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The small picture on the front cover is a section of the Århus City Hall Tower, chosen as the motif for the first coin in a series of 7-10 thematic coins that are issued over a number of years.

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Managing Editor: Jens Thomsen  
Editor: Anders Møller Christensen

The Monetary Review can be ordered from:

Danmarks Nationalbank, Information Desk, Havnegade 5, DK-1093 Copenhagen K.

Telephone +45 33 63 70 00 (direct) or +45 33 63 63 63.

E-mail: [info@nationalbanken.dk](mailto:info@nationalbanken.dk)

[www.nationalbanken.dk](http://www.nationalbanken.dk)

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## Recent Economic and Monetary Trends

*This review covers the period from mid-May to the end of August 2003*

### THE INTERNATIONAL FINANCIAL MARKETS

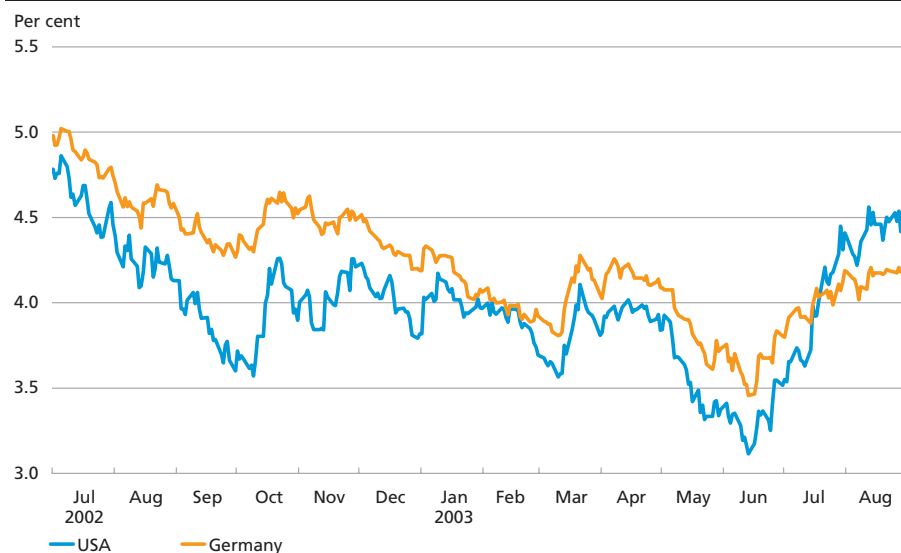
After a period of low growth and pronounced uncertainty regarding future developments the signs of an upswing in the USA became clearer during the summer. Japan has shown more favourable economic development than expected, and several confidence indicators point towards the upswing soon spreading to Europe.

In the past quarter, the financial markets in particular have become more optimistic. Stock prices rose, and bond yields increased considerably from mid-June, especially in the USA.

10-year yields fell at the beginning of the period in the light of debate in the USA of the potential risk of deflation, i.e. a general tendency for prices and wages to decline. On 13 June, the US long-term yield had reached 3.12 per cent, the lowest level since 1958, while the German long-term yield was more than 30 basis points higher, cf. Chart 1. Predominantly favourable data releases in the USA spurred a period with

10-YEAR GOVERNMENT-BOND YIELDS IN THE USA AND GERMANY

Chart 1



Note: Daily observations. Most recent observation 29 August 2003.

Source: EcoWin.

## THE PASS-THROUGH OF COMMUNICATION AND INTEREST-RATE DECISIONS IN THE USA TO INTEREST RATES

Box 1

The monetary-policy interest rates impact on the real economy via e.g. market interest rates. The short-term interest rates are closely related to the monetary-policy interest rates and the expectations of near-term development. Bond yields are also affected by news entailing adjusted expectations of economic development.

Since market interest rates depend on expectations of the future, they tend to react to news and signals that change these expectations. For example, a signal from a central bank concerning a forthcoming interest-rate adjustment will impact on the market interest rate before the monetary-policy interest rate is actually adjusted. The market interest rates will normally show no further reaction if the monetary-policy interest rate is subsequently adjusted as expected.

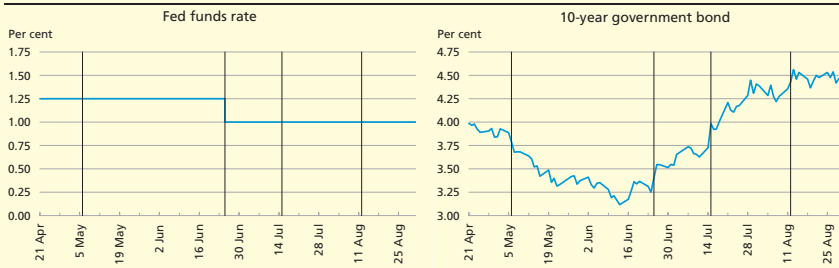
The significant adjustments of long-term yields in the USA during the spring and summer have been attributed to the wording of press releases at the meetings of the FOMC (Federal Open Market Committee) rather than the actual interest-rate decisions at the meetings.

The monetary-policy interest rate was not adjusted at the FOMC meeting on 6 May, but the long-term yield fell considerably after the meeting. At the FOMC meeting on 25 June the interest rate was lowered by 25 basis points, but on the following days the bond yield rose abruptly. The bond yield rose further after the central-bank governor's semi-annual address to Congress on 15 and 16 July, and after the FOMC meeting on 12 August at which the monetary-policy interest rate remained unchanged.

This development can be assigned to many factors, but has been attributed by many observers to minor adjustments to the statements on deflation risk. In more general terms, the central bank's own analyses indicate that communication such as speeches and press releases is of importance to the course of the long-term yields.<sup>1</sup>

### INTEREST-RATE TRENDS IN THE USA

Chart 2



Note: The vertical lines indicate FOMC meetings, and the address to Congress on 15 July.

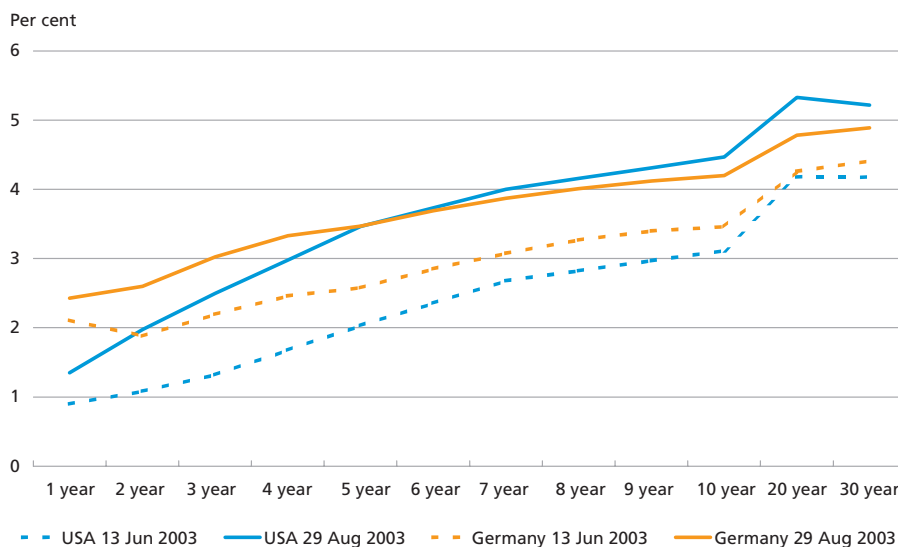
Source: EcoWin.

<sup>1</sup> See Donald L. Kohn and Brian P. Sack, Central bank talk: Does it matter and why?, Presented at the Macroeconomic Monetary Policy and Financial Stability Conference in Honour of Charles Freedman, Bank of Canada, Ottawa, June 2003.

interest-rate increases and a more optimistic view of the economy. Interest-rate increases in Europe were more moderate, and since mid-July long-term yields have been higher in the USA than in Germany. The interest-rate increases are primarily attributed to expectations of an

YIELD CURVES IN THE USA AND GERMANY

Chart 3



Source: EcoWin.

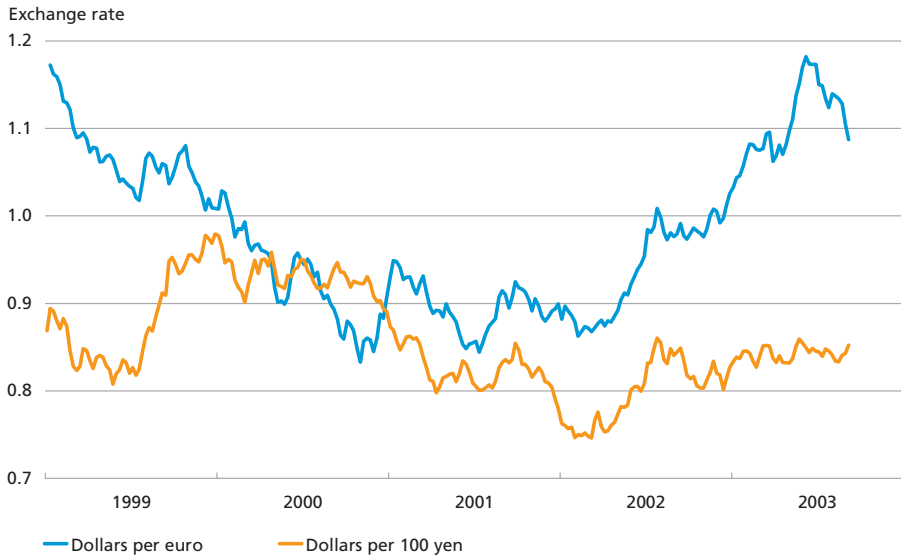
imminent upswing, including normalised inflation expectations, but may also have been affected by an increasing supply of bonds to finance growing budget deficits, particularly in the USA. Furthermore, interest-rate fluctuations may be self-reinforcing, as the interest-rate sensitivity of callable US bonds tends to increase when yields rise from a low level. When interest rates are falling this may trigger pressure to buy, which tends to push yields further down. Conversely, an interest-rate increase may trigger pressure to sell, which will push yields further up.<sup>1</sup> At the end of August the US long-term yield had risen to 4.5 per cent, while the German long-term yield was 4.2 per cent. The development in long-term yields is furthermore considered to be a response to statements and interest-rate reductions by the Federal Reserve, which is described in further detail in Box 1.

In the euro area, the monetary-policy interest rates were lowered by 50 basis points to 2 per cent on 5 June, while in the USA the fed funds target rate was cut by 25 basis points to 1 per cent on 25 June. The money-market-interest rates fell up to mid-June, after which the 3-month interest rates have shown little fluctuation. For the short- and medium-term maturities the yield curves steepened, particularly in the USA, cf. Chart 3, which accords with growing expectations of an economic upswing.

<sup>1</sup> For more details see Louise Mogensen, Market Dynamics at Low Interest Rates, Danmarks Nationalbank, *Monetary Review*, 1st Quarter 2002.

## DEVELOPMENT IN EXCHANGE RATES OF THE MAJOR CURRENCIES

Chart 4



Note: Daily observations. Most recent observation 29 August.  
Source: EcoWin.

In contrast to bond yields, the international stock markets rallied at the beginning of the period, and since mid-June especially the US S&P 500 index has been more stable. The rising interest rates may have contributed to dampening stock prices, since the present value of future profits is reduced when interest rates are rising. The US S&P 500 index has increased by approximately 6 per cent since mid-May, while the European DJ Stoxx 600 index has risen by approximately 9 per cent.

The euro reached the highest ever exchange rate vis-à-vis the US dollar at 1.19 dollars per euro at the end of May, cf. Chart 4. At the commencement of EMU in January 1999 the exchange rate was 1.17 dollars per euro. The euro has weakened since the end of May and had fallen to approximately 1.10 dollars per euro by the end of August. Viewed in a long-term perspective, the euro is not particularly strong. Most measures of the equilibrium exchange rate between the euro and the dollar compiled in 2000-01 are within the range of approximately 1.10 and 1.30 dollars per euro.<sup>1</sup> In the period under review, the Japanese yen fluctuated within the range of 116-121 yen per dollar with a tendency to weaken at the beginning of the period and to strengthen in August.

The oil price (Brent) increased steadily from approximately 26 dollars per barrel in mid-May to almost 30 dollars per barrel at the end of

<sup>1</sup> See the review in Targeting the Euro, *OECD Economics Department, Working Paper 298* and Economic fundamentals and the exchange rate of the euro, *ECB Monthly Bulletin*, January 2002.

