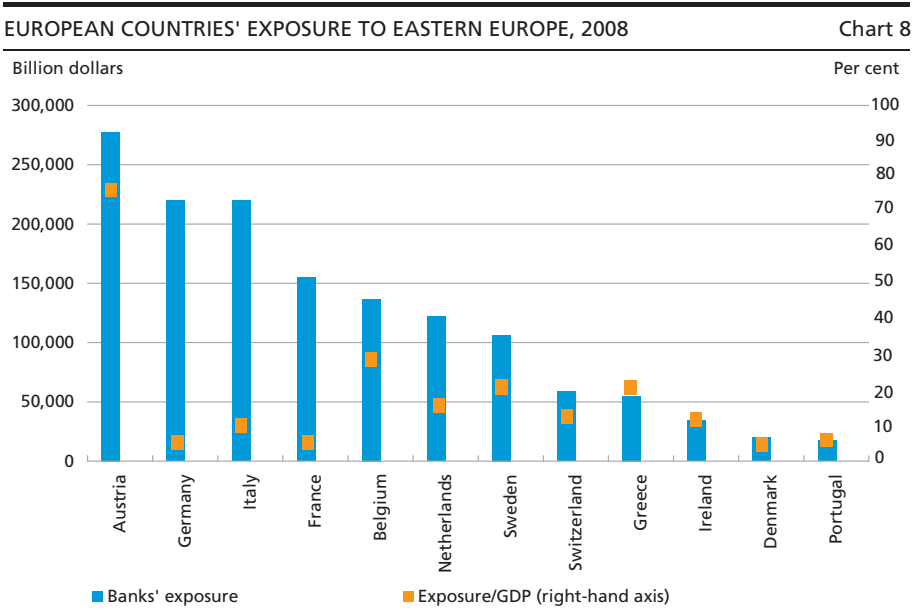
crisis. Denmark's exports to these countries totalled just over kr. 55 billion in 2008, or approximately 9 per cent of its total exports. The three most important export countries in the region are Poland followed by Russia and the Czech Republic. They account for 5 per cent of Danish exports, cf. Chart 7. A small proportion goes to the crisis-stricken economies, such as the Baltics, Ukraine and Hungary.

FINANCIAL EFFECTS

Many Western European banks have accumulated large exposures to the Eastern European market through acquisitions, cf. Fitch Ratings (2009). For a number of years, the investments have yielded high returns, but with the deep recession, banks now risk incurring major losses as a result of rapidly increasing number of non-performing loans.

The banking sectors of Austria, Belgium, Greece and Sweden are most exposed to Eastern Europe, cf. Chart 8. In September 2008, Austrian bank loans to Eastern Europe amounted to just over 75 per cent of GDP. Belgium and Sweden also had considerable exposures amounting to about 25 per cent of GDP.

For Austria and Belgium, lending is spread over many countries. In Sweden's case the exposure is concentrated on few countries. In 2008,



Note: Central and Eastern Europe (including Russia, Ukraine, Belarus). Data for Denmark are from Danmarks Nationalbank, while data for the other countries are from Fitch Ratings (2009).
 Source: Fitch Ratings (2009) and Danmarks Nationalbank.

the Baltic States received about two thirds of Swedish bank loans to the Eastern European countries, and the crisis in the Baltics may therefore have a sizeable impact on Swedish banks.

In Germany, Italy and the Netherlands, the exposure is relatively smaller, although lending is concentrated on few countries. German and Dutch banks have mainly granted loans to Poland and Russia.

Danish banks have a relatively limited exposure to Eastern Europe compared with other Western European countries. The total exposure amounts to kr. 110 billion, or just under 6 per cent of GDP, with Lithuania accounting for 36 per cent, and Estonia, Latvia and Poland accounting for approximately 20 per cent each.

The most exposed Western European banks are expected to incur major losses due to the poor economic outlook. Fitch Ratings (2009) has analysed these consequences under various stress scenarios. In its analysis the agency allows for differences in the scope of the crisis between Eastern European countries and the country exposures of Western European banks.

The worst-case scenarios take into account that the share of bad loans in the countries most severely affected may reach the same heights as during the Asian crisis, i.e. 30 per cent of total lending, or in extreme cases about 60 per cent.

Not surprisingly, Austria stands to incur the largest credit losses. In the most pessimistic scenarios the equity of the country's three largest banks will be considerably reduced.

In other Western European countries with substantial exposures to Eastern Europe, the losses are somewhat smaller. Given the relatively limited exposure of Danish banks, losses on loans to Eastern Europe are not expected to be of particular significance.

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Wage Development in Denmark

Peter Ejler Storgaard, Economics

INTRODUCTION AND SUMMARY

Wage formation is key to the development in prices and costs. The reason is that labour is often the most important production factor and the development in the costs of business enterprises is therefore highly dependent on wage development. Through their impact on costs, wages also become an important element in price setting.

In an open economy such as the Danish one, wages also play a key role in relation to competitiveness. Higher wage increases than abroad lead to deteriorating competitiveness unless the excess wage increase is based on more favourable productivity development. Due to its impact on competitiveness, wage formation is also potentially important in relation to reducing cyclical fluctuations in economies with substantial foreign trade. The mechanism implies that deteriorating competitiveness resulting from excessive wage increases has an adverse impact on exports and increases unemployment. Declining pressures on the labour market gradually lead to lower wage increases than abroad, thereby restoring competitiveness and equilibrium in the economy.

In recent years, globalisation has increased cross-border trade in goods and services and led to fiercer price competition. Stronger competition has put further pressure on business enterprises to streamline their production and keep costs down, so globalisation has also had an impact on wage formation. The integration of China and other countries into the international division of work has contributed to expanding the global labour force, and at the same time labour-market integration has improved, especially in Europe. There has also been a large influx of foreign labour to the Danish labour market in recent years, cf. Pedersen and Riishøj (2008). Because of these changes, the development in wages and unemployment abroad now has greater impact on wage formation in Denmark than previously.

The last 20 years have seen structural labour-market changes in Denmark that have resulted from politically determined labour-market reforms as well as agreements between the social partners. The labour-market reforms have increased the incentive to seek employment since

the mid-1990s due to tightening of unemployment benefit structures and increased use of activation schemes. A significant development in the system of agreements was the trend in the early 1990s towards more decentralised wage bargaining, as a result of which wages are increasingly determined at enterprise level.

The labour-market reforms have lowered structural unemployment, i.e. the unemployment level that is compatible with stable wage and price developments a few years ahead. At the same time, actual unemployment decreased substantially from the peak of around 350,000 persons in 1993 to the latest trough of around 50,000 in 2008. The substantial drop in unemployment occurred without the rate of wage increase rising as much as warranted by estimated wage models. The deviations have been permanent, and the previous wage models can almost be said to have broken down. From a modelling perspective, there are several possible solutions to the problems. One possibility is to allow a break in the relationship between wages and unemployment, e.g. in connection with the labour-market reforms implemented, the decentralisation of wage bargaining or globalisation. Alternatively, it might be considered whether developments are better explained using other models.

The article concludes with an empirical analysis of wage development in Denmark from 1975 to 2007. The results indicate that in the long term Danish wage development can be described by a real-wage curve. A statistical test shows that while restrictions corresponding to the Phillips curve in Hansen (1998) are rejected at a 5 per cent level of significance, restrictions corresponding to the real-wage curve are accepted.

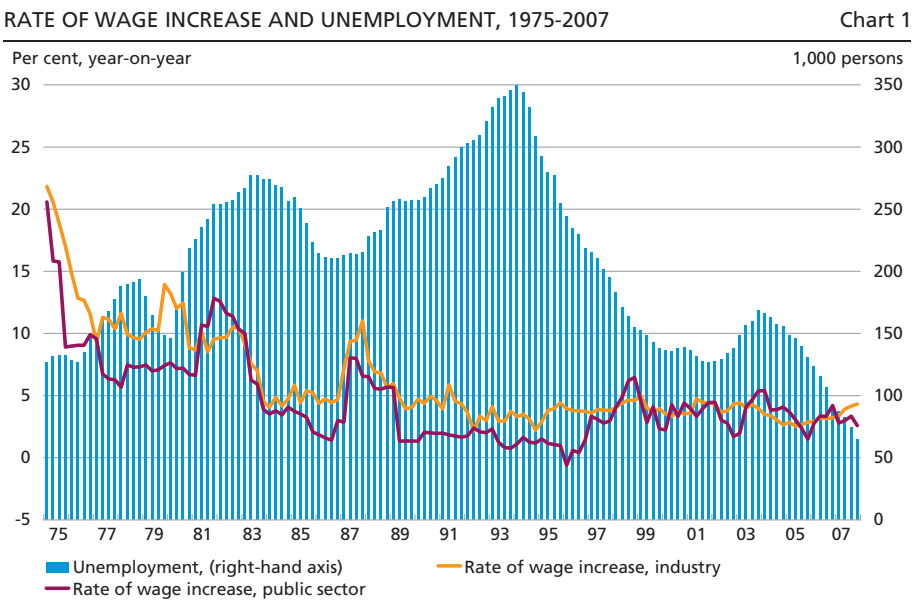
When wage formation follows a real-wage curve, price increases will eventually be fully reflected in wages. In the longer term, productivity improvements are also fully reflected in wages, so the long-term wage share remains unchanged. Besides, the estimated long-term relationship implies that, all other things being equal, a higher unemployment rate pushes real wages down, while higher unemployment benefits increase real wages.

In contrast to the traditional Phillips curve, it ensues from the real-wage curve that an economic policy seeking to reduce unemployment by stimulating demand will not have the desired effect in the long term. The higher prices, as well as the increased employment and production, resulting from the expansionary policy will gradually lead to corresponding wage increases. Real wages and employment will therefore fall back to the baseline, and the ultimate result will only be higher prices and wages, not lower unemployment. The model framework also implies that to reduce unemployment permanently, structural improvements to the labour and product markets are necessary.

Finally, a wage model to explain short-term wage changes is also estimated. All other things being equal, the rate of wage increase tends to be lower if wages have increased too much in relation to the long-term equilibrium level resulting from the real-wage curve. The estimated adjustment coefficient is modest, however, so the movement towards the equilibrium wage takes some time. In the short term, wage increases are also dependent on changes in consumer and producer prices and on changes in agreed working hours.

WAGE DEVELOPMENT AND THE LABOUR MARKET

In a longer-term perspective, the rate of wage increase since the mid-1990s has been relatively subdued in view of the growing labour-market pressure, cf. Chart 1. Calculated on a quarterly basis, the annual rate of wage increase in industry was thus between 2.5 and 5.0 per cent. The rate of price increase in the same period was low and stable, and consequently real wages in industry rose year by year. Wage increases in the public sector are in accordance with those in industry, but have fluctuated a bit more. The close link between wage increases in the public and private sectors should also be viewed in the light of the regulation scheme under the public-sector collective agreements, the purpose of which is to ensure parallel wage development.



Note: Quarterly data.

Source: Danmarks Nationalbank, MONA databank.

Traditionally, empirical analyses focus on wages in industry, where the best long-term data is available. Industry's share of the economy is under 20 per cent and slightly declining, however, and it might therefore be more natural to examine wages in the private sector overall. As shown in Chart 2, wages in the private sector continue to follow wages in industry very closely, and the article will therefore consider wage development in industry – more specifically Statistics Denmark's wage index for industry.¹

The Danish labour market has undergone a number of reforms since the mid-1990s.² The maximum unemployment benefit entitlement period was gradually reduced to the current four years, and it is no longer possible to regain the right to unemployment benefits by activation. The "passive" period before an activation process is initiated has been significantly reduced. Requirements for the unemployed to be available for work have been tightened on an ongoing basis, and sanctions have been made more stringent. Most recipients of cash benefits are now subject to the same availability rules as unemployment benefit recipients. Special measures have been implemented for unemployed persons under the age of 25, including a lower benefit level, and this has led to a significant drop in youth unemployment. Finally, unemployment benefits have not increased at the same rate as wages, thus reducing the replacement ratio in the event of unemployment. As a result of the reforms, structural unemployment, i.e. the level of unemployment that is compatible with a stable development in inflation over a few years, is estimated to have declined by more than half since 1995, cf. the Ministry of Finance (2009).

In addition to the changes in the regulatory framework, the system of bargaining between the social partners has also evolved. With regard to wage formation, decentralisation of the determination of wages is particularly important. There has been a trend away from the standard wage system, whereby hourly wages are determined centrally in connection with collective bargaining, towards the minimum-wage/minimum-pay system with collective agreements stipulating only a minimum rate and individual business enterprises negotiating the final hourly wage. Industry has a long-standing tradition for annual wage bargaining at enterprise level.

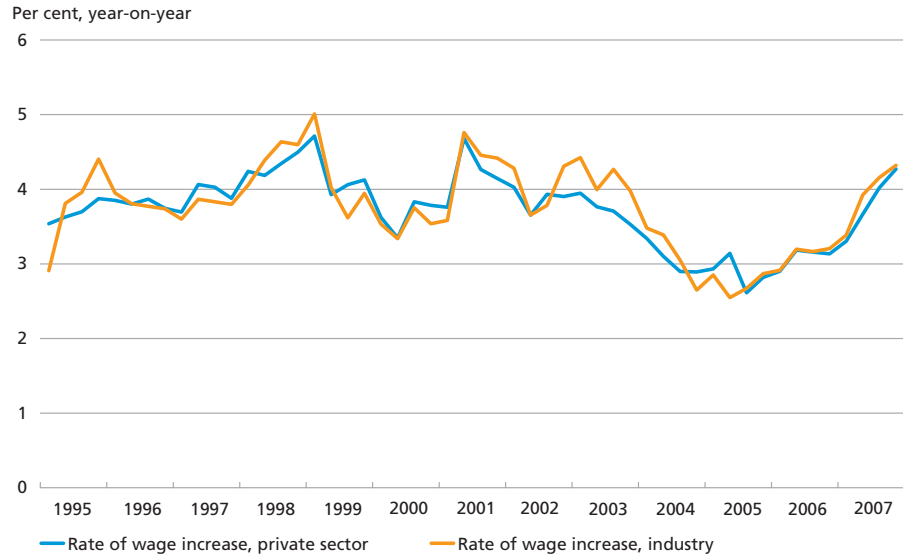
The average duration of collective agreements has increased from the standard two years up until the mid-1990s to the current three years.