August. One factor contributing to the price increase was growing uncertainty as to when the oil supply from Iraq would be restored. The gold price rose briefly at the start of the period, and then slowly subsided. In August, the gold price was rising again.

## THE INTERNATIONAL ECONOMY

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### USA

GDP growth in the USA was 0.8 per cent in the 2nd quarter. The growth was broadly attributable to an increase in private consumption and government spending and in capital formation. Military expenditure was the main factor contributing to the increase in government spending. The contributions to growth from stockbuilding and net exports were negative, since imports rose and exports fell.

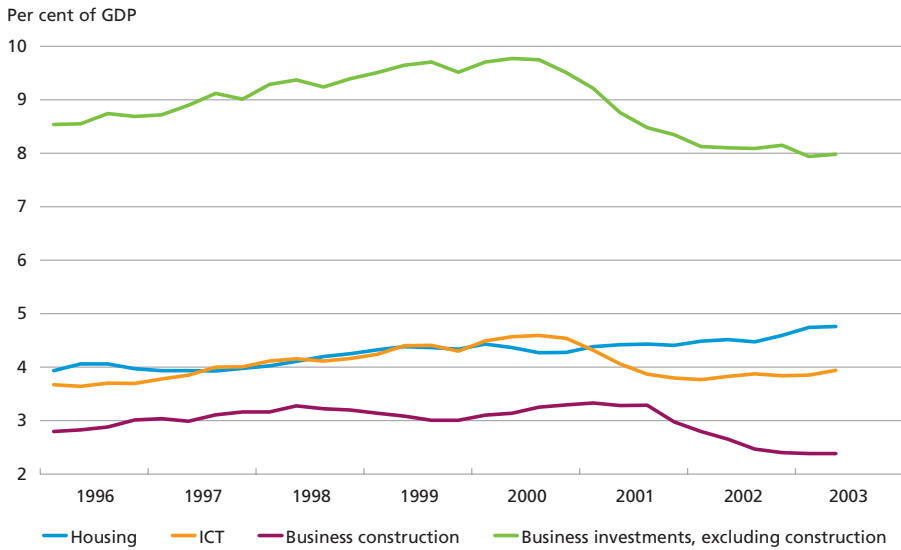
The 2nd quarter showed a higher rate of growth than the preceding quarters, and capital formation expanded after decreasing since the end of 2000. Certain monthly observations in the 3rd quarter indicate continued improvement. Retail sales exceeded expectations and the order intake is on the increase. The ISM index to measure business confidence in the USA has risen for four consecutive months. In July and August, the index exceeded 50, considered to be the threshold value for business confidence indicating growth in the US manufacturing sector. Industrial production was flat at the beginning of the period, but increased in July.

In the short term, economic growth in the USA is buoyed up by expansionary fiscal and monetary policy. Tax cuts totalling 350 million dollars over 10 years were adopted in May. So far, the expansionary measures are of a temporary nature and the government deficit will rise primarily in 2003-05. The expansionary measures will help to sustain consumption, unless the soundness of fiscal policy in the longer term is perceived as uncertain. After interest rates were lowered in June, the Fed Funds rate is 1.0 per cent, and the low level of interest rates stimulates investments as well as consumption. Moreover, the weakening of the US dollar since the beginning of 2002 has improved competitiveness.

The decline in investments, cf. Chart 5, has been the most significant factor contributing to the weak economic development since 2001. A self-sustaining upswing requires higher investments. After decreasing strongly in 2001 non-construction business investment has shown signs of an increase, particularly when compiled in constant prices. Investments in information and communication technology (ICT) especially were reduced when the IT bubble burst, and ICT investment is now characterised by renewal. Business construction has decreased strongly, while housing investments have increased steadily.

BUSINESS INVESTMENTS IN THE USA, PER CENT OF GDP

Chart 5



Note: The Chart shows nominal investments as a ratio of nominal GDP. In constant prices, ICT investments show a stronger increase.

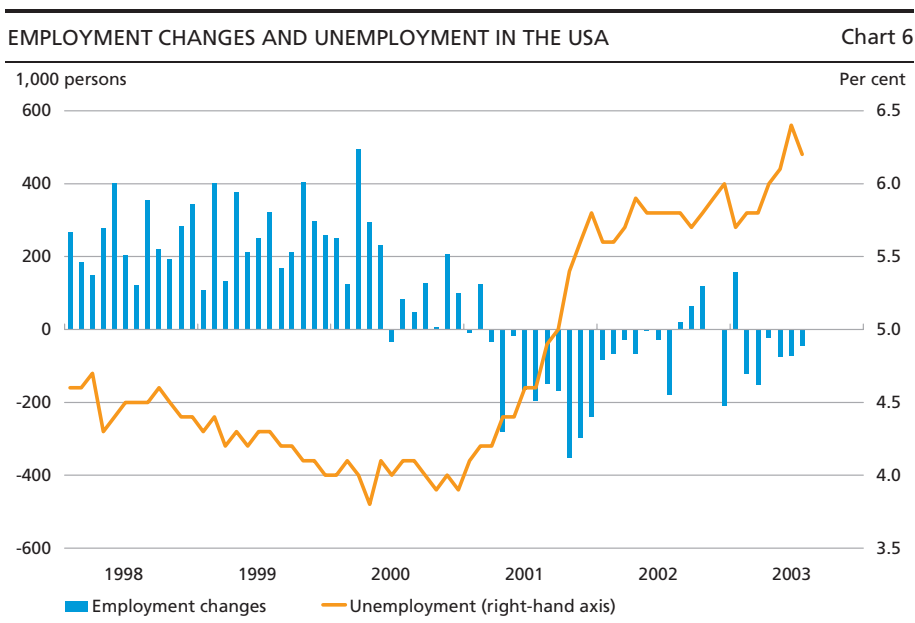
Source: EcoWin.

The level of private consumption has been high for a sustained period. In a strong housing market re-mortgaging activity has stimulated consumption. However, the most recent increase in interest rates will dampen the re-mortgaging activity. At the same time, the employment picture, as described below, may increase uncertainty and reduce consumer optimism. Consumer confidence rose in August after falling in July, but consumers' assessment of the current economic situation is still low. It is possible that consumption may be dampened a little, even though fiscal and monetary policy is expansionary.

The labour market continues to be weak. Although unemployment fell to 6.2 per cent in July, employment also declined for the sixth consecutive month, cf. Chart 6. As the normal pattern is for employment to react sluggishly to an increase in output, the fall in employment is not incompatible with an emerging upswing.

In recent months, annual consumer-price inflation has been almost constant, and was 2.1 per cent in July. Core inflation, calculated as the annual rate of increase in consumer prices excluding energy and food, was low in the period, but almost constant, and was 1.5 per cent in July. There is thus no immediate risk of deflation in the USA.

In the longer term, the imbalances in the US economy may still dominate the agenda. After the most recent easing of fiscal policy the federal budget deficit is expected to exceed 4 per cent of GDP in the fiscal years



Note: Change in employment from the previous month, and unemployment as a percentage of the labour force.  
Source: EcoWin.

2003 and 2004, cf. the semi-annual estimate of the President's Budget Office. At the same time, many states face major financial problems requiring significant tightening measures. The level of household savings is low, and the current-account deficit, which must be financed via ongoing foreign investments or loans, totalled 5.1 per cent of GDP in the 1st quarter. If the significant government deficits continue, the IMF, among others, finds that the deficits will sooner or later impede investments in the USA and curtail productivity growth.

### The euro area

The euro area showed slightly negative growth in the 2nd quarter of 2003 after a period of low and declining growth rates. The first quarter saw a growth rate of 0.1 per cent, falling exports and investments, and stockbuilding. Without stockbuilding the economy would have declined.

Consumer confidence in the euro area has increased in recent months, but is still at a low level. This increase may be a first sign of positive growth, driven by higher domestic consumption. Business confidence has also begun to rise in several countries, but is still low, with no sign as yet of an upturn in industrial production.

The European economy does not suffer the same financial imbalances as the US economy, but does face the problems of high structural unemployment. However, several member states are unable to meet the requirements regarding public finances stipulated in the Stability and

## FINANCIAL CONDITIONS INDICES IN THE EURO AREA AND THE USA

Box 2

Financial conditions can be assessed on the basis of an index measuring the impact of exchange and interest rates on economic activity. An increase in the index reflects a tightening of financial conditions.<sup>1</sup>

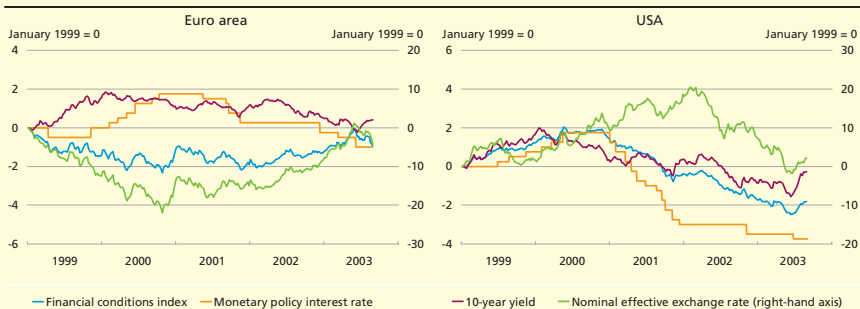
The index includes the change in the nominal effective exchange rate, the monetary-policy interest rate and the 10-year yield from a given time, here chosen as January 1999. The weighting of changes in the effective exchange rate and interest rates respectively is determined on the basis of the impact on economic activity one year ahead. Calculations for the euro area using the global NiGEM model show that an adjustment of the short-term and long-term interest rates by 1 percentage point has the same impact on activity one year ahead as an adjustment of the exchange rate by 5 per cent. In the index for the euro area interest-rate adjustments in percentage points must therefore be weighted five times higher than exchange-rate adjustments in percentage terms. If the monetary-policy interest rate and long-term interest rate are given the same weighting, the weights for the euro area are: exchange rate 1/6, monetary-policy interest rate 5/12 and long-term yields 5/12. For the USA, the weights are: 1/21 for the exchange rate and 10/21 for each interest rate. The lower weighting of the exchange rate in the USA than in the euro area reflects the higher degree of openness of the euro area's economy. As a result, the euro area's economy is affected more by exchange-rate adjustments. In addition, the euro-area economy is less sensitive to changes in interest rates than the US economy.

For the euro area the index shows that the financial conditions are slightly less expansionary than at the beginning of 2002, despite the easing of monetary policy, cf. Chart 7. The underlying factor is that the lower level of interest rates is more than offset by the appreciation of the euro. The financial conditions have eased slightly since June, however, as the reduction of the monetary-policy interest rate and the euro's depreciation have had a stronger impact than the increase in long-term yields.

In the USA, the reduction of the monetary-policy interest rate contributed to easing the financial conditions in 2001. Since then, the monetary-policy interest rate as well as the long-term yields and the exchange rate, have contributed to easing the financial conditions. However, the increase in long-term yields and the appreciation of the dollar have led to a minor tightening in recent months.

## FINANCIAL CONDITIONS INDICES IN THE EURO AREA AND THE USA

Chart 7



Note: Weekly average.

Source: EcoWin and own calculations.

<sup>1</sup> See Niels Lynggård Hansen, Monetary Conditions Indices, Danmarks Nationalbank, *Monetary Review*, May 1997.

Growth Pact, cf. below. Domestic demand has shown weak growth for some time. Households' disposable real incomes have indeed increased, but uncertainty concerning the necessary reforms of e.g. the pension systems and the high unemployment rate appear to have an adverse impact on private consumption. At the same time, investments are impeded by low capacity utilisation.

Annual consumer-price inflation rose from 1.9 per cent in July to 2.1 per cent in August, according to the flash estimate of the Harmonised Index of Consumer Prices (HICP). Core inflation, compiled as the increase in consumer prices excluding energy and food, fell from 1.8 per cent in June to 1.6 per cent in July. Germany's inflation has been around 1 per cent since the middle of 2002, and was 1.1 per cent in August.

At its meeting at the beginning of June, the ECB's Governing Council decided to lower the monetary-policy interest rates by 0.50 per cent. The motivation was that the outlook for price stability in the medium term had improved significantly. The reduction of interest rates was also to take into account the downside risks to economic growth. The minimum bid rate was reduced to 2.0 per cent.

The low level of monetary-policy interest rates has a positive impact on activity, but this is offset by the euro's strengthening since the end of 2001. This is amplified by several Asian countries' fixed-exchange-rate regimes vis-à-vis the US dollar, whereby a large proportion of the international adjustment is via the euro/dollar exchange rate. The financial conditions in the euro area, i.e. short-term and long-term interest rates and the exchange rate, are overall found to be somewhat less expansionary than a year ago, cf. Box 2.

Sustained high deficits in several member states undermine the credibility of the Stability and Growth Pact. France and Germany have not improved their government budgets since last year when they exceeded the limit of 3 per cent of GDP for government budget deficits stipulated in the Maastricht Treaty. This limit will probably be exceeded again in 2004.<sup>1</sup> Italy and Portugal are also close to the limit.

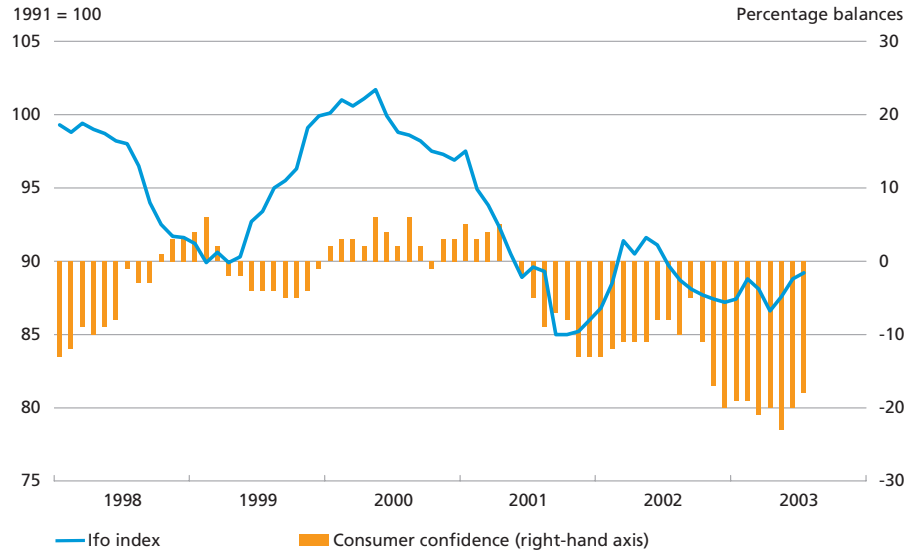
Germany has strengthened its efforts to introduce reforms and is expected to implement additional reforms in January 2004. The German government has partly adopted labour-market reforms to reduce the rigidities of the German labour market by e.g. reducing the period of eligibility for social security benefits. A scheduled health reform will imply a shift towards increased user fees and contribute to reducing indirect labour costs. In addition, the government will bring forward an

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<sup>1</sup> Cf. The Budgetary Situation in Germany and France, p. 77ff.

CONSUMER AND BUSINESS CONFIDENCE IN GERMANY

Chart 8



Source: EcoWin.

already adopted tax reform whereby income taxes will be reduced as from 2004 rather than from 2005. The overall impact on the economy may be moderate initially, but a positive impact can be expected in the longer term. The reform plans may have had a positive effect on German confidence indicators. Consumer confidence has risen from a low level in recent months, and the Ifo consumer confidence index has increased for four consecutive months, primarily due to more positive expectations of the future, cf. Chart 8.

## Japan

The Japanese economy grew by 0.6 per cent in the 2nd quarter. This was the sixth consecutive quarter of growth in the Japanese GDP. Japan's GDP is now back at the level preceding the recession in 2001. Growth prospects have become more positive, and domestic demand is on the increase. Nonetheless, the labour market is still weak. The decrease in prices and wages is levelling out, although for prices this is partly related to temporary factors. In July consumer prices were 0.2 per cent lower than one year before.

Japanese bond yields fell at the beginning of the period, and by 12 June the Japanese 10-year yield was a mere 0.4 per cent, but rose strongly hereafter. The reversal was mainly attributable to optimism concerning the US economy. A contributing factor was that several investors, including Japanese banks, reduced their bond portfolios, thereby pushing yields

up further, and by the end of August the long-term yield in Japan was 1.5 per cent. At the same time, foreign investors took greater interest in Japanese stocks, and the Japanese Nikkei index rose by approximately 27 per cent in the period. Japan's monetary-policy interest rates have remained unchanged.

## **UK**

Quarter-on-quarter growth in the UK economy was 0.3 per cent in the 2nd quarter, which was slightly higher than in the 1st quarter. The modest growth is driven by domestic consumption, while the contribution from net exports fell. In year-on-year terms, industrial production rose in June for the first time since 2001.

The pound sterling appreciated in June, but weakened temporarily in July in connection with political concern related to the government's management of the Iraq war.

On 10 July, the Bank of England lowered its benchmark interest rate by 25 basis points to 3.50 per cent in view of lower than expected growth, and thereby lower inflationary pressure in the medium term. Furthermore, the Bank of England found that there was limited risk of stimulating house prices, given the slowdown in housing activity. House price inflation has diminished, but is still high. Annual house price inflation measured by the Halifax index was thus 18 per cent in July. Inflation has been falling, but in HICP terms it rose to 1.3 per cent in July.

In June, the Treasury assessed the economic consequences for the UK of possible EMU membership, cf. Box 3 on the five economic tests. The conclusions do not apply to Denmark, since Denmark pursues a fixed-exchange-rate policy vis-à-vis the euro and significant convergence has already been achieved.

## **Sweden**

Growth in the Swedish economy diminished to 0.3 per cent in the 2nd quarter due to a slowdown in investments, while private consumption rose.

Sveriges Riksbank eased its monetary policy when the benchmark interest rate was lowered by 50 basis points in June and by a further 25 basis points in July to 2.75 per cent. The interest-rate reductions were motivated by lower inflation than expected and prospects of low inflation 1-2 years ahead. In addition the interest-rate reduction in June was motivated by the downward adjustment of international growth prospects.

On 14 September, after this monetary review has gone to press, Sweden will hold a referendum on EMU participation. The opinion polls

## THE FIVE ECONOMIC TESTS FOR UK PARTICIPATION IN EMU

Box 3

In June, HM Treasury submitted an assessment of the five tests for UK participation in EMU set out by the government. The purpose of the five economic tests is to assess whether EMU membership for the UK is *clearly and unambiguously* compatible with the UK's economic interests. The five economic tests set out in 1997 are as follows:

- Are business cycles and economic structures compatible so that we and others could live comfortably with euro interest rates on a permanent basis?
- If problems emerge is there sufficient flexibility to deal with them?
- Would joining EMU create better conditions for firms making long-term decisions to invest in Britain?
- What impact would entry into EMU have on the competitive position of the UK's financial services industry, particularly the City's wholesale markets?
- In summary, will joining EMU promote higher growth, stability and a lasting increase in jobs?

HM Treasury's assessment is that significant progress has been made towards compliance with the five tests and that compliance with all five tests can be achieved if there is a sufficient degree of convergence. Only the fourth test, i.e. the competitiveness of the financial sector, was found to be in full compliance.

The assessment stressed that since 1997 the cyclical pattern in the UK has approached that of the euro area. This has rendered the level of interest rates in the euro area more appropriate to the UK. However, the possibility of divergence was still seen as a risk factor, so that the first test was not found to be compliant. One reason is the particular sensitivity of the British housing market to fluctuations in short-term interest rates, since in the UK housing loans are raised at variable interest rates, or at fixed interest rates and short maturities. At the same time, consumption in the UK is more closely associated with trends in the housing market than is the case in most other EU member states. Consequently, it is found that EMU membership might have a destabilising effect via the UK housing market and consumption. In this connection they plan among other things, to look at the Danish mortgage-credit market, which is less sensitive to fluctuations in short-term interest rates.

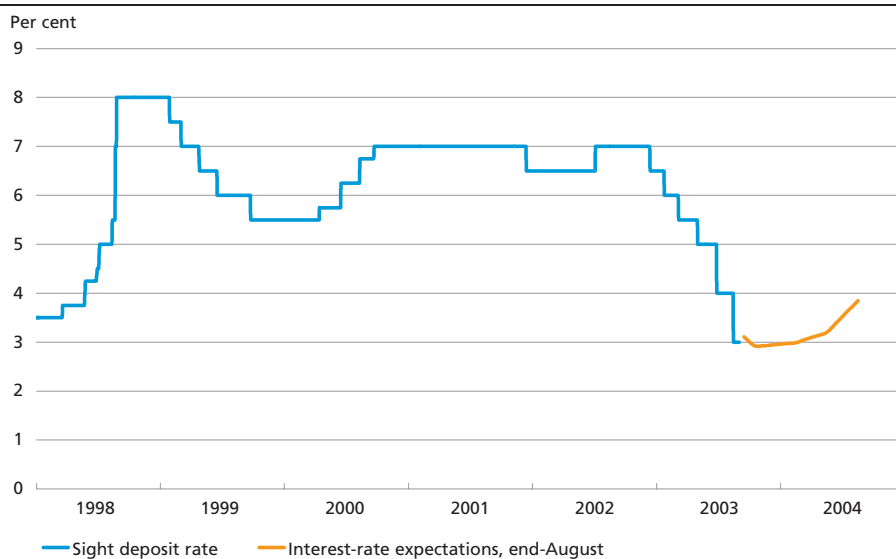
The flexibility of the UK economy was found to have improved in recent years, but not sufficiently for compliance with the second test. Finally, it is found that EMU membership would promote investment in the UK, trade with the euro area and economic growth, provided that there is sufficient convergence. Compliance with the third and fifth tests will thus be ensured once the first test is found to be compliant.

One of the measures to pave the way for possible EMU membership is to adjust the inflation target, whereby the Harmonised Index of Consumer Prices, HICP, will replace the national price index, RPIX. The main differences between the two price indices are the aggregation method and the inclusion of housing prices in RPIX, but not in HICP.

became more negative during the early summer. The interest-rate differential and the exchange rate vis-à-vis the euro area did not show any significant change during this period and there were no signs of convergence trading. Sveriges Riksbank, among others, expects the exchange rate on possible entry into EMU to be stronger than the current exchange rate.

SIGHT DEPOSIT RATE IN NORWAY

Chart 9



Note: The interest-rate expectations are implied 1-month forward interest rates.  
Source: EcoWin and own calculations.

## Norway

Growth in Norway's mainland economy was 0.3 per cent in the 2nd quarter following two quarters with negative growth. The main factor contributing to the positive growth in the 2nd quarter was that exports rose after falling constantly since the beginning of 2002 in view of weak cyclical development in the global economy and several years of high increases in domestic costs, which has weakened competitiveness. Domestic consumption made a positive contribution to GDP growth, while investments in mainland Norway decreased, so that the overall contribution from domestic demand became negative.

Inflation excluding energy and taxes fell to 0.7 per cent in July. The decline in inflation was predominantly attributable to falling prices for imported consumer goods. At the same time, the rate of wage increase has diminished from a high level, contributing to lower growth in domestic costs. At the beginning of the year the Norwegian krone was slightly above par vis-à-vis the Danish krone, but during the period under review the Norwegian krone weakened by approximately 5 per cent to 0.90 Norwegian kroner per Danish krone at the end of August.

Norges Bank cut the sight deposit rate by 1 per cent at the end of June, and again by 1 per cent in mid-August, after which the sight deposit rate was 3.0 per cent, cf. Chart 9. Norges Bank stated that inflation was lower than previously expected and even after the most recent in-

terest-rate reduction it assessed that with unchanged interest rates there was a high probability of lower inflation than the target of 2.5 per cent two years ahead.

### **The accession countries**

Nearly all the countries that were offered EU membership in the accession negotiations in December 2002 have now held referenda with a positive outcome. The last referendum is held in Latvia on 20 September.

The GDP growth of the accession countries taken as one was 2.4 per cent in 2002 and is expected by the European Commission to have increased to 3.1 per cent in 2003. Several of the countries have considerable government budget deficits, and do not immediately comply with the budget criterion in the Stability and Growth Pact. In recent years inflation in the future EU member states has fallen significantly, and in several of them, including Poland, inflation is close to zero.