¹ Statistics Denmark has switched to the new industrial classification DB07. The data basis for this article is the previous industrial classification, DB03.

² An overview of the most important labour-policy measures since 1993 can be found in the Appendix to Pedersen and Riishøj (2007).

RATE OF WAGE INCREASE IN INDUSTRY AND IN THE PRIVATE SECTOR,
1995-2007

Chart 2



Note.: Quarterly data.

Source: Statistics Denmark and Danmarks Nationalbank, MONA databank.

This should presumably be viewed in the light of increasing price stability and the trend towards the minimum-wage/minimum-pay system. Thanks to the possibility of wage regulation within the agreement period, the longer duration of the agreements does not necessarily reduce flexibility.

Labour-market structures have improved as a result of the reforms, and the Danish labour market is seen to be relatively flexible compared with those of other European countries. Comparisons of countries show that institutional conditions differ considerably, cf. the questionnaire survey in Du Caju et al. (2008). Developments since the mid-1990s have not changed this, although a general trend towards more decentralised wage bargaining can be seen. The wage bargaining level is among the most significant structural differences between the countries, as bargaining takes place centrally in some countries and at industry, sector or enterprise level in others. The rate of employee unionisation, which is relatively high in Denmark, varies considerably from country to country, but even so, a large proportion of employees are covered by a collective agreement in most European countries. This is often due to the extension of collective agreements to include unorganised employers and non-union employees. In many countries the average duration of the agreements is shorter than in Denmark, and unlike Denmark, almost half the countries in the survey apply some sort of indexation of wages in relation to prices.

The rest of the article is structured as follows: first it describes two wage formation models (the Phillips curve and the wage-bargaining model) in more detail with a view to demonstrating their implications for a wage relation. An empirical analysis is subsequently conducted to examine the ability of the two models to explain the wage development in Denmark.

ECONOMIC THEORY ON WAGE FORMATION

The Phillips curve describes the empirical relation between the rate of wage increase and the level of unemployment, cf. Phillips (1958). The lower the unemployment level, the higher the rate of wage increase. Simply put, the demand for labour is lower than the supply when unemployment is high. Lower demand than supply pushes the price of labour (wages) down. As mentioned above, the Phillips curve focuses on the rate of wage increase rather than the wage level, so, to be precise, the rate of wage increase is expected to be lower when unemployment is high.

The focus on wage changes also means that the Phillips curve as such does not determine the wage level at a specific unemployment level. This is considered a weakness in the model, but in a larger economic model the wage level does not have to be undetermined. A low wage level leads to strong competitiveness, export growth, increased employment and reduced unemployment. At a lower rate of unemployment, the rate of wage increase is pushed up through the Phillips curve, thereby increasing the wage level until the competitive edge is eliminated.

The simple Phillips curve has been extended to include the rate of price increase as a further explanatory factor. Higher price increases drive up the cost of living and thereby wage demands on the part of employees. Lipsey (1960) showed that a larger share of the fluctuations in the rate of wage increase could be explained by including inflation in the Phillips model.

It is open to discussion whether the historical, the current or the expected future price rises should be included in the Phillips curve. In an empirical perspective this is less important, however – particularly when inflation is relatively stable. In the absence of good statistics on expected inflation, current and historical inflation rates are often used in any case.

The relationship between the rate of wage increase and unemployment has given rise to much discussion over the years, due not least to its impact on economic-policy options. When introduced, the Phillips curve was interpreted to the effect that economic policy faced a trade-off between unemployment and wage and price increases. By stimulat-

ing demand it was possible to reduce unemployment through economic-policy measures, but at the cost of higher wage and price increases.

From the late 1960s, economists began to realise that while it might be possible to reduce unemployment in the short term by stimulating demand, the effect was not permanent. In the long term, price increases will be fully reflected in wage increases (homogeneity), resulting in a vertical Phillips curve. As a result, the trade-off between inflation and unemployment disappears – in the long term, unemployment is the same regardless of the rate of inflation. The concept "natural rate" of unemployment is defined as the long-term rate of unemployment corresponding to the vertical Phillips curve, cf. Friedman (1968) and Phelps (1968).

A simple formulation of the Phillips curve is

$$\Delta W = \alpha + \beta \Delta P + \gamma \Delta Q - \phi U + e,$$

where the rate of wage increase, ΔW , depends on the level of unemployment (U) and on increases in the price of consumer goods (ΔP) and of the enterprises' output (ΔQ).

The Phillips curve is a commonly used wage model, but it has been criticised for lacking theoretical foundation. The economic literature also contains more theoretical models describing wage formation. These include wage-bargaining models that see wages as the result of bargaining between unions and employer organisations, cf. e.g. Layard, Nickell and Jackman (2005). The theory is based on business enterprises and their organisations seeking to maximise profits, while workers and unions want to maximise their utility, which is affected positively by real wages and negatively by the rate of unemployment. The model also takes into account the fact that a collapse in bargaining prevents business enterprises from producing, while workers may get benefits from a strike fund.

The wage-bargaining model leads to a wage relation, with wages depending on factors affecting the profits of business enterprises and the utility of employees as well as the relative bargaining strength of the parties. For example, higher sales prices would enable enterprises to pay higher wages, while higher consumer prices would increase employee wage demands. In analogy with the Phillips curve, the unemployment level also affects wages – higher unemployment reduces the workers' utility and may put strike funds under pressure. On the other hand, higher unemployment may increase the probability that a worker is eligible to participate in an activation or education/training programme, thus increasing the worker's utility.

The wage relation of the wage-bargaining model describes the relationship between the product real wage – the wage viewed in relation to the producer's sales price – and productivity (A), the ratio (wedge) between the consumer real wage and the product real wage (P/Q) and unemployment

$$\frac{W}{Q} = \alpha + \beta A + \gamma \frac{P}{Q} + \phi U,$$

where the constant includes bargaining strength and any other factors. This real-wage curve may apply in the long term, while the short-term rate of wage increase also depends on consumer and producer price increases, e.g.

$$\Delta W = \alpha + \beta \Delta P + \gamma \Delta Q - \chi ecm + e,$$

where ecm indicates the difference between the actual wage and the equilibrium wage according to the real-wage curve. The specification ensures that, over time, wages move towards long-term equilibrium.

A WAGE RELATION

The empirical analysis in the Appendix leads to a wage relation based on the real-wage curve. The wage relation describes the short-term wage development and the way wages adjust to the long-term real-wage level.

The estimated wage relation that explains the quarterly changes in industry's hourly wages can be written as follows¹

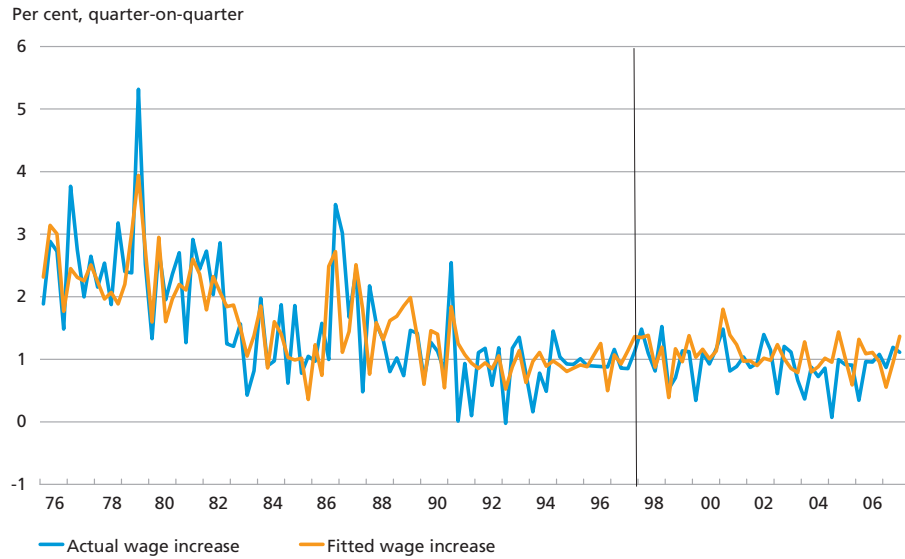
$$\begin{aligned} \Delta w_t = & -0.023 + 0.28 * \Delta w_{t-3} + 0.17 * \Delta p_t + 0.26 * \Delta p_{t-2} \\ & + 0.071 * \Delta q_{t-1} - 0.97 * \Delta h_t - 0.041 * ecm_{t-1}, \end{aligned}$$

where Δh is the quarterly change in (the logarithm of) the agreed working hours. The relation explains 61 per cent of the variation in quarterly wage changes. The long-term relationship ecm is significant in the estimated relation, but as the coefficient is numerically small, the adjustment to the long-term equilibrium is not strong. The level of unemployment is not included in the wage relation. The results therefore indicate a real-wage equation rather than a Phillips curve. In the short term, wage increases also react to changes in consumer and producer prices and to changes in agreed working hours.

¹ In the following, lower-case letters indicate the natural logarithm of the corresponding upper-case letters.

FORECASTING PROPERTIES OF THE WAGE RELATION

Chart 3



Note: The vertical line indicates the end of the estimation period.

Source: Statistics Denmark, Danmarks Nationalbank (MONA databank) and own calculations.

Misspecification tests do not indicate any major problems with the model, although the residuals do not appear to be normally distributed. Recursive estimations, where the model is re-estimated on an ongoing basis with a fixed start time and a variable end time, also indicate that the coefficients are stable over time. Finally, the model has reasonable forecasting properties, even outside the estimation period, cf. Chart 3. The Chart shows the model's forecast – when the coefficients are estimated for a shorter estimation period ending in 1998¹ – compared with the actual quarterly wage increases.

¹ For the long-term relation, the estimation period is 1975-2007, however.

APPENDIX: AN EMPIRICAL ANALYSIS OF WAGE DEVELOPMENT

This section examines the ability of the wage relations to explain Danish wage development. As in e.g. Hansen (1998) and Bårdsen et al. (2005), Chapter 5, the empirical analysis considers the long-term relationship within the framework of a cointegrated vector autoregressive model. The model includes the Phillips curve and the wage-bargaining model as special cases, and it is therefore possible to test whether each wage relation can describe the wage development. In addition, within the model framework it is possible to analyse the long-term relationship between the variables and the adjustment to them as well as the short-term dynamics.

A cointegrated VAR model is examined, which can be written in error correction form as

$$\Delta Y_t = \Pi Y_{t-1} + \sum_{i=1}^{k-1} \Omega_i \Delta Y_{t-i} + \Phi Z_t + e_t.$$

The first term on the right-hand side of the equal sign contains the long-term relationship between the modelled variables (vector Y) and the related adjustment coefficients. The second term is the short-term dynamics, where k is the number of lags, while the third term contains non-modelled variables (vector Z). The last term is the residuals, i.e. the unexplained variation.

The estimation period of the analysis is from the 1st quarter of 1975 to the 4th quarter of 2007. The data is derived from Danmarks Nationalbank's macroeconomic model, MONA. The time series are:

W: hourly wage rate, industrial worker

P: private consumption deflator

Q: gross value added deflator, private non-farm sector

A: hourly productivity, private non-farm sector

U: unemployment

H: agreed working hours

R: average replacement ratio for unemployment benefits

T_i : average income tax rate

T_p : indirect labour costs, private non-farm sector.

Five variables are modelled in the cointegrated VAR model: wage, consumer price, productivity, unemployment and wedge.¹ A unit-root test

¹ The following non-modelled variables are conditioned upon: change in agreed working hours, income tax, changes in income tax and indirect labour costs of business enterprises, and the replacement ratio of unemployment benefits. The definition of the wedge between product real wages and consumption real wages allows for income tax and indirect labour costs.

TEST FOR COINTEGRATION RANK		Table 1
Rank	Trace	Max
0	87.72**	34.94*
1	52.77*	30.21*
2	22.57	17.86
3	4.71	3.13
4	1.58	1.58

Note: Adjusted for degrees of freedom. * (**) indicates significance at 1(5) per cent level.

shows that the variables can be regarded as integrated of first order, which is consistent with the assumptions of the cointegration analysis.

Four lags are sufficient to ensure a well-specified model with no signs of autocorrelation in the residuals. The other misspecification tests indicate the model is generally satisfactory.¹

Cointegration tests of the number of stationary relationships between the integrated variables are not quite clear, cf. Table 1. Trace tests indicate one or perhaps two cointegrating relations.

Assuming there is only one cointegrating relation, the following relationship, normalised on wages, is found

$$w = \alpha + 1.59p + 0.32a - 1.97U - 2.68p_q - 0.57r - 2.49t_i + ecm,$$

where p_q is the wedge, and ecm reflects the stationary error correction term.

The two wage relations introduced above each give rise to a set of restrictions in terms of the long-term relationship. First it is examined whether there is a cointegrating relation consisting of unemployment and the replacement ratio alone as in Hansen (1998) and Knudsen (1992). Such a long-term relationship will be consistent with a Phillips curve where the unemployment level is an explanatory variable in a dynamic wage relation. However, with the available data set, the restrictions are rejected at a significance level of 5 per cent.

Restrictions corresponding to the real-wage curve are accepted. The income tax rate is not included in the cointegrating relation, and the coefficient of the wedge does not differ significantly from 1. The long-term relationship can then be written as follows:

$$w - p - a = \alpha - 1.19U - p_q + 0.85r + ecm.$$

In the long term, wages thus depend on prices, productivity, unemployment and the replacement ratio. The coefficient of prices and product-

¹ The assumption of normally distributed residuals is rejected by the test, but as the problem is attributable to a single outlier, it will not be examined further.

ivity is 1 as predicted by the theoretical model. This means that the wage share ($w-p-a$) conditional on unemployment, the wedge and the replacement ratio is stationary.

Tests for weak exogeneity show that deviations from this long-term equilibrium are adjusted through changes in wages, productivity and the wedge. In concrete terms, a wage share above the long-term equilibrium will be adjusted by lower wages and higher productivity. At the same time, the wedge will be reduced, i.e. producer prices will increase relative to consumer prices. On the other hand, unemployment and consumer prices may be regarded as weakly exogenous in relation to the long-term parameters, i.e. they do not respond to deviations from the identified real-wage curve.

Assuming two cointegrating relationships instead raises the question of identification. A price equation is typically also included in a wage-bargaining model, but simultaneous identification of a wage and price equation will not be pursued here.

Based on the estimated real-wage curve¹, which is assumed to describe the long-term wage development, a simple dynamic wage relation is set up below for the purpose of explaining short-term wage changes. A general specification that may contain both the real-wage equation and the Phillips curve is considered at the outset:

$$\Delta w_t = \alpha + \sum_i \delta_i \Delta w_{t-i} + \sum_j \beta_j \Delta p_{t-j} + \sum_k \gamma_k \Delta q_{t-k} - \phi U_{t-1} - \chi ecm_{t-1} - \lambda \Delta h_t + e_t.$$

The wage relation is estimated alone, even though the results of the cointegration analysis indicate that the more complex system approach would be preferable. Based on the general-to-specific principle, insignificant variables are successively removed from the general model. The result of this exercise appears from Table 2.

The long-term relationship is significant in the final relation, but adjustment to the long-term equilibrium is not strong. The level of unemployment, on the other hand, is not significant. The results therefore indicate a real-wage equation rather than a Phillips curve. In the short term, wages also respond to changes in consumer and producer prices and to changes in agreed working hours.²

¹ Below, a long-term relation including the above-mentioned exogeneity restrictions is used. The coefficients of unemployment and the replacement ratio in this relation are -0.98 and 0.35, respectively.

² The highly significant wage effect of changes in agreed working hours is a common outcome, because reductions of working hours have usually been implemented with full wage compensation.

A DYNAMIC WAGE RELATION, 1976-2007. ENDOGENOUS VARIABLE: Δw Table 2

	Coefficient	t-value
Constant	-0.0023	-0.851
Δw_{t-3}	0.28	3.81
Δp_t	0.17	2.69
Δp_{t-2}	0.26	4.40
Δq_{t-1}	0.071	2.01
Δh_t	-0.97	-5.36
ecm_{t-1}	-0.041	-2.53

$R^2 = 0.61, \sigma = 0.0055.$

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Energy Efficiency and Competitiveness

Erik Haller Pedersen and Johanne Dinesen Riishøj, Economics

INTRODUCTION AND SUMMARY

Denmark and other industrialised countries are heavy energy consumers. However, if energy consumption is seen in relation to output, Denmark is among the world's most energy-efficient economies. Achieving this position has required considerable investments in capital stock, but on the other hand it gives Denmark a competitive edge when energy prices are high.

Viewed in isolation, doubling of energy prices improves Denmark's competitiveness by just over 2 per cent. The reason is that rising energy prices have a lower impact on producer prices in Denmark than in competitor countries. Converted into payroll kroner, this is equivalent to savings of approximately kr. 15 per hour in industry.

Oil prices doubled from mid-2007 to mid-2008, but have since declined substantially, thereby eroding the competitive gain achieved. In the longer term, energy prices are, however, expected to rise, accentuating the advantages of energy-efficient production. This does not necessarily mean that energy-intensive production should be moved abroad. Such relocation may improve energy efficiency in Denmark, but lower it at the global level. From a socio-economic and environmental perspective, exporting energy technology to improve global energy efficiency is a far better solution.

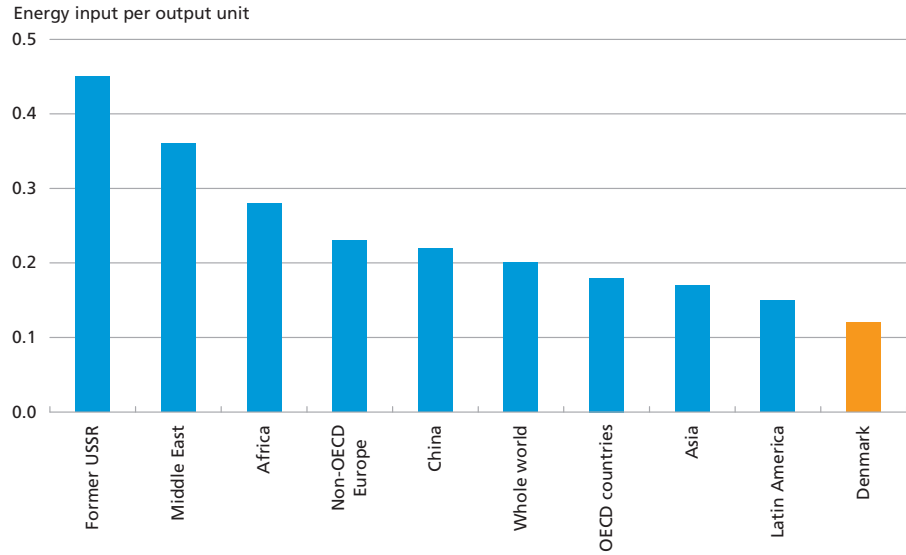
ENERGY EFFICIENCY

Global energy consumption is very unevenly distributed across countries. The more affluent a nation is, the greater its energy consumption. This is hardly surprising since energy is an important factor in practically any type of production.

One way to reduce overall energy consumption is, of course, to reduce output and thus the standard of living in general. However, this article compares energy efficiency in production, stated as energy consumption per output unit, e.g. joule per unit of real GDP (gross domestic product).

GLOBAL ENERGY INTENSITY

Chart 1



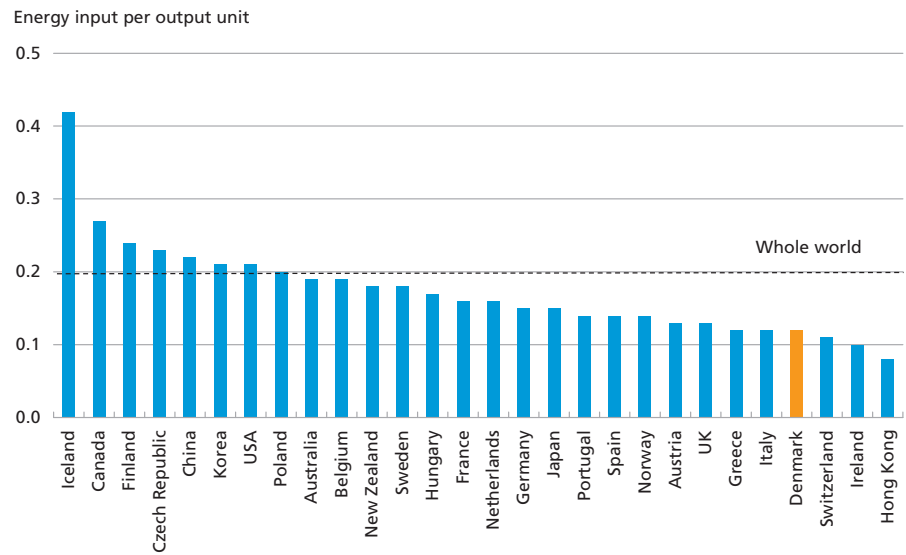
Note: Data for 2006. Energy intensity is calculated as the total primary energy supply (TPES) in metric tons of oil equivalents (= 10⁷ kcal) in relation to PPP-adjusted GDP for the whole economy in 2000 dollars.

Source: International Energy Agency, Key World Energy Statistics 2008.

Measured by this yardstick, the ranking of countries differs from that achieved by looking at total consumption since affluent nations tend to be far more energy-efficient, cf. Chart 1.

ENERGY INTENSITY IN INDUSTRIALISED COUNTRIES

Chart 2

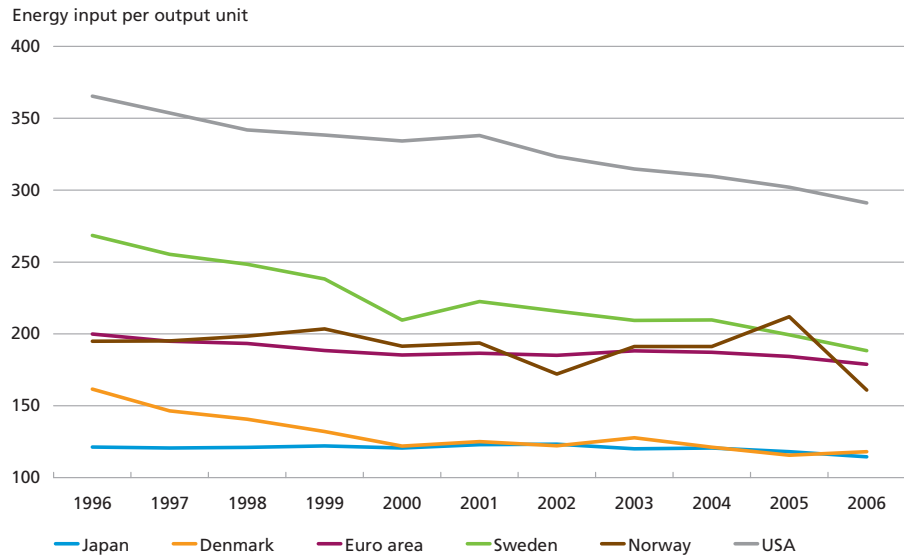


Note: Data for 2006. Energy intensity is calculated as the total primary energy supply (TPES) in metric tons of oil equivalents (= 10⁷ kcal) in relation to PPP-adjusted GDP for the whole economy in 2000 dollars.

Source: International Energy Agency, Key World Energy Statistics 2008..

ENERGY INTENSITY OVER TIME, SELECTED ECONOMIES

Chart 3



Note: Energy intensity is calculated as domestic gross consumption of energy in kg (oil equivalents) in relation to GDP at constant 1995 prices in euro.

Source: Eurostat.

Globally, there is thus huge potential for optimising energy efficiency by simply exploiting known technologies better. This is a well-known fact. What is surprising is that even among industrialised countries energy efficiency varies considerably, with Denmark among the best performers, cf. Chart 2.

Energy efficiency is constantly being improved in most countries, but at a relatively slow pace, cf. Chart 3. One of the reasons is that higher energy efficiency usually requires substantial investments in new capital stock and adjustment of production methods. For the most energy-efficient countries, further improvements call for the development of new technologies, which takes time.

THE SENSITIVITY OF PRODUCER PRICES TO ENERGY PRICES

Input-output tables permit calculation of the sensitivity of producer prices to changes in energy prices, broken down by sector. The results for Denmark and its competitors are shown in Table 1 and discussed in more detail in the Appendix.

As the Table shows, energy costs constitute 1.8 per cent of the output value in Denmark, i.e. for the economy overall, compared with 3.1 per cent for Denmark's competitors. In other words, producer prices increase by 1.8 per cent in Denmark and by 3.1 per cent abroad if energy prices

DIRECT AND INDIRECT COSTS FOR PRIMARY ENERGY IN PRODUCTION Table 1

Per cent	Share of GVA in Denmark	Energy costs, percentage of output value	
		Denmark	Abroad
Agriculture	1.9	6.7	6.7
Extraction of energy and raw materials	2.9	0.2	6.3
Industry, total	14.5	3.7	6.0
Including:			
Food	2.6	5.5	6.0
Textiles and leather	0.3	3.9	6.0
Wood	0.4	3.9	6.4
Paper and graphic arts	1.4	3.4	5.8
Mineral oils	0.0	0.6	4.5
Chemicals	1.8	3.6	10.7
Rubber and plastics	0.7	4.2	8.0
Stone, clay and glass	0.6	7.8	7.9
Metals	1.6	3.7	7.7
Machines	2.1	2.9	4.8
Electronics	1.8	2.4	4.3
Means of transport	0.4	3.6	4.8
Furniture, etc.	0.8	3.7	5.7
Energy and water supply	2.0	0.9	3.0
Building and construction	5.3	2.9	4.3
Transport	6.3	5.8	7.0
Service sector and public sector	67.0	1.4	2.4
Whole economy	100.0	1.8	3.1

Note: GVA is gross value added, which is a measure of the total value created in Denmark, in this case broken down by sector.

Data for 2005, for some countries for 2000-04. Direct and indirect energy costs comprise both domestically produced and imported energy. The coefficients also show the sensitivity of producer prices to energy prices. Energy costs in relation to output value are calculated as in column 6 in Table 7.E.1 of *Danish Input-Output Tables and Analyses 2006* from Statistics Denmark on the basis of input-output tables from the OECD. *Abroad* comprises the 27 countries in the effective krone-rate index, excluding Switzerland, Iceland and Hong Kong, weighted using these weights, cf. Table 2.