The Hungarian forint was devalued on 4 June when the central rate of the forint was lowered at the initiative of the government by 2.25 per cent to 282.36 forint per euro. A factor contributing to the complexity of the monetary-policy conditions is that Hungary also seeks to meet an inflation target of 3.5 per cent +/- 1 per cent at year-end. With reference to the inflation target the monetary-policy interest rate was raised by 1 per cent on 10 June, and by a further 2 per cent on 18 June.

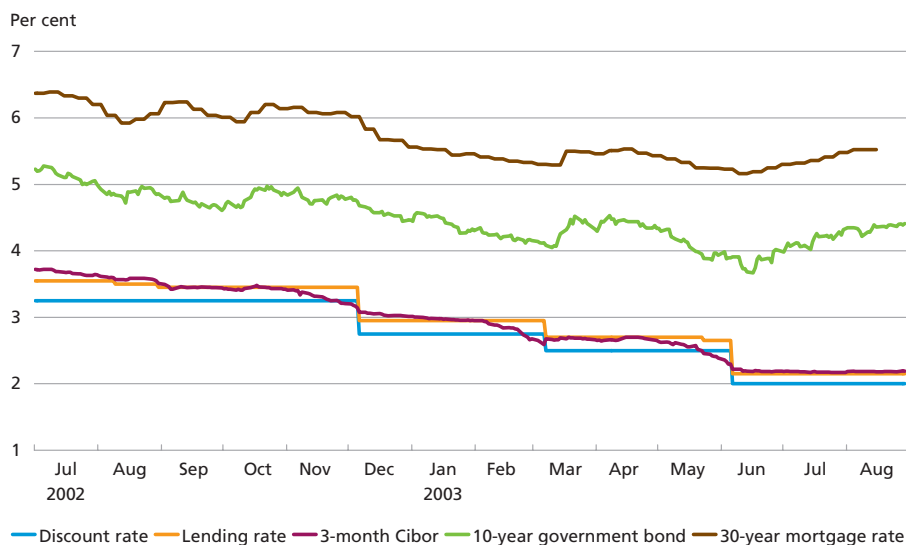
## **DEVELOPMENT IN THE DANISH FINANCIAL MARKETS**

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The krone remains stable against the euro at a slightly stronger level than the central rate of kr. 7.46038 per euro. In May and June Danmarks Nationalbank bought currency in the market to counter the krone's tendency to strengthen. On 23 May, Danmarks Nationalbank reduced the lending rate and the rate of interest for certificates of deposit by 5 basis points, against the background of a period of foreign-exchange purchases and a strong krone. Danmarks Nationalbank furthermore lowered the monetary-policy interest rates by 50 basis points on 6 June after the ECB's equivalent lowering of the monetary-policy interest rates on 5 June (Constitution Day in Denmark). At the end of June and the beginning of July the krone weakened a little and thereafter fluctuated between kr. 7.430 and kr. 7.436 per euro. The krone strengthened a little at the end of August to kr. 7.426 per euro at the close of the month. The lending rate and the rate of interest for certificates of deposit are now 2.15 per cent, and the spread to the ECB's minimum bid rate is 0.15 per cent. The discount rate and the current-account rate are 2.0 per cent.

MONEY-MARKET INTEREST RATES AND BOND YIELDS

Chart 10



Note: The 30-year mortgage rate is the weighted interest rate of the Association of Danish Mortgage Banks, available as weekly observations.

Source: The Association of Danish Mortgage Banks and Danmarks Nationalbank.

The inflow of foreign exchange in May and the beginning of June was to a certain degree attributable to the hedging of dollar assets by business enterprises and pension funds. When the dollar rebounded, this inflow ceased. The foreign-exchange reserve increased by kr. 32 billion from April to August, reaching kr. 230 billion at the end of August.

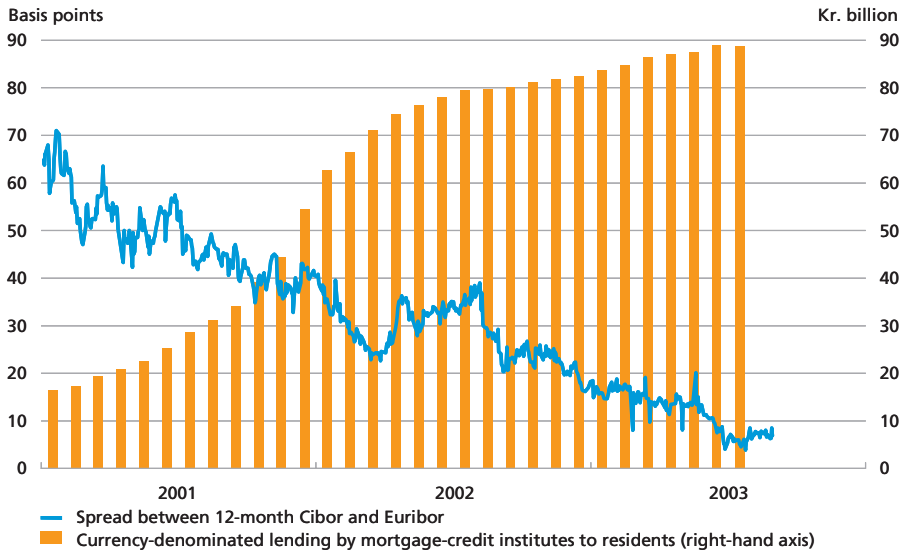
After Danmarks Nationalbank's reduction of interest rates in May the interest-rate differential between the Danish and euro-area money markets narrowed. This narrowing was sustained until the end of June when the 3-month money-market interest-rate differential was down to 4 basis points, against 13 basis points in mid-May. The interest-rate differential was still 4 basis points at the end of August.

Until mid-June Danish bond yields mirrored the downward trend of bond yields in the euro area, followed by a rising tendency, cf. Chart 10. The Danish stock market matched the international stock markets until the beginning of August, but then rose more strongly than most foreign stock indices. The KFX index increased by approximately 16 per cent in the period under review.

The financial conditions in Denmark have remained by and large unchanged during the past year, when compiled by an index as described in Box 2. The underlying factor is that the fluctuations in the short-term

INTEREST-RATE DIFFERENTIALS AND MORTGAGE-CREDIT LOANS  
DENOMINATED IN FOREIGN CURRENCY

Chart 11



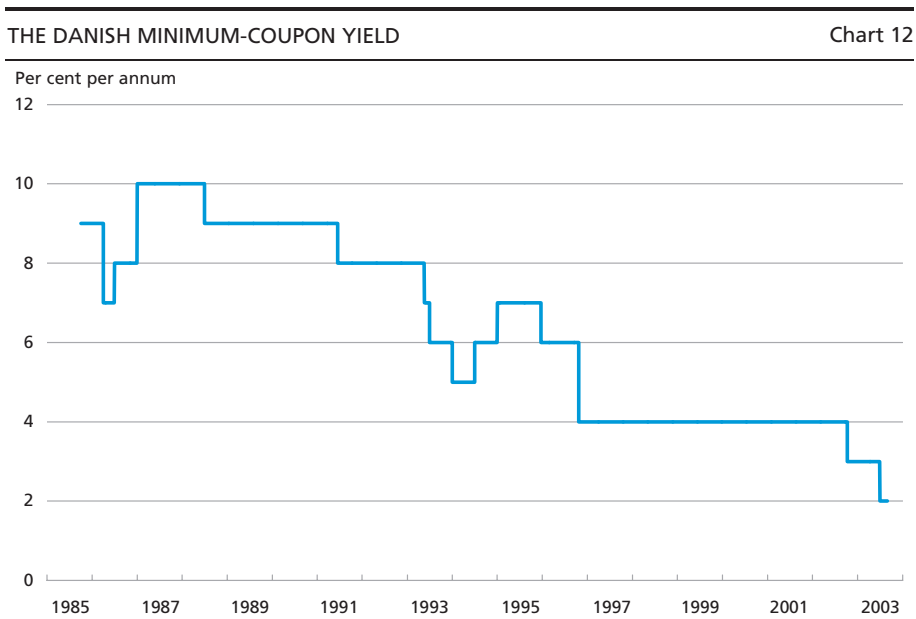
Source: Danmarks Nationalbank.

and long-term interest rates have generally been offset by the development in the effective krone rate.

Euro-denominated mortgage-credit loans increased rapidly in volume terms to the overall level in 2002 of around kr. 80 billion, which has since prevailed. As the interest-rate differential to the euro area has narrowed, interest in raising euro-denominated mortgage-credit loans has diminished, cf. Chart 11.

The banks' lending to households has been stagnating, but mortgage-credit institutes' lending to households has increased by more than 10 per cent over the past year. Early redemptions of mortgage-credit loans on the October settlement date amount to kr. 71.6 billion. In krone terms the early redemptions in 2003 exceed the value of early redemptions during the conversion wave in 1994. However, for most borrowers the reduction of mortgage instalments has been modest.

The minimum-coupon yield was lowered to 2 per cent on 1 July. The minimum-coupon yield was introduced in 1985 as the lowest nominal yield on issues that are exempt from capital gains tax. The level of 2 per cent is a historical low, cf. Chart 12. Issues immediately after the reduction of the minimum-coupon yield comprised 2-per-cent corporate bonds and 2-per-cent mortgage-credit bonds applied to adjustable-rate loans. Under the current interest-rate conditions the minimum-coupon yield will be raised to 3 per cent.



The public sector's payment system for settlement of payments between central government and local governments, called OBS, was commissioned at the end of June 2003. OBS has affected the volume of in- and outgoing central-government payments on certain days, and thereby the liquidity of the Danish money market. So far, Danmarks Nationalbank has normally opened for sale of certificates of deposit on the first banking day of the month because large-value, central-government disbursements increased liquidity in the money market. However, as a consequence of the changed payment pattern the liquidity effect of central-government payments on 1 July 2003 was moderate. Danmarks Nationalbank therefore did not open for sale of certificates of deposit. The substantial redistribution of liquidity between banks and mortgage-credit institutes arising e.g. from large settlement date payments from the mortgage-credit institutes proceeded smoothly.

On 16 June, the British Bankers' Association began to compile interest rates for uncollateralised loans denominated in Danish kroner in the London interbank market. The DKK-Libor interest rates are calculated on the basis of interest rates reported by 8 banks, and are compiled in the same way as Cibar. DKK-Libor interest rates are determined for 15 maturities from overnight to 12 months. DKK-Libor will probably serve as a reference interest rate for transactions in Danish kroner in the London interbank market, e.g. in connection with interest-rate swaps. Libor interest rates are also compiled for 8 other currencies.

## THE DANISH ECONOMY

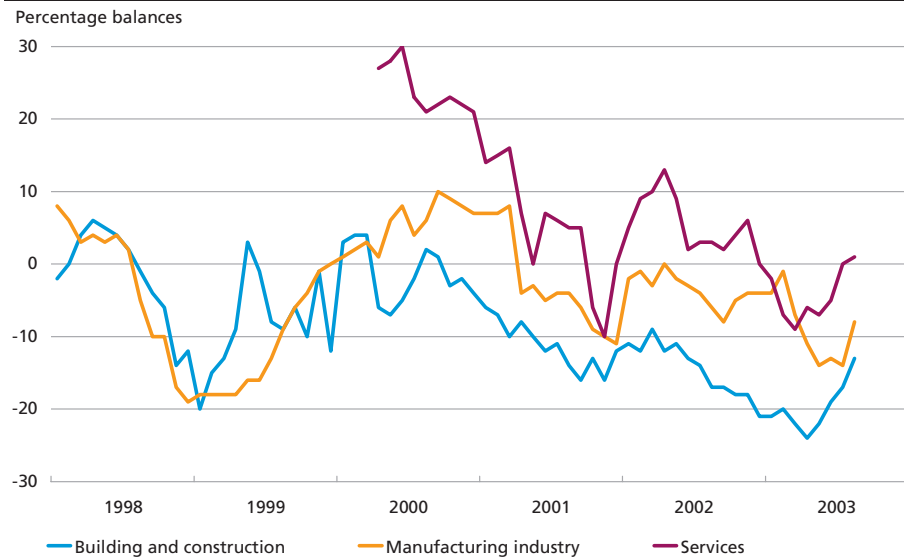
In the 1st half of 2003 the Danish economy stagnated, perhaps as a consequence of the uncertainty related to the Iraq war. Economic growth in Denmark was 0.4 per cent in the 1st quarter measured in terms of GDP in constant prices, but this was offset by an equivalent decline in economic activity in the 2nd quarter. As a result, GDP in the 1st half-year was only 0.3 per cent higher than one year before. The growth in the 2nd quarter was particularly low due to a decline in capital formation and stockbuilding.