Source: OECD and own calculations. Peter Rørnøse, Statistics Denmark, has assisted with the input-output calculations.

double. These figures take into account not only direct energy consumption, but also indirect consumption from the production of the intermediate goods used.

The calculated energy costs for production also take into account the energy input in imports. Among other things, this means that relocation of energy-intensive production from Denmark to a low-income country such as China and subsequent re-importation of intermediate goods has a negative impact on Danish energy accounts.

However, the picture changes if the relocation of production leads to importation of finished goods. If consumption is not reduced, relocation of energy-intensive production simply means increased imports of the finished goods produced less energy efficiently abroad. In this situation, the improvement of Denmark's overall energy efficiency is offset by a reduction in global energy efficiency. From an environmental perspec-

tive, relocation of energy-intensive production abroad, without a reduction in consumption of the finished goods in question, thus results in a 'cosmetic' improvement of the Danish energy accounts.

Denmark's substantial exports of energy technology account for almost 10 per cent of its exports of goods. Both for the economy and for the environment, exports of technology to improve global energy efficiency are far more beneficial than merely relocating energy-intensive production abroad and leaving it to less energy-efficient competitors. As Table 1 shows, Danish industrial producers are among the most energy efficient in the world, irrespective of sector. This speaks in favour of keeping energy-intensive production in Denmark.

Turning to Denmark's competitors, China is among the countries that are most sensitive to energy prices, with a coefficient of 8.5, while at the opposite end Ireland's coefficient is only 1.4 for the economy overall, cf. Table 2. The business structure is of major significance for the overall

SENSITIVITY OF SALES PRICES TO ENERGY PRICES				Table 2
Per cent	Weight in effective krone rate	Energy-price sensitivity, whole economy	Energy-price sensitivity, industry	
Germany	21.7	2.5	6.1	
UK	10.8	2.0	4.3	
Sweden	9.3	3.2	5.6	
USA	8.9	3.2	4.6	
France	6.6	2.8	5.6	
Netherlands	5.5	3.4	7.4	
Italy	5.3	2.7	5.6	
Belgium	4.2	4.8	9.4	
Japan	4.0	4.0	8.3	
Norway	3.8	2.0	6.8	
China	3.7	8.5	11.0	
Finland	2.6	5.1	6.9	
Spain	2.6	3.7	6.8	
Poland	2.0	7.0	10.0	
Austria	1.8	2.7	4.2	
Ireland	1.8	1.4	1.7	
Korea	1.4	6.3	12.2	
Czech Republic	0.8	7.0	10.6	
Hungary	0.8	7.0	12.5	
Portugal	0.7	4.2	7.2	
Canada	0.7	3.3	4.6	
Australia	0.5	3.5	6.0	
Greece	0.3	3.4	9.7	
New Zealand	0.1	2.0	4.2	
Abroad, total	100.0	3.1	6.0	
Denmark		1.8	3.7	

Note: The calculation of weights is based on the weights applied to the nominal effective krone rate. For data reasons, Switzerland, Hong Kong and Iceland have, however, been omitted. The weights have been reset accordingly.

Source: OECD and own calculations.

energy accounts since service sectors, including large parts of the public sector, typically have a low energy input, while manufacturing sectors typically have a high energy input.

If e.g. the Danish business structure is multiplied by the Chinese sector-specific energy coefficients, the sensitivity of Chinese finished goods to energy prices is reduced from 8.5 to 7.6 per cent. A change in the business structure towards more services will thus in itself reduce a country's energy costs per output unit for given sector energy coefficients. In an international comparison of the energy efficiency of the economy overall this is an advantage for affluent nations, as services typically account for a larger share of these economies.

At sector level, Denmark is less sensitive to energy prices than its competitors within industry, transport and other services, while the energy costs for agricultural production are in line with those of other countries. In the industrial sector, Denmark's sensitivity to energy prices is the second lowest among comparable countries, with Ireland's as the lowest, cf. Table 2. The energy input in Denmark is particularly low for the industrial metals and chemicals sectors.

ENERGY EFFICIENCY AND COMPETITIVENESS

As stated above, the pass-through from higher energy prices to producer prices is smaller in Denmark than in competitor countries because production in Denmark is more energy-efficient. The energy input in Danish industrial production is 3.7 per cent. In other words, input costs for business enterprises increase by 0.037 per cent if energy prices rise by 1 per cent. For Denmark's foreign competitors taken as one, the figure is 0.06 per cent. Consequently, Denmark's competitiveness improves by 2.3 per cent (6.0 minus 3.7) if energy prices double, i.e. rise by 100 per cent.

The stronger impact on competitor prices thus gives Denmark a competitive edge when energy prices go up. This effect is potentially appreciable, cf. Chart 4.

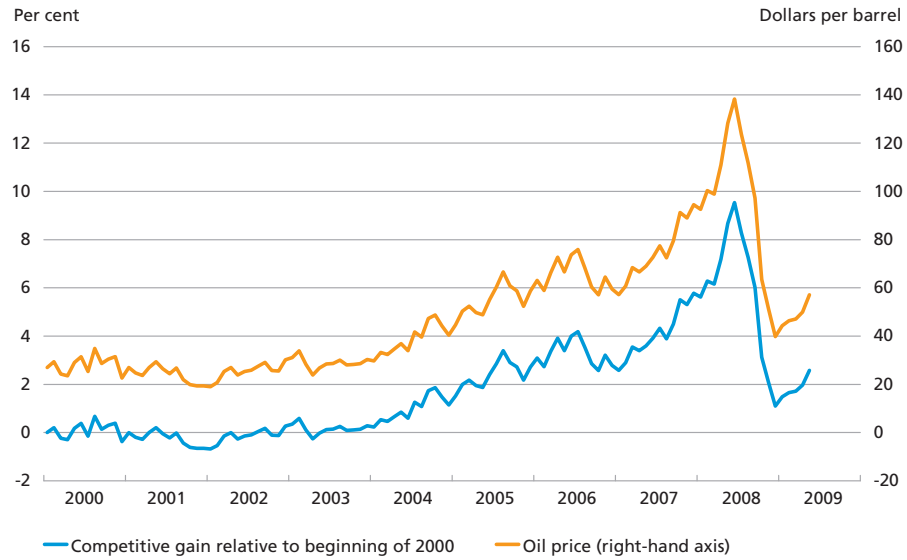
Oil prices almost tripled from 2003 to 2007. This improved Denmark's competitiveness by 4 per cent, equivalent to savings of kr. 29 per hour over 4 years, or 2.9 per cent p.a.¹

From mid-2007 to mid-2008 oil prices doubled, corresponding to a further improvement in competitiveness of just over 2 per cent, cf. Chart 5.

¹ The competitive gain of 4 per cent is the lower increase in industrial producer prices in Denmark than in competing countries if oil prices triple. According to the input-output table for Denmark, wages and profits constitute 34 per cent of the producer price, while the rest is input of raw materials, intermediate goods, imports and producer taxes. If the hourly wage in industry is kr. 250, the hourly savings on an unchanged profit ratio can be calculated as: $(4/0.34) \cdot \text{kr. 250 per hour} = \text{kr. 29 per hour over 4 years, corresponding to 2.9 per cent p.a. } ((29/250)/4) \cdot 100$.

COMPETITIVE GAIN AND OIL PRICE

Chart 4

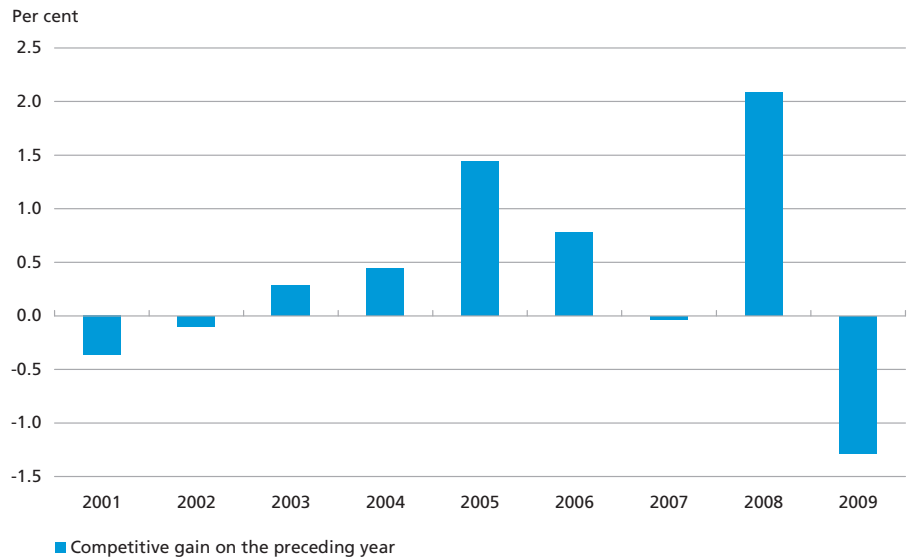


Source: Reuters EcoWin for oil price, own calculations on the basis of data from Statistics Denmark and the OECD for competitive gain.

Subsequently, oil prices have fallen back considerably, thereby eroding much of the competitive gain achieved. Nevertheless, in mid-May the gain was still a good 2.5 per cent on 2003.

COMPETITIVE GAIN ON THE PRECEDING YEAR

Chart 5



Note: The Chart shows the calculated competitive gain at end-June compared with end-June the preceding year. For 2009, the competitive gain has been calculated in mid-May compared with the same month of 2008.
 Source: Same as Chart 4.

These calculations show that while a country investing in more energy-efficient production incurs a number of investment costs in the short term, it may also achieve a competitive edge in the longer term. First movers can thus reap an advantage, the size of which depends entirely on energy prices.

The recent declines in energy prices have obviously reduced the competitive gain. In the longer term, energy prices are expected to rise so that the advantages of being on the cutting edge of energy efficiency are likely to be evident once again.

APPENDIX

Input-output tables

An input-output table describes the production structure of a country. It shows which sectors provide input for which, and what is produced for final consumption. Input-output tables for Denmark can be found in *Danish Input-Output Tables and Analyses 2006* from Statistics Denmark. An overview table is found in Statistics Denmark's 10-year statistical overview (in Danish only).

The direct and indirect energy input into production can be calculated on the basis of the input-output table.¹ The calculation takes into account that production includes not only direct energy consumption, but also the energy input for intermediate goods produced in other sectors. In other words, an infinite series is summed up. In practice, this is done using matrices. These calculations result in coefficients for energy input in production, broken down by sector, which can then be used to calculate the sensitivity of producer prices to changes in energy prices. Tables 1 and 2 show the outcomes for Denmark (by sector) and for its key trading partners.

Calculation of the direct and indirect energy input in production requires an input-output table for each country. Coefficients for "abroad" taken as one were obtained by weighting the data for each country, applying the weights used for the effective krone-rate index.

The input-output-based energy sensitivity of producer prices in Industry is 3.7 for Denmark and 6.0 for abroad, cf. Table 1. In other words, if the price of energy, in this case approximated by the price of oil, doubles, Danish producer prices increase by 2.3 per cent less than those of Denmark's competitors (6.0 minus 3.7). This is equivalent to the competitive gain.

The calculations operate with a unit price for energy so that one joule costs the same, irrespective of source. This is only approximately correct and, among other things, means that these calculations cannot be taken as indications of CO₂ emissions, i.e. they are not CO₂ calculations.

¹ For a general introduction to the calculation method, see P. D. Blair and R. E. Miller, *Input-Output Analysis: Foundations and Extensions*, New Jersey, Prentice-Hall, 1985; and W. Leontief, *Input-output Economics*, 2nd edition, Oxford University Press, 1985. See also *An input-output pricing model for Denmark*, Statistics Denmark, Working Note No. 7, Copenhagen, 1976 (in Danish only).

Speech by Nils Bernstein at the Annual Meeting of the Danish Mortgage Banks' Federation on 31 March 2009

The economic outlook is still deteriorating. Global output is now expected to decline by more than ½ per cent this year. That may not sound so bad. But, in comparison, global growth was 5 per cent in the boom years. In Denmark, a decline in the range of 1½ per cent is expected for the second year running. International growth estimates are regularly adjusted downwards. There is a high degree of uncertainty, and it is impossible to say when the tide will turn. A few very recent indicators, mainly for the USA, are slightly more positive than they have been for some time, but it is still too early to talk of an economic spring.

All over the world, economic policies have been eased significantly. Policy interest rates are historically low in many countries, and fiscal policies are highly expansionary. This is also the case in Denmark.

The fiscal-policy initiatives taken in Denmark amount to kr. 20 billion in both 2009 and 2010. Relative to the size of the economy they are in line with those taken by many other OECD countries, but do not forget that unemployment in Denmark is one third of the OECD average. Government finances in Denmark are also more sensitive to cyclical fluctuations than they are in other countries, so that public expenditure and revenue automatically stimulate the economy more in a recession.

Nevertheless, unemployment is expected to rise for some time yet. Initially it is a question of restoring financial market confidence. That will have a positive effect on the real economy, including consumption, and then unemployment figures will probably begin to go down. We do not believe that unemployment will peak until early 2011. The economy must grow by 1-2 per cent to prevent a further increase.

The government balance showed a surplus of kr. 50 billion last year. Next year, a deficit of the same magnitude is expected. This is equivalent to a reversal of 5½ per cent of GDP. Just over half of the deterioration is attributable to the automatic stabilisers, while the rest is the result of the decisions made. The government budget deficit means that there will, once again, be a need for net issuance of government bonds, following a period of debt reduction.

The expansionary economic policy is reflected in household finances. For those who do not lose their jobs, real disposable incomes will grow

considerably in the current and coming year thanks to sizeable wage increases and tax cuts in 2009 and, particularly, in 2010. In addition, consumer prices are rising at a moderate pace, interest rates are receding, especially at the short end of the curve, and this year Special Pension savings will be released at a reduced tax rate.

Falling cash prices, rising disposable incomes and lower interest rates all ease the financial burden of buying a home. At the national level, the price of an average house as a percentage of disposable income has been falling over the past 18 months. This development will accelerate in 2009, and by year-end housing costs as a ratio of disposable income is estimated to be some 3-6 per cent lower than in 2008. The largest falls will be seen in the Copenhagen area and for short-term financing.

Under normal circumstances, rising income and falling interest rates exert upward pressure on housing prices. But the current situation is not "normal". The housing market has almost frozen with many homes for sale, slow sales and business volumes at a long-time low. The market is driven by negative expectations that overshadow the positive trend in the private finances of most Danes.

Expectations that cash prices will fall further can be self-fulfilling if people are hesitant to buy, and this pattern that can be difficult to break. Especially if unemployment is rising.

Those initially affected are people whose social circumstances change due to unemployment, illness, divorce or similar. Such events are often at the root of the observed rise in enforced sales. Nevertheless, the level remains low. Although the number of enforced sales can be expected to rise further in the near future, the current outlook for household finances does not point to an increase to the level seen in the early 1990s.

Combined with falling stock indices, lower housing prices have led to a reversal of the prolonged upward trend in household wealth, and a fall was seen last year. All the same, household wealth is still strong. The value of both assets and liabilities has increased over time, but what matters when it comes to the soundness of household finances is the difference between the two.

Last year, total wealth – i.e. the value of all assets, including pension savings, less the value of all liabilities – was 3½ times the disposable income. That is kr. 1.2 million per household on average, which is high in a long-term perspective and higher than before 2003, when the most recent upswing began. Owner-occupied housing accounts for approximately half of all household wealth, while shares make up an estimated 15-20 per cent, including shares owned indirectly by way of pension savings.

Overall, the finances of Danish households are therefore still sound, not only because of the capital gains reaped during the upswing, but also because net savings have been positive for a long time – in the range of 5-10 per cent of annual disposable incomes. This prudence pays off now that the economy is moving in the opposite direction.

But the fact remains that some people may find themselves in a fix. The fall in housing prices means that an estimated 110,000 Danes have debt-to-value ratios exceeding 100 per cent – they are "technically insolvent" and thus at risk if incomes go down or they are otherwise forced to sell their homes.

Let me now turn to the financial markets.

All European markets for mortgage bonds were affected by the financial turmoil after Lehman Brothers had filed for Chapter 11 in September last year. Attention suddenly focused on the credit risk on mortgage bonds. The yield spread between mortgage and government bonds widened in Denmark and in comparable countries.

The initiatives taken to support the Danish pension sector at the end of October curbed the widening of the yield spread between mortgage and government bonds, which returned to the level just before the Lehman Brothers episode.

Adjustable-rate loans account for a large part of the Danish mortgage market. For the lion's share of these loans, the rate of interest is fixed in December. The financial turmoil in the autumn demonstrated all too clearly that there is a considerable risk for both borrowers and issuers if interest rates are fixed only once a year. Danmarks Nationalbank is in favour of spreading issuance of adjustable-rate loans to other months than December.

Developments in September and October 2008 showed that at times it is necessary to intervene to support the krone. In such situations, the foreign-exchange reserve serves as a buffer that allows Danmarks Nationalbank to maintain a fixed exchange rate against the euro.

In addition to intervening in the foreign-exchange market, Danmarks Nationalbank raised its policy interest rates. At the time, risk aversion in the markets was high, so a given increase in interest rates had a smaller impact than it would normally have.

On the basis of the lessons learned from the crisis we believe that we will need to maintain a larger foreign-exchange reserve than in recent years.

Nevertheless, it should be borne in mind that our target is to keep the exchange rate stable. The foreign-exchange reserve is one of the tools for observing this target, and its size depends very much on its buffer function.

The foreign-exchange reserve has to some extent been increased by raising sovereign loans in foreign currency, but market conditions have also allowed Danmarks Nationalbank to buy foreign exchange.

Later this year, the legislation on covered bonds – or SDOs, as we call them in Danish – will be reviewed on the basis of the experience gained. It is important to take into account what the financial crisis has taught us and to perform a thorough analysis. It is still too early to draw any firm conclusions as regards potential amendments.

In this context, it may be useful to outline some of the preliminary observations from the financial crisis that seem to be particularly relevant.

Firstly, access to capital may be limited when the need is greatest.

Secondly, house prices may fluctuate strongly and have to some extent been driven by innovation in the mortgage market.

Thirdly, if the problems reach a systemic level, they no longer affect only lenders and borrowers, but become problems to society as a whole.

In its 2007 consultation response concerning SDO legislation, Danmarks Nationalbank indicated that it preferred a robust and simple model and that the upper loan-to-value limit for residential properties was set at 70 per cent at the time that the loan was granted and not subsequently raised. Since the loan-to-value ratio may not exceed 80 per cent, a substantial buffer is required. Experience with a scarce supply of capital when the need is greatest, combined with the drop in property prices, may warrant an even greater margin.

The launch of covered bonds means that credit institutions must restore the underlying collateral if house prices fall. This has introduced a risk in the Danish mortgage system that did not exist previously – a risk that has been accentuated by the financial crisis. Danmarks Nationalbank finds it important to consider this aspect carefully when reviewing SDO legislation. After all, government guarantees do not last forever.

Late in the SDO legislation process a deal was struck whereby SDO loans can be redeemed at par. This provision has limited the scope for product development, and as such it is worth preserving. Under the traditional Danish mortgage system, mortgage loans are redeemable at around par. This is a good arrangement, which safeguards consumers against unpleasant surprises. A sound mortgage system must have a high degree of consumer protection. It is good to know that Danish consumers have not been offered loans with an artificially low initial rate of interest and a correspondingly higher rate later on.

The fact that capital may be most difficult to obtain when you really need it is something that the financial sector should keep in mind now that the government is offering a supply of risk capital. It would be wise to have extra large buffers against losses and to employ the capital re-

ceived in a sufficiently flexible manner. The financial sector should remember that society has now lent it a hand twice. The reason is that this sector is not just another business sector, it also fulfils an important role in society. This role should be at the core of any decisions on capital injections in the near future. The way the sector has acted – both before and during the financial crisis – must naturally be a key consideration when the new regulatory regime is laid down.

We are living in turbulent times. We have yet to reap the benefits of the financial sector rescue packages launched all over the world, and the real economic prospects are bleak. Nevertheless, I think we can say that the Danish system for financing real property has steered through the crisis fairly well when we look at the situation in other countries. Throughout the rough period it has been possible to obtain mortgage loans. True, conditions have been tightened, but the mortgage system has risen to the challenge. There are many good reasons for this, but I will not go further into that.

Thank you for your attention.

Speech by Nils Bernstein at the Annual Meeting of the Association of Danish Mortgage Banks on 23 April 2009

At last year's meeting, I began by saying that economic predictions should always be taken with a grain of salt. The same applies this year.

Today's cyclical picture is a great deal gloomier than I – or others, for that matter – predicted a year ago. Expectations of global growth are being adjusted downwards all the time. At the moment, growth estimates come and go. The latest international forecasts expect output in the industrialised countries to drop by 4 per cent this year. Major exporting countries like Germany and Japan are hit especially hard; a decrease in output by more than 5 per cent is foreseen. In that case, the setback will be of a magnitude not seen for a long time. The current outlook is gloomy. But for some time the most pessimistic predictions have tended to stick most.

The global political willingness to address the crisis is one encouraging aspect. There is no universal agreement, but so far the world has managed to keep tendencies to profit at the expense of others at bay. Let us hope that it continues. The euro plays a major role here. I am not blind to the fact that the currencies of some of Denmark's important export markets have depreciated against the euro and thus the krone. This makes life hard for Danish exporters, but we will just have to accept it. And it is a reminder of how important it is to keep costs down.

The G20 summit in London early this month agreed to expand the lending capacity of international financial institutions, including the IMF. In addition, the G20 countries agreed on higher trade credits and a general increase in the foreign-exchange reserves of central banks. All this amounts to astronomical figures. Denmark will have to pay its share of the financing of these commitments.

A global economic downturn of the magnitude we are witnessing at the moment must necessarily have serious implications for a small open economy like Denmark. Exports have declined by almost one fifth over the last six months. And the downward trend continues.

Last year, output fell by more than 1 per cent in Denmark, while it rose in most other EU member states. This year, we expect output to decline even more strongly than last year, but slightly less than in the rest of the EU. Nevertheless, unemployment is expected to continue to

increase for some time as it typically lags behind demand. No one can say for certain how long the increase will continue and how strong it will be. Any calculations we make will have a considerable element of uncertainty. According to the latest estimate, unemployment will not peak until early 2011 at around 190,000 persons.

Denmark can use economic policy to mitigate the mounting crisis, but we cannot avoid it – no matter what we do. We have already launched significant measures to stimulate private consumption and activity in the building and construction sector. Fiscal policy is expansionary and has been so for several years. Danmarks Nationalbank's policy rates are historically low. We are running out of room to manoeuvre.

We cannot force consumers to spend more. In the worst case, consumers will save up and then spend the money at a time when it would be more appropriate for them to tighten the reins. If we cut to the chase, it is a question of how much we can use the building and construction sector as a cyclical regulator to create jobs as compensation for falling employment in other sectors – exports, trade, services and the financial sector. We are saying: wait a moment and let us see how the measures already implemented work. After all, capacity in building and construction is limited. Only recently, the sector was in full alert with overheating and shortage of craftsmen, while prices and wages were rising. If we overburden the building and construction sector again, history will repeat itself and that could ultimately exacerbate the crisis. Finally, the contribution to an overall reduction in unemployment will be limited in any case. And I have not even mentioned the difficulties of ensuring rational planning of building or construction projects moved forward or subsidy schemes that stimulate initiation of projects.

Indeed, the crux of the matter here is job creation and not what can be done to mitigate the consequences for the unemployed. Efforts should be directed at retaining and developing competencies, for example, and an extraordinary effort is required to create more places in education and training.

During the last six months of financial turbulence, the mortgage system has proved that it can ensure financing of real property.

Market confidence in the Danish mortgage system has been upheld, against the backdrop of mounting difficulties in financing real property in many other countries.

Monetary policy has been relaxed all over the world. On 3 April, Danmarks Nationalbank was able to lower its discount rate to 1.75 per cent – the lowest level since the establishment of Danmarks Nationalbank in 1818. Although the lending rate is slightly higher, the short-term interest rate is historically low.

Long-term interest rates have decreased less than policy rates. The central banks of several countries, including the UK and the USA, are buying back bonds to force down long-term interest rates in order to stimulate the economy. It remains to be seen whether the European Central Bank will steer a similar course. If it does, long-term interest rates in Denmark could also be affected.

It is essential that the current extraordinary stimulus measures do not increase long-term inflationary expectations as this would create problems for the economy in the longer term as a result of measures to mitigate the current crisis.

Thanks to the low policy rates, the banks can borrow from Danmarks Nationalbank at low cost. But Danmarks Nationalbank is by no means the only source of financing for Danish banks. The financial crisis has generally made it more difficult for the banks to obtain financing in the international money and financial markets. This has entailed higher financing costs. The importance of the international money markets as a source of financing has grown over the last 10 years as growth in the banks' deposits has lagged behind growth in lending.

The higher financing costs have been passed on to the banks' customers. Since last autumn, the banks have again reduced their interest rates somewhat. The decline in deposit rates has more or less mirrored the reduction in policy rates, while lending rates for households and the corporate sector have declined a little less. The result is higher interest margins for the banks, at a time when losses are expected to increase for a period to come. In addition, the banks' contribution to the financing of the government guarantee under Bank Rescue Package I will amount to kr. 35 billion. Danmarks Nationalbank's interest rates are guidelines for the banks' interest rates, but a one-to-one relation should not be expected.

The credit terms for bank and mortgage customers have been tightened further since last autumn. This is evident from Danmarks Nationalbank's latest bank lending survey. The tightening has been most pronounced for corporate loans. In the survey, the respondents give the more gloomy risk outlook as the main reason. The risks have proved to be greater than the institutions expected three months ago. The mortgage-credit institutes also state the supplementary collateral requirements for covered bonds as a reason for tightening credit policies. Contribution rates have been raised. Overall, the institutions expect to tighten their credit policies further in the next three months. The survey also shows that demand for corporate loans has declined in 2009 – a sign that economic activity has shifted to a lower gear.

It is understandable that risk assessments have been tightened against the backdrop of the negative growth outlook. Expectations of mounting

losses on the stock of existing loans entail a more prudent approach when considering applications for new loans. At the same time, credit quality is on the decrease. Does this mean that Bank Rescue Package II has failed? The answer is no, in my opinion. It has only been possible to apply for funds under Bank Rescue Package II for a very short time. Are we already witnessing a credit crunch? The bank lending survey leaves no basis for concluding that loan applications from borrowers who are considered creditworthy under the tightened credit policies of the recession are rejected to any considerable extent on the grounds of shortage of capital in banks and mortgage-credit institutes – yet.

Having said that, I would still like to repeat my request to all banks and mortgage-credit institutes: it is now possible to strengthen your capital base by means of hybrid core capital made available by the government. And, under special circumstances, it is now also possible to convert such capital injections into share capital. This might come in handy. This is an unusual scheme, but the current situation is also unusual. I encourage you to carefully consider these opportunities. Under the prevailing market conditions and the economic outlook for the next couple of years, you cannot be too careful. And a well-padded financial sector is a key prerequisite for turning the tide so that we will again enjoy positive economic development.