Compared to 2002, the first half of 2003 saw weak growth in total private consumption. Private consumption was affected by a considerable decline in car sales, which may be attributable to time lags as a result of price harmonisation within the EU. Private consumption has otherwise developed positively, and is still supported by the housing market, the low level of interest rates, and the development in real disposable incomes.

Residential construction has been increasing, and business construction rose slightly in the 2nd quarter after falling considerably in the 1st quarter. Other business investments fell strongly in the 2nd quarter due to declining investments in both machinery and means of transportation, but there are signs of a recovery in the 3rd quarter.

BUSINESS CONFIDENCE IN DENMARK

Chart 13



Note: The confidence indicators are seasonally adjusted.

Source: Danmarks Statistik.

In the service sectors, as well as in building and construction, business confidence has risen from a low level over the last 3 months, cf. Chart 13. The confidence indicator for the manufacturing sector rose in August after remaining unchanged at a low level. Consumer confidence also rose in August.

The economic outlook in Denmark is better than it has been for a long time in view of the improved prospects for the global economy and relatively expansionary monetary conditions. Together with the planned easing of fiscal policy in 2004 this may soon lead to a narrowing of the future economic-policy scope.

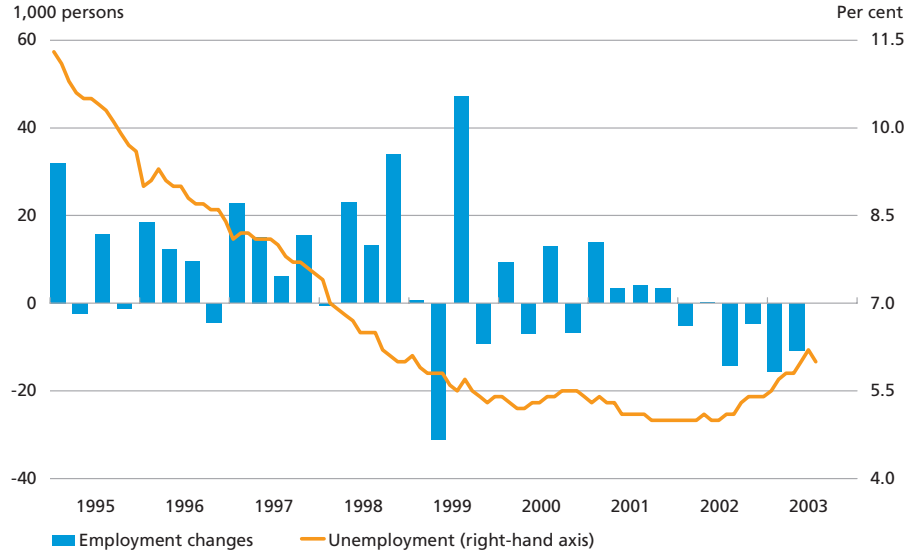
The government's 2004 budget entails an easing of fiscal policy by 0.4 per cent of GDP measured in terms of the fiscal effect. The easing primarily reflects the agreement on lower income tax concluded in the spring between the government and the Danish People's Party. A precondition for the agreement was a reduction of real growth in public consumption to 0.7 per cent in 2004 and 0.5 per cent in subsequent years. Under the agreement, the tax cuts will be financed in the medium-term perspective by lower future growth in public consumption than seen in many years. This ambitious target will probably need to be tightened a little further in the light of the strong growth in public consumption in 2002. The growth rate of 2.1 per cent does not appear to be attributable to random factors, since public consumption in the 1st half of 2003 was still at the high level from end-2002. The planned medium-term consolidation is not compatible with the tax policy unless there is a significant reversal of public spending.

In the 2nd quarter the current-account surplus rose to kr. 41 billion for the last 12 months. Imports and exports both fell, but imports accounted for the strongest decline. Imports of consumer goods excluding cars have been falling since March. The strengthening of the effective krone rate during 2002 and 2003 has weakened competitiveness vis-à-vis e.g. the USA and several Asian countries. Nevertheless, over the past year Denmark has gained market shares in most export markets, including the USA.

Unemployment rose during this period, but fell in July, cf. Chart 14. One factor contributing to the decline in July is that unemployed people who were in employment one year before are entitled to holiday pay rather than unemployment benefit when they take holiday leave, so that they are not included in the unemployment statistics for that period. In July, the unemployment rate was 6.0 per cent, and thus 1.0 per cent above the low at the beginning of 2002. The increase in unemployment has varied across levels of education, sectors and regions. Certain groups, including IT employees and engineers, have experienced a

EMPLOYMENT CHANGES AND UNEMPLOYMENT IN DENMARK

Chart 14



Note: Employment of wage earners, excluding leave schemes, quarter-on-quarter change, and unemployment as a percentage of the labour force.

Source: Danmarks Statistik.

considerable increase. Viewed in a more long-term perspective, overall unemployment is still low, and in the longer term the demographic development *ceteris paribus* will reduce the supply of labour. The participation rate must therefore still be raised in the longer term.

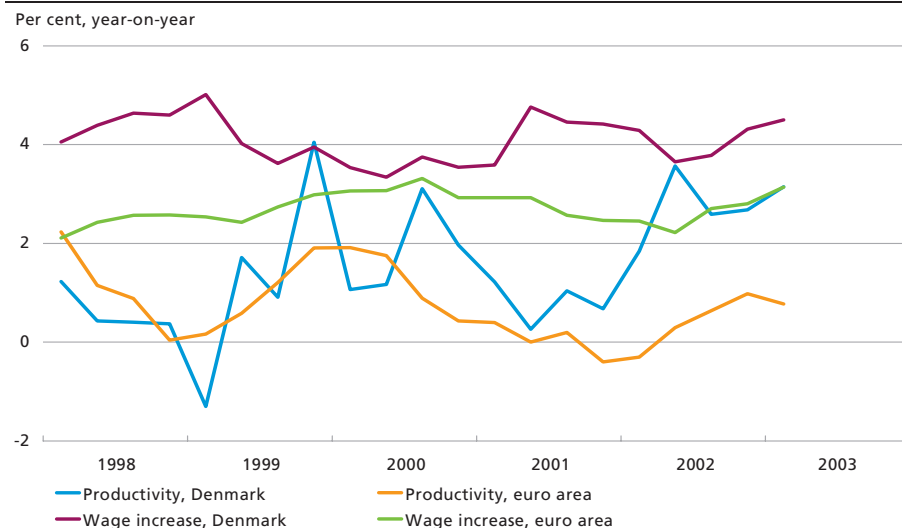
In the 1st half of 2003 employment fell more than unemployment rose. The slowdown in the labour market was thus accompanied by a reduction of the labour force, defined as the sum of the employed and the unemployed. Employment in the private sector decreased, while employment in the public sector was almost unchanged.

According to the wage statistics of the Danish Employers' Confederation the annual increase in wages within the Employers' Confederation's area fell from 4.1 per cent to 3.9 per cent in the 2nd quarter. However, disregarding the considerable slowdown in the building and construction sector the rate of wage increase was almost unchanged, even though unemployment was rising. Denmark's rate of wage increase continues to exceed that of its trading partners by 1-1½ per cent, although this has been generally offset by stronger productivity growth, cf. Chart 15. High wage increases will continue to make high demands of productivity.

Inflation calculated as the annual rate of increase in HICP fell from 2.5 per cent in April to 1.8 per cent in July, which is slightly below inflation in the euro area, cf. Chart 16. The contribution to inflation from energy and imports decreased as a consequence of falling oil prices and a

**INCREASE IN WAGES AND PRODUCTIVITY IN DENMARK AND THE EURO AREA**

Chart 15

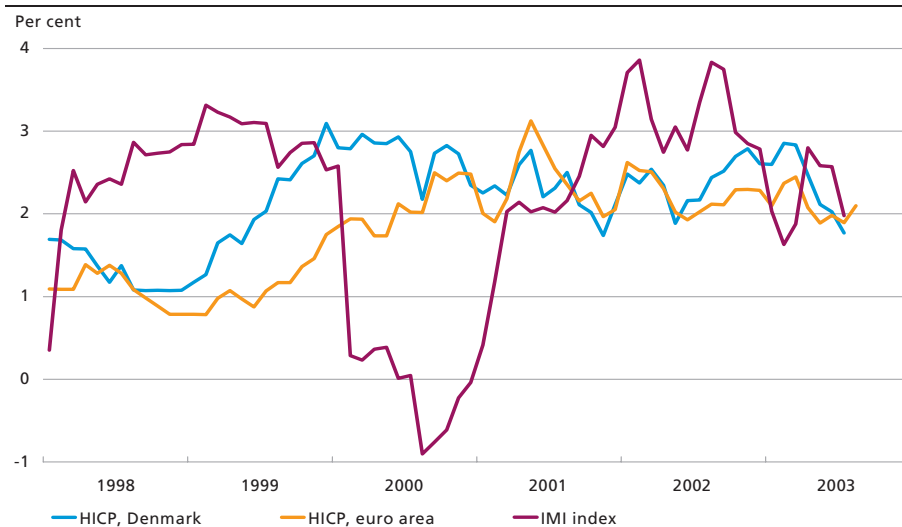


Note: Productivity calculated as GDP divided by employment.  
Source: Statistics Denmark and EcoWin.

stronger effective krone rate, while domestic market-determined inflation also declined. Domestic market-determined inflation fell from 2.6 per cent in June to 2.0 per cent in July as a result of such factors as goods on sale, including clothes, and may be affected by the timing and extent of the summer sale in 2003 compared to 2002.

**INFLATION IN DENMARK AND THE EURO AREA, AND DOMESTIC MARKET-DETERMINED INFLATION IN DENMARK**

Chart 16



Source: Statistics Denmark and Eurostat.

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## Memorandum of Understanding on Financial Crisis Management

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At their meeting in Stykkishólmur, Iceland, on 11 June 2003, the central banks of Denmark, Finland, Iceland, Norway and Sweden signed a Memorandum of Understanding (MoU) on financial crisis management.<sup>1</sup> The MoU is applicable to a crisis in any bank, which is domiciled in a Nordic country and has at least one cross-border establishment in the area. The MoU is not applicable if the bank in question is represented in other Nordic countries via branches.

The focus of the Nordic MoU is on practical arrangements. It states that any central bank may call for a meeting of a crisis management group comprising high-level central-bank officials. Furthermore, it indicates which central bank should take the leading role and outlines the contacts that need to be made with banks, supervisors, ministries of finance, bank managers and other parties. The MoU also specifies which information should be obtained from the bank concerned and analysed. Finally, the MoU calls for coordination of the information, which the central banks provide to outside parties.

The MoU is available at Danmarks Nationalbank's website.

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<sup>1</sup> See the press release on p. 105.

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# New Capital-Adequacy Rules for Credit Institutions

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*Lisbeth Borup and Morten Lykke, Financial Markets*

## INTRODUCTION

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The Basel Committee<sup>1</sup> is close to agreeing on the final content of the revised capital requirements to be imposed on credit institutions, etc. set by the authorities. In this connection the Basel Committee published its Third Consultative Paper<sup>2</sup> in April 2003. Likewise, the European Commission has published a third version of the draft directive on a new capital-requirements framework within the EU<sup>3</sup>. The final recommendations for new capital requirements are expected to be published at the end of 2003 and to come into force at the beginning of 2007. That will provide about 3 years to prepare and implement the requirements.

The documents from the Basel Committee and the European Commission are in broad terms identical, but there are deviations owing to their different target groups and legal effect<sup>4</sup>. The Basel Committee focuses on standards for large, internationally active banks, while the European Commission's capital-adequacy rules are implemented as a directive applying to all banking institutions, other credit institutions and investment firms within the EU.