Thank you for your attention.

Press Releases

2 APRIL 2009: INTEREST-RATE REDUCTION

Danmarks Nationalbank's lending rate and the rate of interest on certificates of deposit are lowered by 0.25 per cent to 2.00 per cent. The discount rate and the interest rate on the banks' current accounts with Danmarks Nationalbank are lowered by 0.25 per cent to 1.75 per cent. The reduction will have effect as from 3 April 2009.

The interest-rate reduction is a consequence of the lowering by 0.25 per cent to 1.25 per cent in the European Central Bank's rate on the main refinancing operations.

7 MAY 2009: INTEREST-RATE REDUCTION

Danmarks Nationalbank's lending rate and the rate of interest on certificates of deposit are lowered by 0.35 per cent to 1.65 per cent. The discount rate and the interest rate on the banks' current accounts with Danmarks Nationalbank are lowered by 0.35 per cent to 1.40 per cent. The reduction will have effect as from 11 May 2009.

The interest-rate reduction is a consequence of the lowering by 0.25 per cent to 1.00 per cent in the European Central Bank's rate on the main refinancing operations. Danmarks Nationalbank's interest rates are further reduced by 0.10 per cent as a consequence of purchase of foreign exchange in the market.

25 MAY 2009: NEW SHIP COIN WITH LIGHTSHIP XVII

On 27 May 2009, Danmarks Nationalbank issues the 6th ship coin, with Lightship XVII as its motif.

The Lightship was built in 1895 in Odense and has seen quite a few events in its day. For example, it sank in only a few minutes after a collision in 1954. From 1921 until 1972, it was positioned near Gedser Reef. It was taken out of service in 1972, and that same year it was acquired by the National Museum of Denmark, thanks to a donation from the foundation A.P. Møller og Hustru Chastine Mc-Kinney Møllers Fond til almene Formaal. Today, Lightship XVII can be seen at Nyhavn in Copenhagen.

The motif for the new ship coin was designed by the sculptor Karin Lorentzen, who has depicted the Lightship in active service at Gedser

Reef. Karin Lorentzen previously designed the motif for the tower coin with the dragon spire on the Old Copenhagen Stock Exchange (Børsen), as well as the coin to commemorate the wedding of HRH Crown Prince Frederik and Miss Mary Donaldson on 14 May 2004.

The ship coin will be issued as a 20-krone coin for circulation in an edition of 1.2 million coins. A special proof version for collectors will be issued in an edition of 1,500.

The coin can be purchased from banks and from Danmarks Nationalbank (Banking Services) or ordered via the website of The Royal Mint, www.royalmint.dk.

4 JUNE 2009 INTEREST-RATE REDUCTION

Danmarks Nationalbank's lending rate is lowered by 0.1 percentage point to 1.55 per cent with effect as from 8 June 2009. The reduction is a consequence of purchases of foreign exchange in the market. At the same time the rate of interest on certificates of deposits is lowered by 0.2 percentage point to 1.45 per cent, while the discount rate and the interest rate on the banks' current accounts are lowered by 0.2 percentage point to 1.20 per cent.

With the interest-rate changes a 0.1 percentage point-margin is introduced between the lending rate and the rate of interest on certificates of deposits. The purpose is to give the banks and mortgage-credit institutes an incentive to a higher degree to settle differences in liquidity via the money market rather than using the facilities of Danmarks Nationalbank.

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Danmarks Nationalbank's Statistical Publications

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 3 July 2009 and thus based on more recent information than the equivalent section of the Danish edition.

Danmarks Nationalbank is the source for Tables 1-14, 16-18 and 23-24, while the OMX Nordic Exchange is the source for series of bond yields and the share-price index in Table 1. Statistics Denmark is the source for Tables 15 and 19-22. The calculations in Tables 20 and 24 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			The ECB's interest rate	End of period	Inter-bank interest rate, 3-months uncollateralized	Bond yields		Share-price index OMX C20 (prev KFX) 3.7.89 =100
	Discount rate	Lending	Certificates of deposit	Main refinancing operations, fixed rate ¹			10-year central-government bond	30-year mortgage-credit bond	
2004	2.00	2.15	2.15	2.00	2004	2.16	3.87	5.07	286.66
2005	2.25	2.40	2.40	2.25	2005	2.46	3.30	4.39	393.52
2006	3.50	3.75	3.75	3.50	2006	3.81	3.95	5.24	441.48
2007	4.00	4.25	4.25	4.00	2007	4.65	4.48	5.61	464.14
2008	3.50	3.75	3.75	2.50	2008	4.20	3.31	6.21	247.72
2009 16 Jan ...	2.75	3.00	3.00	2.00	Dec 08	4.20	3.31	6.21	247.72
6 Mar ..	2.00	2.25	2.25	1.50	Jan 09	3.45	3.70	6.31	261.79
3 Apr ..	1.75	2.00	2.00	1.25	Feb 09	2.00	3.46	6.19	241.48
11 May .	1.40	1.65	1.65	1.00	Mar 09	2.50	3.40	6.05	228.36
8 Jun ...	1.20	1.55	1.45	1.00	Apr 09	1.85	3.46	5.46	274.79
	|	|	|	|	May 09	1.65	3.77	5.50	290.83
3 Jul	1.20	1.55	1.45	1.00	Jun 09	1.50	3.62	5.42	290.70

¹ Until 7 October 2008 minimum bid rate.

SELECTED ITEMS FROM DANMARKS NATIONALBANK'S BALANCE SHEET Table 2

	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
End of period	Kr. billion						
2004	217.6	52.0	60.8	160.4	6.9	72.6	94.6
2005	212.3	56.2	56.4	207.6	12.8	135.3	85.1
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
Jan 09	217.5	58.2	222.8	147.0	6.7	227.9	-74.3
Feb 09	235.7	57.8	216.4	156.2	8.3	213.8	-49.4
Mar 09	260.7	58.1	202.6	164.3	21.8	192.7	-6.6
Apr 09	286.4	59.0	210.3	173.0	19.3	180.4	11.9
May 09	325.3	59.9	188.7	239.8	5.9	173.8	71.8
Jun 09	330.3	60.0	190.8	238.0	18.0	180.5	75.5

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	
	Do- mestic gross financ- ing require- ment	Sales of do- mestic central- govern- ment securi- ties, etc.	Liquid- ity effect	Interven- tions to purchase foreign exchange, net	Other	Total			Change in net position	End of period
2004	75.5	92.6	-17.1	-12.5	6.1	-6.4	-2.6	-1.2	-27.3	94.6
2005	39.5	30.9	8.6	-18.4	3.0	-15.4	-2.2	-0.5	-9.5	85.1
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
Jan 09	33.2	3.9	29.3	12.1	0.6	12.7	-2.3	-1.2	38.4	-74.3
Feb 09	14.2	3.0	11.2	10.1	3.4	13.5	0.1	0.2	24.8	-49.4
Mar 09	27.4	6.8	20.7	18.1	-0.6	17.5	0.4	4.2	42.8	-6.6
Apr 09	17.1	8.9	8.2	8.9	0.9	9.8	0.5	0.1	18.6	11.9
May 09	35.4	4.1	31.3	28.5	0.8	29.3	0.7	-1.4	59.9	71.8
Jun 09	1.9	7.2	-5.3	6.7	1.5	8.2	3.1	-2.3	3.6	75.5

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								
2004	3,684.5	97.5	2,246.2	100.8	46.3	848.9	1,222.1	-65.7
2005	4,228.2	107.8	2,584.2	75.9	53.5	971.3	1,318.2	-172.9
2006	4,672.7	116.8	2,953.6	51.8	60.3	1,077.0	1,433.4	-224.2
2007	5,497.4	119.9	3,353.7	43.3	63.5	1,219.7	1,505.2	-304.5
2008	6,286.4	134.0	3,719.3	40.6	56.7	1,487.5	1,508.4	-407.9
Dec 08	6,286.4	134.0	3,719.3	40.6	56.7	1,487.5	1,508.4	-407.9
Jan 09	6,250.2	134.1	3,722.0	37.9	57.1	1,479.3	1,502.3	-442.8
Feb 09	6,287.5	131.8	3,700.2	44.9	56.0	1,463.0	1,510.3	-456.5
Mar 09	6,180.7	132.8	3,722.5	50.0	54.9	1,429.3	1,561.6	-454.1
Apr 09	6,186.9	133.7	3,703.5	56.1	56.4	1,438.8	1,569.5	-450.1
May 09	6,151.7	132.9	3,668.2	59.7	57.8	1,432.0	1,580.1	-419.5
Change compared with previous year, per cent								
2004 .....	...	8.8	8.9	-18.2	7.0	12.5	5.5	...
2005 .....	...	10.6	15.0	-24.7	15.4	14.4	7.9	...
2006 .....	...	8.3	14.3	-31.8	12.8	10.9	8.7	...
2007 .....	...	2.7	13.5	-16.4	5.2	13.3	5.0	...
2008 .....	...	11.8	10.9	-6.2	-10.7	22.0	0.2	...
Dec 08 .....	...	11.8	10.9	-6.2	-10.7	22.0	0.2	...
Jan 09 .....	...	10.2	10.6	-12.1	-8.7	17.3	-2.2	...
Feb 09 .....	...	10.3	9.2	15.7	-10.6	14.0	0.1	...
Mar 09 .....	...	9.9	8.2	17.8	-19.6	11.5	3.3	...
Apr 09 .....	...	9.5	7.3	19.0	-29.6	11.2	3.6	...
May 09 .....	...	8.2	5.3	25.5	-27.4	8.9	6.2	...

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 circulation 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								
2004	43.7	492.8	536.5	119.2	21.0	676.7	2.0	20.2	699.0
2005	47.3	596.3	643.5	114.1	18.4	776.0	14.2	8.4	798.7
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
Dec 08	50.4	704.8	755.2	286.4	18.4	1,060.0	4.0	57.0	1,121.1
Jan 09	48.9	721.5	770.4	293.2	19.9	1,083.5	5.8	98.9	1,188.3
Feb 09	48.9	729.2	778.1	279.5	20.2	1,077.9	3.8	112.8	1,194.5
Mar 09	48.8	720.4	769.1	266.1	19.9	1,055.2	4.3	124.5	1,184.1
Apr 09	49.3	737.0	786.3	250.7	20.1	1,057.1	3.8	129.2	1,190.2
May 09	49.9	749.9	799.8	251.8	19.5	1,071.1	6.3	133.9	1,211.4
Change compared with previous year, per cent									
2004 .....	...	...	14.4	...	...	12.7	...	...	2.7
2005 .....	...	...	19.9	...	...	14.7	...	...	14.3
2006 .....	...	...	8.7	...	...	10.8	...	...	11.4
2007 .....	...	...	8.0	...	...	13.1	...	...	17.0
2008 .....	...	...	0.0	...	...	9.0	...	...	7.7
Dec 08 .....	...	...	0.0	...	...	9.0	...	...	7.7
Jan 09 .....	...	...	0.4	...	...	8.5	...	...	10.7
Feb 09 .....	...	...	1.0	...	...	7.4	...	...	6.3
Mar 09 .....	...	...	-1.6	...	...	5.0	...	...	6.2
Apr 09 .....	...	...	-0.2	...	...	4.7	...	...	6.2
May 09 .....	...	...	1.0	...	...	4.2	...	...	6.4

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									
2004	2,418.4	495.6	754.8	324.8	309.6	780.3	823.1	908.0	
2005	2,867.3	652.0	920.1	396.6	370.0	862.1	975.7	1,065.6	
2006	3,242.0	715.0	1,124.3	475.0	458.0	889.6	1,133.8	1,148.3	
2007	3,993.4	926.6	1,333.6	557.4	551.8	1,065.8	1,444.1	1,345.6	
2008	4,579.6	985.8	1,546.3	586.8	603.3	1,092.1	1,455.4	1,424.2	
Dec 08	4,579.6	985.8	1,546.3	586.8	603.3	1,092.1	1,455.4	1,424.2	
Jan 09	4,589.8	954.3	1,535.2	578.8	585.6	1,157.7	1,439.2	1,458.4	
Feb 09	4,591.3	922.8	1,497.4	572.2	575.9	1,179.5	1,396.9	1,428.9	
Mar 09	4,484.5	958.9	1,507.0	578.2	573.5	1,185.5	1,432.5	1,407.6	
Apr 09	4,478.2	980.9	1,474.3	568.9	567.5	1,215.1	1,457.5	1,422.2	
May 09	4,459.0	877.7	1,430.0	563.5	550.8	1,331.6	1,373.5	1,448.7	
Change compared with previous year, per cent									
2004 .....	...	5.6	13.8	19.6	8.4	2.1	-0.1	14.2
2005 .....	...	31.7	21.9	22.1	19.5	10.5	18.5	17.3
2006 .....	...	9.7	22.2	19.8	23.8	3.2	16.2	7.8
2007 .....	...	29.6	18.6	17.4	20.5	19.8	27.4	17.2
2008 .....	...	6.4	15.9	5.3	9.3	2.5	0.8	5.8
Dec 08 .....	...	6.4	15.9	5.3	9.3	2.5	0.8	5.8
Jan 09 .....	...	1.5	14.9	5.8	7.3	6.1	3.0	4.3
Feb 09 .....	...	-2.0	11.5	4.4	3.7	3.7	-1.9	1.2
Mar 09 .....	...	0.4	9.7	2.6	1.3	6.7	-0.9	-0.6
Apr 09 .....	...	1.2	7.5	1.6	1.1	4.5	-4.0	-0.1
May 09 .....	...	-4.4	3.2	0.7	-4.9	13.0	-5.8	1.3

Note: Excluding Danish banks' units abroad.

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

Table 7

End of period	Assets						Liabilities	
	Total balance	Lending to MFIs	Domestic lending			Holdings of securities	Loans from MFIs	Bonds, etc. issued
			Total	of which:				
				Households, etc.	Non-financial companies			
Kr. billion								
2004	2,097.4	91.2	1,489.9	1,141.3	307.9	481.2	26.1	1,952.5
2005	2,519.9	101.4	1,664.4	1,281.5	334.2	645.0	151.7	2,237.0
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	467.4	633.5	474.4	2,582.3
Dec 08	3,322.7	428.5	2,164.6	1,629.6	467.4	633.5	474.4	2,582.3
Jan 09	2,892.1	336.9	2,177.5	1,636.8	468.1	299.0	409.9	2,265.9
Feb 09	2,855.9	335.4	2,188.7	1,644.7	476.3	245.3	406.4	2,231.0
Mar 09	2,908.9	367.7	2,202.7	1,653.6	479.5	260.9	417.7	2,284.3
Apr 09	2,918.7	377.4	2,216.2	1,661.3	485.0	239.7	425.4	2,296.0
May 09	2,949.0	389.9	2,226.1	1,669.6	486.9	238.0	421.7	2,321.9
Change compared with previous year, per cent								
2004 .....	...	-9.6	6.8	6.5	8.3	40.4	-19.9	12.9
2005 .....	...	11.1	11.7	12.3	8.5	34.0	481.5	14.6
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	15.7	-2.4	37.8	3.5
Dec 08 .....	...	18.1	7.4	5.2	15.7	-2.4	37.8	3.5
Jan 09 .....	...	6.5	7.4	5.2	13.9	11.5	45.5	2.9
Feb 09 .....	...	9.1	7.3	5.1	15.0	7.7	42.3	3.2
Mar 09 .....	...	9.0	7.0	5.3	14.3	18.2	43.6	6.2
Apr 09 .....	...	22.2	7.0	5.3	14.4	7.1	48.1	6.7
May 09 .....	...	22.9	6.7	5.1	13.9	5.4	43.6	8.1

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	Households, etc.	Business	Total	Households, etc.	Business	Total	Households, etc.	Business
	Kr. billion								
2004	2,276.0	1,466.1	741.0	786.0	324.8	426.8	1,489.9	1,141.3	314.2
2005	2,614.5	1,678.0	852.2	950.2	396.6	510.4	1,664.4	1,281.5	341.7
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	1,457.1	1,622.9	586.8	978.3	2,164.6	1,629.6	478.8
Dec 08	3,787.5	2,216.4	1,457.1	1,622.9	586.8	978.3	2,164.6	1,629.6	478.8
Jan 09	3,762.9	2,215.6	1,425.4	1,585.4	578.8	947.0	2,177.5	1,636.8	478.4
Feb 09	3,736.4	2,216.9	1,406.8	1,547.6	572.2	919.8	2,188.7	1,644.7	487.0
Mar 09	3,759.8	2,231.8	1,414.9	1,557.2	578.2	923.4	2,202.7	1,653.6	491.5
Apr 09	3,740.7	2,230.3	1,398.6	1,524.5	568.9	899.4	2,216.2	1,661.3	499.2
May 09	3,706.4	2,233.1	1,363.8	1,480.3	563.5	862.6	2,226.1	1,669.6	501.2
Change compared with previous year, per cent									
2004	9.0	9.1	8.5	13.4	19.6	8.8	6.8	6.5	8.0
2005	14.9	14.5	15.0	20.9	22.1	19.6	11.7	12.3	8.8
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	16.1
Dec 08	11.8	5.2	24.2	18.3	5.3	28.6	7.4	5.2	16.1
Jan 09	10.5	5.4	19.4	15.1	5.8	22.3	7.4	5.2	14.1
Feb 09	9.1	4.9	16.6	11.7	4.4	17.3	7.3	5.1	15.3
Mar 09	8.2	4.6	14.9	9.9	2.6	15.3	7.0	5.3	14.3
Apr 09	7.2	4.3	12.9	7.6	1.6	11.8	7.0	5.3	14.8
May 09	5.3	4.0	8.5	3.4	0.7	5.3	6.7	5.1	14.3

Note: Including lending in Danish banks' units abroad.

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		Total	Lending in foreign currency	Instalment-free lending ¹
							Kr. billion	
2004	94.6	733.9	659.8	382.2	1,488.4	84.9	170.5	
2005	88.6	720.3	853.9	616.0	1,662.8	80.5	315.5	
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	547.0	
2008	72.4	903.9	1,189.1	900.3	2,165.4	155.3	626.4	
Dec 08	72.4	903.9	1,189.1	900.3	2,165.4	155.3	626.4	
Jan 09	72.7	901.1	1,204.4	964.9	2,178.1	159.5	629.4	
Feb 09	73.0	896.0	1,220.7	977.4	2,189.6	165.6	634.9	
Mar 09	73.3	883.3	1,245.3	996.7	2,201.9	172.8	642.1	
Apr 09	73.6	870.4	1,270.6	1,016.8	2,214.6	178.3	649.4	
May 09	73.5	860.7	1,290.6	1,032.4	2,224.7	182.5	655.2	

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
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	6.2	4.0	3.3	2.8	3.2	4.1
Dec 08	6.8	8.3	6.9	4.9	4.2	3.6	4.3	5.0
Jan 09	6.4	7.7	6.5	4.6	3.7	3.2	3.6	4.6
Feb 09	6.0	7.4	6.3	4.0	3.3	2.7	3.2	4.1
Mar 09	5.5	6.9	5.8	3.4	2.9	2.4	2.7	3.7
Apr 09	5.3	6.6	5.4	3.0	2.5	2.2	2.3	3.2
May 09	5.1	6.4	5.4	2.6	2.2	2.0	2.0	2.6

SELECTED ITEMS FROM THE BALANCE SHEET OF
THE INVESTMENT ASSOCIATIONS

Table 11

End of period	Total balance	Assets		Liabilities				
		Holdings of securities		Certificates issued by investment associations by owner				
		Bonds, etc.	Shares, etc.	House- holds, etc.	Insurance compa- nies and pension funds	Other residents	Abroad	
		Kr. billion						
2004	574.2	326.5	164.6	213.1	163.4	180.1	15.3	
2005	794.7	412.1	286.4	265.7	236.5	263.0	24.4	
2006	924.7	431.8	385.4	294.3	289.4	305.3	28.8	
2007	1,020.7	477.9	411.6	295.2	336.8	322.1	29.2	
2008	772.2	424.4	222.5	211.4	265.9	238.2	14.6	
Q1 08	963.9	466.4	356.2	268.6	329.3	304.0	23.9	
Q2 08	951.4	467.2	352.0	256.5	324.1	310.9	23.0	
Q3 08	889.3	458.5	302.0	238.0	310.6	275.6	19.0	
Q4 08	772.2	424.4	222.5	211.4	265.9	238.2	14.6	
Q1 09	751.0	429.1	197.4	204.8	261.1	221.4	13.7	
		Quarterly transactions, kr. billion						
Q1 08 .....	...	4.0	12.0	-3.8	11.8	2.6	0.4
Q2 08 .....	...	12.7	9.0	1.2	2.8	20.9	-0.8
Q3 08 .....	...	-11.1	-11.8	-3.3	3.7	-20.5	-2.0
Q4 08 .....	...	-18.2	-8.2	-4.6	-9.3	-7.3	-2.2
Q1 09 .....	...	0.7	-8.6	-1.8	-2.8	-9.4	-0.1

SECURITIES ISSUED BY RESIDENTS BY OWNER'S HOME COUNTRY

Table 12

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							
2004	2,379.2	434.4	498.8	213.6	1,768.7	218.4	604.3	245.2
2005	2,559.7	461.2	434.9	205.1	2,002.9	252.5	845.2	300.5
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	405.1	363.1	158.5	2,419.2	227.4	529.9	244.4
Dec 08	2,981.5	405.1	363.1	158.5	2,419.2	227.4	529.9	244.4
Jan 09	2,510.7	421.0	353.4	159.2	1,964.0	243.5	534.8	255.9
Feb 09	2,541.1	415.5	365.7	155.2	1,981.4	242.1	496.0	237.7
Mar 09	2,575.6	434.7	362.9	160.2	2,019.1	255.5	474.5	228.3
Apr 09	2,592.7	438.6	371.6	158.6	2,022.8	260.0	547.9	266.5
May 09	2,634.2	436.6	369.7	153.6	2,045.9	262.3	585.4	289.4

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

HOUSEHOLDS' FINANCIAL ASSETS AND LIABILITIES

Table 13

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
2004	674	174	474	1,403	2,725	1,637	1,088	2,725
2005	754	172	618	1,617	3,162	1,832	1,329	3,161
2006	804	180	712	1,681	3,377	2,054	1,322	3,376
2007	869	191	700	1,724	3,486	2,238	1,248	3,486
2008	879	183	459	1,749	3,271	2,381	890	3,271
Q4 07	869	191	700	1,724	3,486	2,238	1,248	3,486
Q1 08	875	188	628	1,727	3,418	2,295	1,123	3,418
Q2 08	897	186	608	1,706	3,397	2,296	1,101	3,397
Q3 08	884	194	548	1,711	3,336	2,306	1,030	3,336
Q4 08	879	183	459	1,749	3,271	2,381	890	3,271

COMPANIES' FINANCIAL ASSETS AND LIABILITIES

Table 14

End of period	Assets				Liabilities				
	Currency, bank deposits and granted credits, etc.	Bonds, etc.	Shares and certificates issued by investment associations, etc.	Total	Debt			Net financial assets	Total
					Loans, etc.	Bonds, etc. issued	Shares, etc. issued		
Kr. billion									
2004	646	164	746	1,556	1,219	142	1,253	-1,057	1,556
2005	737	168	969	1,873	1,354	143	1,490	-1,114	1,873
2006	768	151	1,064	1,984	1,582	140	1,563	-1,303	1,983
2007	837	132	1,111	2,080	1,715	119	1,745	-1,500	2,079
2008	1,010	137	890	2,036	1,925	109	1,338	-1,336	2,035
Q4 07	837	132	1,111	2,080	1,715	119	1,745	-1,500	2,079
Q1 08	806	131	1,060	1,997	1,768	117	1,662	-1,550	1,997
Q2 08	897	124	1,127	2,149	1,825	116	1,712	-1,503	2,149
Q3 08	948	132	1,027	2,107	1,843	114	1,544	-1,394	2,107
Q4 08	1,010	137	890	2,036	1,925	109	1,338	-1,336	2,035

Note: Companies are defined as non-financial companies.

CURRENT ACCOUNT OF THE BALANCE OF PAYMENTS (NET REVENUES)

Table 15

	Goods (fob)	Services	Goods and services	Wages and property income	Current transfers	Total current account
	Kr. billion					
2004	54.5	19.8	74.4	-2.4	-27.7	44.2
2005	43.9	38.3	82.2	9.9	-25.0	67.1
2006	17.3	40.5	57.8	16.6	-27.4	47.0
2007	-2.3	41.7	39.4	0.8	-28.2	12.0
2008	-7.2	50.6	43.4	23.9	-29.5	37.8
May 07 - Apr 08	-1.2	43.6	42.4	3.7	-25.0	21.1
May 08 - Apr 09	-6.3	45.6	39.3	32.5	-33.4	38.4
Nov 08	-1.3	5.0	3.7	3.7	-2.4	5.0
Dec 08	-0.1	2.0	1.9	2.6	-1.9	2.6
Jan 09	-4.2	1.6	-2.7	1.8	-3.9	-4.8
Feb 09	-0.4	3.6	3.2	1.9	-3.9	1.3
Mar 09	2.7	-0.5	2.2	0.7	-3.2	-0.2
Apr 09	-0.8	2.2	1.4	3.9	-2.5	2.9

Note: As of 2005 the compilation is based on new sources and methodologies resulting in breaks in data.

**FINANCIAL ACCOUNT OF THE BALANCE OF PAYMENTS
(NET PAYMENTS FROM ABROAD)**

Table 16

	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							
2004	44.4	62.1	-62.6	-87.1	-22.5	59.4	-6.2
2005	70.0	-97.1	77.2	-68.8	23.2	-16.2	-11.8
2006	47.0	-50.2	16.1	-103.3	83.4	-31.4	-38.3
2007	12.3	-111.7	64.5	-34.2	54.1	13.7	-1.2
2008	38.2	-138.7	55.7	38.5	-65.5	0.3	-71.4
May 07 - Apr 08	21.5	-74.5	74.5	-58.8	66.3	-21.1	7.8
May 08 - Apr 09	38.8	-150.0	58.4	55.6	27.4	37.9	68.1
Nov 08	5.0	6.5	3.7	-8.0	26.0	-22.6	10.7
Dec 08	2.6	-5.4	-5.5	25.9	-28.7	50.1	39.2
Jan 09	-4.7	-8.4	7.3	17.7	24.9	-11.5	25.3
Feb 09	1.3	-15.6	10.1	-0.1	14.3	33.9	43.8
Mar 09	-0.2	-9.5	6.6	18.2	45.8	-8.4	52.5
Apr 09	2.9	-9.4	1.5	6.5	26.6	-2.1	26.1

¹ This item may differ from the total of the below Table 17, as portfolio investments are published 1-2 weeks earlier than the rest of the balance of payments.

² Including errors and omissions and until end-December 2004 unrecorded trade credits.