Under the existing capital-adequacy rules, the Basel I Accord, which dates back to 1988 and has currently been introduced in more than 100 countries, banks are subject to standardised capital requirements. The Accord has contributed to more equal competition terms for banks with cross-border activities. However, developments have made the Accord obsolete in a number of areas owing to the emergence of new financial products and more sophisticated risk management by the credit institutions. In addition, it has been noted that the present set of rules may

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<sup>1</sup> The Basel Committee, whose secretariat is at the Bank for International Settlements, BIS, was set up in 1974 with the purpose of strengthening the stability of the international financial system. The following countries are represented on the Committee: Belgium, Canada, France, Germany, Italy, Japan, Luxembourg, Netherlands, Spain, Sweden, Switzerland, UK and USA.

<sup>2</sup> For a review of the Basel Committee's Second Consultative Paper, see Suzanne Hylldahl, *New Capital-Adequacy Rules for Banks*, Danmarks Nationalbank, *Monetary Review*, 1st Quarter 2001.

<sup>3</sup> The documents can be downloaded from [www.bis.org](http://www.bis.org) and [europa.eu.int/comm/internal\\_market/regcapital/index\\_en.htm](http://europa.eu.int/comm/internal_market/regcapital/index_en.htm).

<sup>4</sup> This article is based on the Basel Committee's Third Consultative Paper.

give an inappropriate incentive e.g. to take on relatively risky credit exposures. This is due to the broad brush in the existing rules where the capital requirements do not necessarily mirror actual risk.

The objective of the new recommendations, the Basel II Accord, is for the capital requirements to reflect more clearly the risks incurred by the individual credit institution. The uniform set of rules under Basel I is thus replaced by more institution-specific rules. At the same time, the credit institutions are encouraged always to strive for the best possible risk management. The Basel II Accord aims at the same global capital level as under the existing rules, but the rules will give a larger dispersion in the credit institutions' capital requirements as a result of diverse risk profiles.

Overall the new capital-adequacy rules consist of three pillars:

- Pillar 1: Minimum capital requirements to cover credit and market risk and, as a new element, operational risk.
- Pillar 2: Strengthening of the supervisory review process, including an assessment of the overall capital adequacy required of the individual credit institution in relation to Pillar 1 requirements.
- Pillar 3: Stronger market discipline through disclosure requirements for the credit institutions.

The three pillars complement each other and should be seen as a package that must be implemented in full. In comparison with the existing capital-adequacy rules, the new rules introduce a kind of new regime in a number of areas, entailing additional institution-specific assessments. The capital adequacy will to some extent be based on the credit institutions' own models, and the capital requirements will vary among credit institutions. Under the existing capital-adequacy rules the uniform regulatory quantitative limitations help to ensure equal terms and conditions for all credit institutions – a "level playing field". The new capital-adequacy rules aim rather to provide equal terms and conditions in that the supervisory authorities should work towards uniform application of the framework provided by Basel II and the new capital-adequacy directive.

## **PILLAR 1: MINIMUM CAPITAL REQUIREMENTS**

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As a consequence of their business activities, credit institutions are faced with various risks. Some of these risks are measurable, while others are of a more qualitative nature. The minimum capital requirements under Pillar 1 are to cover three of the measurable risks, viz. credit risk, market risk and, as a new element, operational risk. Calculation of market risk will remain unchanged in Basel II in relation to the existing rules.

As regards determination of credit risk, three options will be provided with varying degrees of complexity. There will be two internal ratings-based approaches where the credit institutions' own expertise on credit risk is utilised, as well as a standardised approach with credit weights determined by the Basel Committee and based on risk assessments made by external rating agencies. The standardised approach is, in broad lines, an update of the existing rules. The option to calculate the minimum capital requirements to cover credit risk using an internal ratings-based approach is new and will help to ensure that the capital requirements to a larger extent reflect the credit institution's actual level of credit risk.

Development and maintenance of internal models entails high costs. Consequently the Basel Committee expects only the largest credit institutions to opt for the internal ratings-based approaches, while the smaller credit institutions are expected to apply the simpler standardised approach.

### The internal ratings-based approaches to assessing credit risk

The credit institutions have a choice of two internal ratings-based approaches, a foundation one and an advanced one. Under both approaches the credit institutions themselves must assess the probability that a borrower will default during the next year (probability of default, PD). Under the advanced internal ratings-based approach the credit institution must also assess the expected loss given default (LGD) and the expected exposure at default (EAD). Under the foundation approach, however, the Basel Committee determines LGD and EAD, cf. Table 1.

The credit institutions' estimates are put into formulas defined by the Basel Committee for calculating credit-risk weights for each asset, and

RESPONSIBILITY FOR INPUT TO CALCULATE CREDIT-RISK WEIGHTS UNDER THE INTERNAL RATINGS-BASED APPROACHES

Table 1

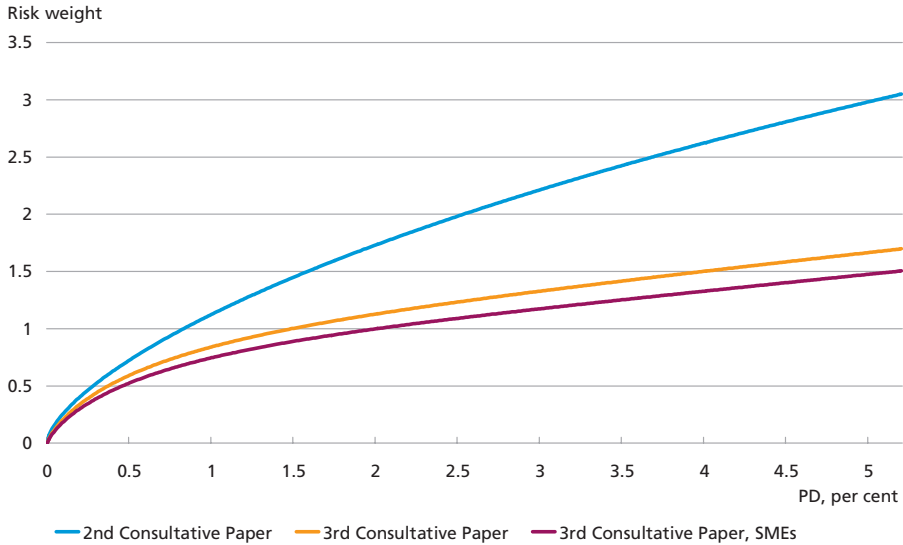
	Corporates, sovereigns and banks		Households
	Foundation	Advanced	
Probability of default, PD .....	Credit inst.	Credit inst.	Credit inst.
Loss given default, LGD .....	Basel Committee	Credit inst.	Credit inst.
Exposure at default, EAD .....	Basel Committee	Credit inst.	Credit inst.
Maturity .....	Basel Committee/ Credit inst.	Credit inst.	-

Note: For lending to households only one internal ratings-based approach is provided. The household category may comprise small loans to the corporate sector if the exposure vis-à-vis an enterprise does not exceed 1 million euro.

Source: Basel Committee.

## RISK WEIGHTS FOR CORPORATE LENDING

Chart 1



Note: PD indicates the probability that a borrower will default within the next year. Small and medium-sized enterprises (SMEs) are defined as enterprises with total annual sales not exceeding 50 million euro. The SME curve is calculated for an enterprise with annual sales of 25 million euro. An LDG value of 45 per cent has been applied.

Source: Basel Committee.

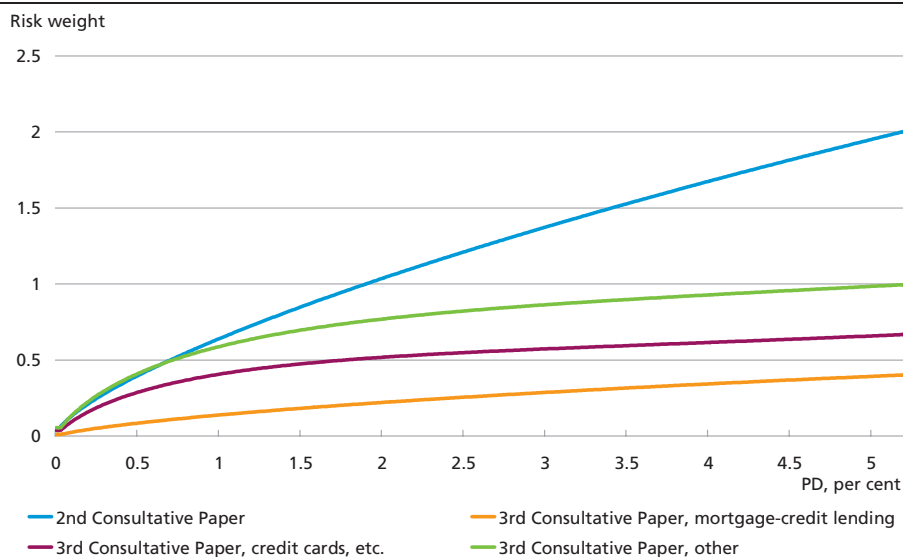
thus the credit institution's credit-risk-weighted assets can be calculated. The actual minimum capital requirements to cover credit risk are calculated in the same way as under Basel I, i.e. the regulatory capital must make up 8 per cent of the credit-risk-weighted assets. The primary new element of Basel II is that lending within the same counterparty category, which is weighted equally under Basel I, will have different credit-risk weights as a result of differences in credit ratings.

The internal ratings-based methods will make the capital requirements more sensitive to changes in the business cycle relative to the existing rules, which could amplify future business cycles. In a recession the probability that companies cannot meet their obligations increases (PD increases), which will lead to a higher capital requirement. An increase in the capital requirement may curtail the credit institutions' lending, which in turn may contribute further to the economic slowdown. With its Third Consultative Paper the Basel Committee has sought to reduce the procyclicality problems within Basel II e.g. by applying flatter risk-weight curves. A given change in PD may thus lead to a smaller increase in the minimum capital requirements under the Third Consultative Paper than under the Second Consultative Paper, cf. Chart 1.

Against the background of considerable criticism the Basel Committee has also introduced a subdivision of certain counterparty categories.

RISK WEIGHTS FOR RETAIL LENDING

Chart 2



Note: PD indicates the probability that a borrower will default within the next year. The curves are based on the following LGD assumptions: 10 per cent for mortgage-credit lending; 60 per cent for credit cards, etc.; and 50 per cent for other. The curve for the 2nd Consultative Paper reflects total retail lending (excluding mortgage-credit lending).

Source: Basel Committee.

Lending to small and medium-sized enterprises (SMEs) with total annual sales not exceeding 50 million euro now has its own risk-weight curve with lower risk weights than for other corporate lending.

The Basel Committee has also broken down the portfolio of lending to households, etc. into several subcategories, comprising residential mortgage-credit lending, credit-card lending and other lending, cf. Chart 2.

### The standardised approach to assessing credit risk

The standardised approach is the simplest approach to calculate the credit-risk-weighted assets and is basically in line with the existing rules. However, more risk weights will be introduced with Basel II. Under the standardised approach, the counterparties' credit risk is based on external ratings from rating agencies and on predefined weights.

External rating can be used for e.g. corporate lending where the credit-risk weight depends on the rating of the enterprise, i.e. lending to an enterprise with a high rating entails a lower capital requirement than equivalent lending to an enterprise with a lower rating, cf. Table 2. Under the existing rules, a corporate loan has a risk weight of 1, irrespective of the rating of the enterprise. Denmark, like a number of other EU member states, has no tradition of external ratings for business enterprises, and under Basel II non-rated enterprises will be assigned a risk weight of 1 as

CREDIT-RISK WEIGHTS FOR CORPORATE AND RETAIL LENDING UNDER THE STANDARDISED APPROACH

Table 2

Risk weights	Individual rating					Portfolio rating	Risk weight today
	AAA to AA-	A+ to A-	BBB+ to BB-	Lower than BB-	No rating		
Corporate lending ...	0.2	0.5	1.0	1.5	1.0	-	1.0
Retail lending .....	-	-	-	-	-	0.75	1.0
<i>Mortgage-credit loans</i>							
Corporate .....	-	-	-	-	-	0.5 / 1.0	0.5 / 1.0
Households. etc. ....	-	-	-	-	-	0.35	0.5

Note: The risk-weight for corporate mortgage-credit lending is initially set at 1, but may be reduced to 0.5 under certain circumstances. This is the case in Denmark. The individual ratings follow Standard & Pooors' classification. Retail lending which does not meet the criteria for inclusion in the portfolio rating will be weighted as other assets, i.e. with a weight of 1.

Source: Basel Committee.

is the case today. In the longer term more enterprises can be expected to get an external rating.

Retail lending constitutes a significant proportion of Danish banking institutions' lending portfolio. Under the standardised approach lending to households is broken down into two portfolios, mortgage-credit lending and other retail lending. The risk weights of the two portfolios are also shown in Table 2. Small corporate loans not exceeding 1 million euro may be included under other retail lending.

As Table 2 illustrates, primarily lending to households will have lower risk weights than under the present rules, reflecting the fact that historical losses on retail lending have been lower than on corporate lending.

### Credit risk mitigation

Under all three approaches it is possible to reduce the minimum capital requirements for credit risk via credit protection. This can be in the form of collateral, guarantees or credit derivatives. A credit institution which has mitigated its credit risk may obtain a reduction in its capital requirement. Particularly under the internal ratings-based approaches more types of real and financial collateral will be accepted than is the case today. The improved opportunities to ease capital requirements via credit protection provides an incentive for the credit institutions to improve their risk management.

### Operational risk

Operational risk is an aggregate term for a broad range of risks which may incur losses to the credit institutions. This could be losses resulting from problems with IT systems, human errors, fraud, etc.

Under the Basel II Accord operational risk must be covered explicitly by the capital requirements. In the Second Consultative Paper the Basel Committee had specified that the capital to cover operational risk should constitute approximately 20 per cent of the total capital requirements. This level was subsequently lowered to approximately 12 per cent.

Operational risk is difficult to assess, *inter alia* because there are few historical operational incidents. The recommendations of the Basel Committee suggest three approaches to calculating the capital requirement to cover operational risk, viz. the basic indicator approach, the standardised approach and the advanced measurement approach (internal approach). Under the basic indicator and standardised approaches, operational risk is assumed to increase proportionally to gross income, which includes e.g. interest income. A drawback of using gross income as an indicator of operational risk is that a credit institution lending in high-risk markets, which are characterised by high interest margins, will be hit twice by the capital requirement – via a high credit risk, and via a high operational risk as a result of substantial interest income. To take account of this problem the Basel Committee's Third Consultative Paper introduces an alternative standardised approach, under which some business areas may apply loans and advances instead of gross income to calculate operational risk. The Basel Committee does not plan for the alternative standardised approach to be broadly available, but sees it as an option for those credit institutions affected by double counting of risk in terms of the capital requirement.

In line with the internal ratings-based approach to calculating credit risk, credit institutions will be able to apply internal models for assessing operational risk. However, operational-risk models are currently at a relatively early development stage in comparison with credit-risk models. Consequently, the Basel Committee imposes a few more qualifying criteria on credit institutions wishing to apply an internal model for assessing operational risk.

Credit institutions which are insured against operational incidents may be subject to reduced capital requirements under the internal measurement approach. Credit institutions applying the simpler basic indicator or standardised approaches, will not be able to obtain an equivalent reduction in the capital requirement via insurance.

## **PILLAR 2: THE SUPERVISORY REVIEW PROCESS**

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The management of the individual credit institution is responsible for ensuring that the credit institution has adequate capital in relation to its

risks. Under Pillar 2 the supervisory authorities must supervise that the credit institutions' capital base is sufficient to support their risks and to encourage the credit institutions to optimise internal risk management and control. Pillar 2 gives the supervisory authorities greater powers to evaluate the need for capital adequacy. Unlike the Basel I Accord, under which the supervisory authorities must ensure compliance with the 8-per-cent minimum requirement, Basel II also calls for the supervisory authorities to ensure that the credit institutions' total capital adequacy is sufficient to cover all their risks. In other words, the supervisory authorities must explicitly evaluate the size of the credit institutions' buffer capital in excess of the minimum capital requirements under Pillar 1. This makes great demands on the supervisory authorities' knowledge of and experience with complex risk models.

Under Pillar 2 all risks, including risks that are not explicitly specified under Pillar 1, must be included in the credit institutions' capital needs. In addition, also under Pillar 2, the supervisory authorities must assess whether the credit institutions comply with the supervisory minimum standards and disclosure requirements applying to the internal ratings-based approaches to credit risk and operational risk. The supervisory authorities may impose additional capital requirements in excess of the minimum capital requirements, as well as more qualitative requirements, e.g. in relation to a credit institution's procedures.

The Basel Committee has previously presented principles for effective banking supervision<sup>1</sup>. On this basis the Committee has identified four key principles of supervisory review under Pillar 2:

- Banks should have a process for assessing their overall capital adequacy in relation to their risk profile and a strategy for maintaining their capital levels.
- Supervisors should review and evaluate banks' internal capital-adequacy assessments and strategies, as well as their ability to monitor and ensure their compliance with regulatory capital ratios. Supervisors should take appropriate supervisory action if they are not satisfied with the result of this process.
- Supervisors should expect banks to operate above the minimum regulatory capital ratios and should have the ability to require banks to hold capital in excess of the minimum<sup>2</sup>.

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<sup>1</sup> *Core Principles for Effective Banking Supervision*, September 1997, and *Core Principles Methodology*, October 1999, see [www.bis.org](http://www.bis.org).

<sup>2</sup> The Basel Committee does not state whether an additional capital requirement must be published. Under the European Commission's third consultation paper, credit institutions may not publish an additional capital requirement.

- Supervisors should seek to intervene at an early stage to prevent capital from falling below the minimum levels required to support the risk characteristics of a particular bank and should require rapid remedial action if capital is not maintained or restored.

The Basel Committee's Third Consultative Paper includes only few directions as to what may trigger an additional capital requirement, and it is emphasised that it is the task of the supervisory authorities to assess the need for a capital requirement in excess of the minimum or other, more qualitative requirements.

Among the risks which are identified by the Basel Committee as being important, and which are not covered by Pillar 1, are interest-rate risks in the banking book, e.g. fixed-rate lending and certain securities. If the supervisory authorities determine that a credit institution is not holding capital commensurate with the level of interest-rate risks, they may require that the interest-rate risk be reduced or the capital increased (or some combination of the two). The Basel Committee has published principles as to when the interest-rate risk can be deemed to be high<sup>1</sup>.

The Basel Committee also recommends that the supervisory authorities make assessment to ensure the proper functioning of certain aspects of the minimum requirements under Pillar 1. The supervisory authorities must thus take into account that e.g. risk weights for calculating the minimum requirements are determined on an average basis, which does not always take account of the more institution-specific risks. Among other things, the Basel Committee therefore recommends the application of stress tests to show whether a credit institution is operating too close to the minimum capital requirements. Stress tests will be compulsory for credit institutions applying the internal ratings-based approaches to calculate credit risk. On the basis of the tests the supervisory authorities may require the credit institution to reduce its risks or to hold an additional amount of capital (or some combination of the two). The Basel Committee has emphasised that the use of stress tests should in itself motivate the credit institutions to have adequate capital in relation to the minimum requirement.

To promote transparency and credibility in the supervisory review process, the Basel Committee recommends that the supervisory authorities disclose the criteria applied to review the credit institutions' own assessment of their capital adequacy. In addition, it is recommended that the

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<sup>1</sup> The interest-rate risk is deemed to be high if an interest-rate shock of more than 200 basis points entails a fall in liable capital by more than 20 per cent. See also the Basel Committee's *Principles for the Management and Supervision of Interest Rate Risk*, January 2001, at the BIS home page, [www.bis.org](http://www.bis.org).

supervisory authorities publish target and trigger values for the stress tests used to review the credit institutions' capital-adequacy – equivalent to the use of amber and red lights for Danish pension companies<sup>1</sup>. Finally, the supervisory authorities should be able to give a credit institution an explanation for any additional capital requirement imposed.

The guidelines under Pillar 2 are very broad, thereby giving the individual supervisors extensive scope to maintain their practice for imposing individual additional capital requirements. The Basel Committee has chosen this approach under Pillar 2 since supervisory practice is not an exact science, but involves a certain element of assessment, as there are national differences e.g. in terms of tax and accounting rules, and because the guidelines should be applicable to credit institutions with different business profiles. It is thus not unambiguous what could entail an individual capital requirement in excess of the 8-per-cent minimum requirement.

The supervisory review process under Pillar 2 is new in large parts of Europe which have had a tradition for more rule-based supervision. In the Anglo-Saxon countries, on the other hand, it is customary to impose individual capital requirements in this way, and in these countries it is common for credit institutions to have individually determined capital requirements exceeding 8 per cent.

The Basel Committee and the EU have set up working groups to seek to ensure that the supervisory authorities share experience regarding the implementation of Pillar 2 with a view to applying the rules as uniformly as possible.

### **PILLAR 3: MARKET DISCIPLINE**

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Supplementing the first two pillars, Pillar 3 lays down a number of requirements for credit institutions as regards disclosure of more detailed information on risks, capital structure and capital-adequacy, risk management, etc. Basel II thus supports the ongoing process to ensure greater transparency. Pillar 3 will strengthen the market-disciplinary role of investors and rating agencies, since they will be better able to assess the credit institutions' risk profile and capital need.

The guidelines are very broadly expressed to accommodate the supervisory authorities' different powers and traditions for requiring credit institutions to assess and disclose material information. It is also an important objective for the Basel Committee that Pillar 3's guidelines for disclosure of information are in compliance with the international ac-

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<sup>1</sup> For a review of the amber and red lights for Danish pension companies, see Box 9 in Danmarks Nationalbank, *Financial Stability 2003*.

counting standards, IAS. It is up to the supervisory authorities to determine which information is only to be reported to the supervisory authorities and which information is also to be disclosed e.g. in connection with the credit institutions' annual and interim accounts. In order to highlight the relationship between the credit institutions' risk profile and capital base, credit institutions applying internal ratings-based approaches to credit risk and operational risk must disclose more extensive and detailed information.

The Basel Committee recommends that credit institutions report information at least biannually, and quarterly in respect of the large international credit institutions. More qualitative information, e.g. on the credit institutions' risk management objectives and policies, etc., need only be disclosed once a year. Information is to be disclosed on a group basis, although it is recommended that the individual credit institutions, etc. within a group also report individual information on their capital.

## CONSEQUENCES OF THE NEW CAPITAL REQUIREMENTS

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In the autumn of 2002 the Basel Committee began its Third Quantitative Impact Study (QIS 3), in which credit institutions from more than 43 countries calculated and reported their capital requirements under Pillar 1, had the Basel II Accord been in force. The European Commission assisted the Basel Committee in this respect and has also published results for European credit institutions<sup>1</sup>. The Third Quantitative Impact Study confirmed that the balance for the new capital requirements is almost in place, i.e. the total minimum capital requirement is almost unchanged in relation to the existing rules, and that the incentive to improve risk management is strengthened.

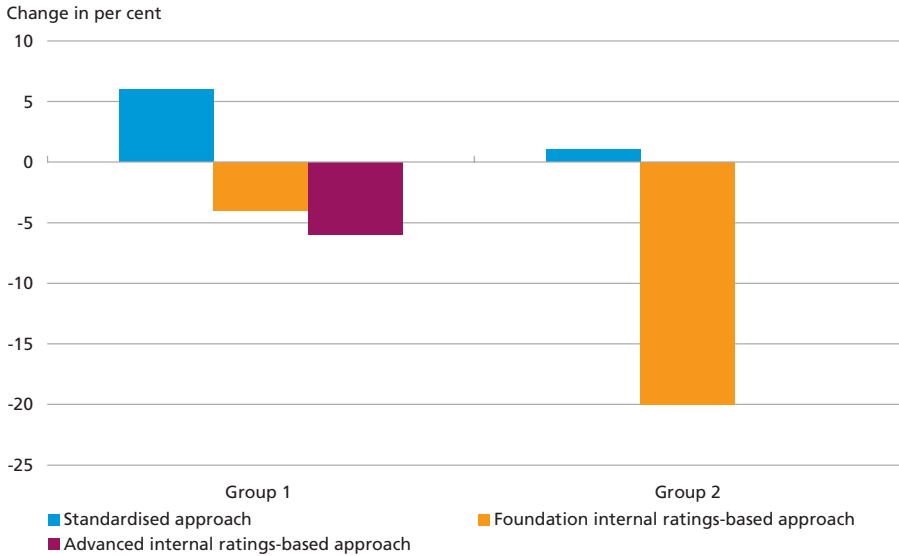
Chart 3 shows the results of the Basel Committee's QIS 3 for credit institutions in the EU. The credit institutions are split into groups 1 and 2, depending on whether or not their core capital exceeds 3 billion euro. For the group 1 EU credit institutions reporting their credit risks according to the internal ratings-based approaches the results show a minor reduction of the minimum capital requirement, 4-6 per cent on average, vis-à-vis the existing capital requirements, while the requirement for the group 1 credit institutions applying the standardised approach increases by 6 per cent. The results for the group 2 credit institutions show a larger reduction, 20 per cent, for the credit institutions reporting under the basic internal ratings-based approach, while the credit institutions re-

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<sup>1</sup> The results of the Basel Committee's and European Commission's QIS 3 can be found at [www.bis.org](http://www.bis.org) and [europa.eu.int/comm/internal\\_market/regcapital/index\\_en.htm](http://europa.eu.int/comm/internal_market/regcapital/index_en.htm).