³ As from 2005 transactions on all Danmarks Nationalbank's accounts with abroad. Until end-2004 only transactions on accounts included by compilation of the foreign-exchange reserve, 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 17

	Danish securities			Foreign securities		Total ¹
	Krone-denominated bonds, etc.	Foreign currency denominated bonds, etc.	Shares	Bonds, etc.	Shares	
Kr. billion						
2004	-6.2	56.9	9.7	-104.4	-43.0	-87.1
2005	20.8	122.5	-18.9	-108.2	-85.0	-68.8
2006	16.3	70.0	-34.4	-21.5	-133.8	-103.3
2007	26.0	72.6	17.2	-97.1	-52.8	-34.2
2008	-58.7	135.9	10.1	-90.0	50.1	47.4
Dec 08	-5.9	42.4	0.3	-9.1	2.8	30.5
Jan 09	7.7	25.7	-1.4	-3.5	2.0	30.5
Feb 09	-8.3	38.9	0.4	-21.5	-2.4	7.0
Mar 09	15.9	12.9	3.1	-20.5	4.4	15.8
Apr 09	-1.4	5.3	3.0	0.1	-0.6	6.5
May 09	-2.6	41.5	10.7	-14.6	-6.9	28.1

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 the above Table 16, as the rest of the balance of payments is published 1-2 weeks later.

DENMARK'S EXTERNAL ASSETS AND LIABILITIES

Table 18

End of period	Direct investments		Portfolio investments		Financial derivatives, net	Other investments			Danmarks Nationalbank	Total
	Equity	Inter-company debt, etc.	Shares, etc.	Bonds, etc.		Trade credits	Loans and deposits	Other		
	Kr. billion									
Assets										
2004	471	220	369	547	48	34	584	20	223	2,515
2005	564	253	556	684	85	37	720	19	217	3,136
2006	583	257	741	674	47	41	823	30	178	3,374
2007	629	284	789	733	-3	49	1,035	32	176	3,724
2008	651	366	456	780	66	49	1,092	36	226	3,722
Q1 08	619	302	683	690	14	51	1,073	32	185	3,651
Q2 08	678	318	663	740	-4	53	1,154	33	169	3,803
Q3 08	661	395	587	758	18	53	1,124	31	165	3,793
Q4 08	651	366	456	780	66	49	1,092	36	226	3,722
Q1 09	688	383	430	836	37	50	1,080	36	269	3,809
Liabilities										
2004	429	208	241	857	...	20	816	20	2	2,593
2005	506	231	311	1,019	...	27	967	21	3	3,084
2006	488	273	358	1,067	...	32	1,144	34	4	3,401
2007	528	272	427	1,122	...	36	1,407	37	5	3,835
2008	542	290	245	1,191	...	43	1,405	40	121	3,877
Q1 08	520	281	388	1,143	...	36	1,448	35	3	3,855
Q2 08	529	292	416	1,135	...	39	1,534	38	2	3,984
Q3 08	540	293	344	1,128	...	41	1,543	37	27	3,953
Q4 08	542	290	245	1,191	...	43	1,405	40	121	3,877
Q1 09	549	301	231	1,310	...	40	1,483	38	46	4,000
Net assets										
2004	42	12	128	-310	48	14	-233	0	221	-78
2005	59	22	245	-335	85	10	-247	-2	214	51
2006	94	-16	382	-393	47	9	-321	-5	174	-27
2007	100	12	363	-389	-3	13	-372	-5	171	-112
2008	109	76	211	-411	66	6	-313	-4	105	-155
Q1 08	99	21	295	-453	14	15	-375	-3	183	-204
Q2 08	149	26	247	-395	-4	14	-380	-5	167	-181
Q3 08	121	102	243	-370	18	11	-418	-5	138	-160
Q4 08	109	76	211	-411	66	6	-313	-4	105	-155
Q1 09	139	82	199	-475	37	10	-403	-3	223	-191

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

GDP BY TYPE OF EXPENDITURE

Table 19

	Final domestic demand						Exports of goods and services	Imports of goods and services
	GDP	Private consumption	General-government consumption	Gross fixed capital formation	Change in inventories	Total		
		Kr. billion						
2004	1,466.2	707.2	389.0	285.0	13.5	1,394.8	665.0	593.6
2005	1,545.3	745.1	402.5	303.9	17.9	1,469.5	757.0	681.2
2006	1,628.6	792.8	422.5	349.5	14.4	1,579.2	846.5	797.0
2007	1,687.9	826.7	438.8	376.7	9.5	1,651.7	882.8	846.6
2008	1,733.5	851.2	463.0	366.3	13.1	1,693.6	950.9	911.1
Q1 08	416.9	210.1	110.3	87.8	5.1	413.4	226.1	222.6
Q2 08	441.7	217.5	114.5	94.5	3.8	430.3	245.3	233.9
Q3 08	434.7	207.8	116.5	90.9	3.0	418.3	247.3	230.9
Q4 08	440.3	215.8	121.7	93.0	1.1	431.7	232.2	223.6
Q1 09	398.8	200.0	118.0	80.9	-1.5	397.5	196.8	195.5
Real growth compared with previous year, per cent								
2004	2.3	4.7	1.8	3.9	...	4.4	2.8	7.7
2005	2.4	3.8	1.3	4.7	...	3.5	8.0	11.1
2006	3.3	4.4	2.1	13.3	...	5.3	9.1	13.9
2007	1.6	2.4	1.3	3.1	...	2.0	2.2	2.8
2008	-1.2	-0.2	1.5	-5.1	...	-0.7	2.2	3.4
Q1 08	-0.2	2.5	0.2	-2.7	...	0.9	1.5	3.5
Q2 08	0.8	2.7	1.4	-2.6	...	1.0	6.7	7.2
Q3 08	-1.5	-0.7	2.3	-3.6	...	-1.0	2.4	3.7
Q4 08	-3.8	-4.9	2.0	-10.7	...	-3.6	-1.5	-0.5
Q1 09	-4.1	-6.9	2.7	-6.3	...	-5.9	-4.6	-8.1
Real growth compared with previous quarter (seasonally adjusted), per cent								
Q1 08	-0.5	0.3	-0.9	-2.7	...	-0.7	1.5	3.4
Q2 08	-0.4	-1.1	1.0	-3.1	...	-1.0	1.3	0.6
Q3 08	-0.9	-2.2	0.9	0.6	...	-0.8	-1.3	-1.4
Q4 08	-2.0	-2.0	0.9	-5.8	...	-2.1	-2.7	-3.1
Q1 09	-1.1	-2.3	-0.1	1.7	...	-0.8	-1.6	-4.2

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

Table 20

	HICP							Index of net retail prices ¹		
	Total	Energy	Food	Core inflation ²	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 :	
					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									
2004	0.9	2.6	-2.1	1.5	2.8	4.8	1.1	0.8	1.1	0.6
2005	1.7	7.6	1.0	1.0	2.4	3.2	0.6	0.7	3.4	-0.6
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
Q1 06	2.0	8.9	0.9	1.2	2.2	2.6	1.0	1.1	3.7	-0.1
Q2 06	2.0	8.3	1.9	1.0	2.0	0.4	1.0	1.1	3.8	-0.2
Q3 06	1.8	3.9	2.6	1.3	2.0	0.2	1.2	1.6	3.2	0.8
Q4 06	1.6	0.4	3.5	1.3	2.0	0.4	1.3	1.3	1.9	1.0
Q1 07	1.9	1.1	4.1	1.3	2.0	0.3	1.3	1.3	1.7	1.1
Q2 07	1.5	-1.7	3.6	1.5	2.1	0.2	1.5	1.4	0.9	1.7
Q3 07	1.0	-1.4	2.0	1.2	2.2	0.8	1.0	1.2	0.9	1.4
Q4 07	2.2	3.3	5.2	1.2	2.0	1.0	1.2	1.6	2.0	1.4
Q1 08	3.2	7.5	6.0	1.7	2.2	2.4	1.6	2.0	3.6	1.2
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	5.0	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

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 57.4 per cent of HICP's weight basis and 50.7 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 21

	Unemployment Per cent of labour force	Quantity index		Forced sales of real property	New passen- ger car registra- tions	Con- sumer confi- dence indicator	Composite cyclical indicator for		
		Manu- facturing industry 2005=100	Retail trade 2005=100				Manu- facturing industry	Building and construc- tion	Service
2004	5.8	97.2	91.4	2,640	122,543	7	3	-5	13
2005	5.1	100.0	100.0	1,874	148,578	9	0	7	20
2006	3.9	105.7	103.2	1,231	156,719	10	9	21	24
2007	2.8	107.0	104.5	1,392	162,481	7	5	9	20
2008	1.9	106.7	101.3	2,840	150,662	-8	-7	-16	3
Seasonally adjusted									
Jan 09	2.3	95.5	97.5	295	8,909	-12	-32	-39	-18
Feb 09	2.6	92.7	97.4	324	8,868	-11	-34	-41	-23
Mar 09	2.9	90.5	97.5	241	9,265	-10	-31	-45	-25
Apr 09	3.3	91.7	97.1	290	8,726	-5	-34	-44	-16
May 09	3.5	...	96.9	363	8,790	-6	-21	-43	-15
Jun 09 .....	...	...	...	...	...	-6	-15	-41	-13

¹ Excluding shipbuilding.

SELECTED QUARTERLY ECONOMIC INDICATORS

Table 22

	Employment		Hourly earnings			Property prices (purchase sum, one-family dwellings) As a percentage of property value 2006
	Total	Private	All sectors in Denmark, total	Manufacturing industry in Denmark	Manufacturing industry abroad	
	1,000 persons		1996=100			
2004	2,739	1,898	137.4	138.0	127.5	70.1
2005	2,767	1,924	141.4	141.7	130.7	82.5
2006	2,822	1,978	145.7	146.1	134.0	100.0
2007	2,898	2,056	151.3	152.0	137.1	104.8
2008	2,922	2,084	157.9	158.4	141.7	100.1
Seasonally adjusted						
Q1 08	2,928	2,093	155.4	156.2	140.7	102.8
Q2 08	2,925	2,087	157.4	158.1	141.2	103.6
Q3 08	2,927	2,086	158.8	159.5	142.3	100.8
Q4 08	2,911	2,073	160.2	160.5	142.7	93.0
Q1 09	2,874	2,034	161.8	162.0	143.4	...
Change compared with previous year, per cent						
2004	-0.6	-0.8	3.1	3.1	2.7	8.9
2005	1.0	1.4	2.9	2.7	2.5	17.6
2006	2.0	2.8	3.1	3.1	2.5	21.6
2007	2.7	4.0	3.8	4.0	2.3	4.6
2008	0.9	1.4	4.4	4.2	3.3	-4.6
Q1 08	1.5	2.5	4.4	4.4	3.8	-1.2
Q2 08	1.2	1.9	4.7	4.4	3.3	-1.8
Q3 08	0.9	1.2	4.4	4.2	3.5	-4.7
Q4 08	-0.1	0.0	4.1	3.7	2.7	-10.5
Q1 09	-1.8	-2.8	4.1	3.7	1.9	...

EXCHANGE RATES

Table 23

	EUR	USD	GBP	SEK	NOK	CHF	JPY
	Kroner per 100 units						
	Average						
2004	743.98	598.93	1,096.69	81.54	88.90	481.96	5.5366
2005	745.19	600.34	1,090.02	80.29	93.11	481.30	5.4473
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
Jan 09	745.19	563.16	811.98	69.48	80.92	499.00	6.2313
Feb 09	745.14	582.88	840.26	68.37	84.84	499.96	6.3033
Mar 09	745.09	571.46	810.44	66.70	84.31	494.14	5.8408
Apr 09	744.91	565.01	830.37	68.47	84.78	492.00	5.7284
May 09	744.69	546.99	841.44	70.23	84.73	492.97	5.6487
Jun 09	744.56	531.93	870.89	68.43	83.26	491.59	5.5032

EFFECTIVE KRONE RATE

Table 24

	Nominal effective krone rate	Consumer-price indices		Real effective krone rate based on consumer prices	Real effective krone rate based on hourly earnings	Consumer-price index in the euro area
		Denmark	Abroad			
Average	1980=100					2005=100
2004	102.2	237.4	224.0	108.3	109.8	97.9
2005	101.6	241.7	228.4	107.6	109.6	100.0
2006	101.6	246.2	233.0	107.5	110.3	102.2
2007	103.2	250.5	238.2	108.5	113.7	104.4
2008	105.8	259.0	245.8	111.5	117.7	107.8
Jan 09	107.3	258.3	244.3	114.3	...	107.0
Feb 09	106.7	261.6	245.3	114.7	...	107.4
Mar 09	108.0	262.5	245.8	116.2	121.4	107.8
Apr 09	107.4	262.2	246.6	115.0	...	108.2
May 09	107.5	262.9	...	...	...	108.3
Jun 09	108.0	...	...	...	...	...
Change compared with previous year, per cent						
2004	1.0	1.2	1.7	0.4	1.3	2.1
2005	-0.6	1.8	1.9	-0.7	-0.2	2.2
2006	0.0	1.9	2.0	0.0	0.7	2.2
2007	1.6	1.7	2.2	0.9	3.1	2.2
2008	2.5	3.4	3.2	2.8	3.5	3.3
Jan 09	2.1	1.8	1.1	3.7	...	1.1
Feb 09	1.6	1.9	1.1	3.5	...	1.2
Mar 09	1.8	1.8	0.7	4.0	4.7	0.6
Apr 09	0.8	1.4	0.7	2.5	...	0.6
May 09	1.1	1.3	...	...	...	0.0
Jun 09	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.

The weights are based on trade in manufactured goods in 2002.

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

Danmarks Nationalbank's Statistical Publications

Periodical electronic publications

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

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

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

Statistics databank

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

Special Reports

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

Release calendar

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