THE BASEL COMMITTEE'S THIRD QUANTITATIVE IMPACT STUDY:  
 AVERAGE CHANGE IN MINIMUM CAPITAL REQUIREMENT UNDER PILLAR 1  
 FOR CREDIT INSTITUTIONS IN THE EU IN COMPARISON WITH THE PRESENT  
 REQUIREMENTS

Chart 3



Note: Data for group-2 credit institutions under the advanced internal ratings-based approach are not available. The columns indicate the change in Pillar-1 capital requirements in relation to the present capital requirement to cover credit risks and operational risks when applying different calculation methods. Groups 1 and 2 indicate whether the reporting credit institutions have core capital exceeding or not exceeding 3 billion euro. For group 1, the capital requirement is weighted in relation to the credit institutions' liable capital, while group 2 is a simple average. A comparison of the results of the 3 approaches should be interpreted with caution, since the same credit institutions have not reported under all approaches.

Source: Basel Committee.

porting under the standardised approach are faced with a marginal increase in the minimum capital requirement by 1 per cent on average.

The result of QIS 3 shows a large dispersion between the credit institutions facing respectively higher and lower minimum capital requirements under the new rules.

For the credit institutions where QIS 3 results in a lower minimum capital requirement than under Basel I, the main explanation is lower risk weight for retail lending and in particular lending secured by mortgages on residential property, as well as lending to small and medium-sized enterprises. Since the group 2 credit institutions have a higher proportion of retail lending than group 1, they achieve higher average capital relief. In the assessment of the Basel Committee particularly the credit institutions in group 1 have not fully exploited the possibilities of capital relief by risk mitigation, and consequently the capital relief for group 1 credit institutions has presumably been underestimated. The most significant factor contributing to an increase in the capital requirement is operational risk.

Danish banks and mortgage-credit institutes have also participated in the study. They have a relatively large proportion of lending to retail customers and small and medium-sized enterprises, and of mortgage-credit lending compared to the large European banks. This could indicate that Danish banks and mortgage-credit institutes may achieve a significant reduction in the minimum capital requirements<sup>1</sup> in relation to Pillar 1. The management of the individual credit institution will remain responsible for ensuring that the credit institution has adequate capital, irrespective of the minimum capital requirements. In addition, the minimum capital requirements must be supplemented with a supervisory review process conducted by the Danish Financial Supervisory Authority to assess whether the bank or mortgage-credit institute has adequate capital.

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<sup>1</sup> For credit institutions opting to apply the internal ratings-based approaches to assessment of credit risks or operational risks, the Basel Committee has determined a lower limit for the new capital requirement the first two years after Basel II takes effect. In the first year the new capital requirement is minimum 90 per cent vis-à-vis the existing rules, and in the second year the minimum requirement is 80 per cent.



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# Securities Market Infrastructures

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*Henrik Arnt, Payment Systems and Anne Reinhold Pedersen, Financial Markets*

## INTRODUCTION

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After the introduction of the euro a large part of Europe has one single currency, as is the case in the USA. However, the euro area's securities markets are less integrated than those of the USA. The costs of trading securities vary within the euro area due to e.g. the lack of integrated clearing and settlement systems. At the same time it is remarkable that recent years' consolidation of the securities market infrastructure in Europe has included business enterprises from outside the euro area.

The financial markets in Europe were formerly dominated by national financial structures. Trading took place on national stock exchanges between domestic customers, and securities were held at national central securities depositories (CSDs). However, in recent years there has been a growing interest in cross-border trading of securities. This can be attributed primarily to the introduction of the euro, but also to stronger focus on risk diversification, as well as the relaxation of the rules concerning placement of pension savings.

In principle, national borders are of little significance in the securities market, since similar investment products will typically be offered in several countries. At the same time, electronic trading is gaining ground, which makes physical location less important.

Cross-border securities trading is thus functioning more smoothly, while the subsequent clearing and settlement are still complicated. Completing a trade in which the buyer is not a resident of the country where the securities in question are held still entails relatively high costs. This has led to pressure from investors and authorities alike to reduce the cost of cross-border activities.

The introduction of the euro represented a giant leap towards the establishment of a single financial market in the EU for the benefit of all investors and business enterprises requiring capital. The integration of the underlying financial structures is a further precondition for a well-functioning single financial market.

- **Transaction.** The buyer and seller conclude a transaction on a trading platform such as a regulated marketplace, an electronic trading system, or a broker market.
- **Clearing.** The commitments in a transaction are assessed. Pooling of transactions and compilation of total purchases and sales allow for calculation of each participant's net position. This is called netting and entails a reduction of the number of transactions and the amounts to be exchanged. This diminishes the liquidity requirement. Clearing can also take place on a gross basis (i.e. by transaction). In Denmark and the other Nordic countries clearing and settlement are undertaken by the same unit, i.e. the central securities depositories. In many other countries this part of the infrastructure has two parties, i.e. a central counterparty that undertakes clearing, while a central securities depository undertakes settlement. Central counterparties are described in further detail in Box 2.
- **Settlement.** Settlement is the final settlement of commitments agreed between the buyer and the seller, whereby money and securities are exchanged and trades are completed. In Denmark and most other countries the money and securities sides are settled simultaneously under "delivery versus payment", or DvP. DvP reduces the credit risk vis-à-vis the counterparty.
- **Custody.** The securities are registered to a safe-custody account at a national CSD or an ICSD. Some CSDs offer corporate actions, i.e. administration of voting rights and standing-order payments (interest and dividend), as well as tax assistance.

This article reviews the current securities infrastructure in the EU. The potential future development of the infrastructure is assessed. Harmonisation of the legislative framework is a precondition for the creation of a single financial market in the EU. This harmonisation work undertaken by the EU is outlined at the end of the article.

## THE SECURITIES MARKET'S INFRASTRUCTURE

A securities transaction can be regarded as a chain. The first step is the trading of the security, followed by clearing and settlement of the trade, and finally custody at a CSD<sup>1</sup>. Together these stages constitute the securities market infrastructure, cf. Box 1.

The infrastructure of the European securities markets has undergone significant changes in overall terms as vertical or horizontal consolidation. Vertical consolidation is consolidation downwards through the chain, e.g. between a marketplace, a clearing house and a CSD, while horizontal consolidation takes place across the chain, e.g. between two marketplaces. The economic background to vertical consolidation is pri-

<sup>1</sup> In Denmark, assets traded on stock exchanges (i.e. stocks and bonds) exist solely in electronic form. This development is also seen in most other European countries. Custody therefore refers to electronic registration of the securities at the CSDs.

OUTLINE OF THE EUROPEAN SECURITIES INFRASTRUCTURE

Table 1

	France, Nether- lands, Belgium and Portugal	UK	Germany and Aus- tria	Denmark	Norway	Sweden	Finland
Trading	Euronext	LSE	Deutsche Börse	KF	OSE	OM	HEX
Clearing	Clearnet	LCH	Eurex clearing	VP	VPS	VPC	APK
Settlement and registration	Euroclear	Crest	Clear- stream	VP	VPS	VPC	APK

Consolidated group    
 Cooperation

Note: LSE: London Stock Exchange; LCH: London Clearing House; KF: Copenhagen Stock Exchange; OSE: Oslo Stock Exchange; OM: Stockholmsbörsen; HEX: Helsinki Exchange.

marily economies of scope, including easier access to use Straight Through Processing (STP), whereby a transaction is automatically forwarded for clearing and settlement. Horizontal consolidation is motivated primarily by economies of scale, since the systems are associated with high overheads and low marginal costs. The advantages are thus seen mainly in the implementation and application of a common technical platform such as a single trading system.

Whether consolidation in general will be beneficial to the economy depends particularly on whether competition can be retained. In this respect particularly vertically consolidated structures may exploit their position, which can be a source of concern for the authorities. Such structures can e.g. prevent competing trading platforms from gaining access to clearing and settlement, or subsidising selected links in the chain.

Recent trends indicate that horizontal consolidation is gaining ground where vertical consolidation was previously dominant. Table 1 outlines the main elements of the current securities infrastructure in Europe. It presents a complex picture, as the Table shows. Several companies thus participate in both a horizontal and a vertical structure.

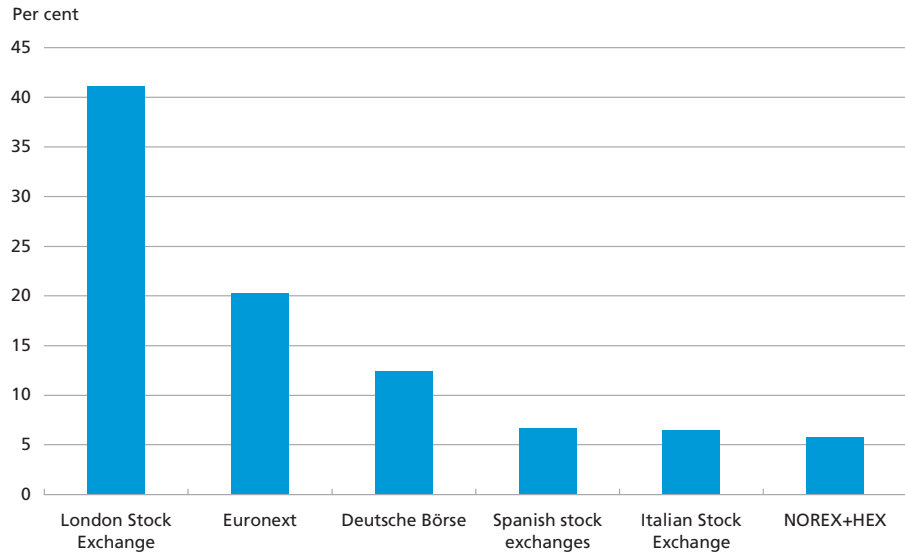
## SECURITIES TRADING

The principal stock exchanges in Europe are currently the London Stock Exchange, Euronext and Deutsche Börse, which together accounted for approximately 75 per cent of stock trading on European stock exchanges

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**SELECTED STOCK EXCHANGES' SHARE OF STOCK TRADING ON THE EUROPEAN STOCK EXCHANGES IN 2002**

Chart 1



Note: NOREX and HEX consist of the Nordic stock exchanges.  
 Source: Federation of European Stock Exchanges, FESE.

in 2002. Chart 1 shows that the Nordic stock exchanges are relatively small, and overall account for approximately 6 per cent of stock trading on European stock exchanges<sup>1</sup>.

Recent years have seen several cases of cross-border consolidation and cooperation agreements between European stock exchanges. In 1998, the Copenhagen Stock Exchange and Stockholmsbörsen concluded a memorandum of understanding on the establishment of a single Nordic securities market based on independent stock exchanges – NOREX. The alliance was later expanded to include Oslo Børs and Islands børs. Euronext was formed in 2000 as a merger of the stock exchanges in France, the Netherlands and Belgium, and in 2002 Euronext was expanded to include the Portuguese stock exchange and LIFFE, the UK derivatives exchange. In May 2003, a merger was announced between the Swedish OM group, which owns Stockholmsbörsen, and HEX in Finland, which owns the Finnish stock exchange and two Baltic stock exchanges. The new company, OM HEX, will be domiciled in Stockholm and consist of two divisions, i.e. HEX Integrated Markets, domiciled in Helsinki, and OM Technology, domiciled in Stockholm. HEX Tallinn, HEX Riga and Stockholmsbörsen will retain their current names, while the Finnish

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<sup>1</sup> Bond trading is not included in the Chart, since bonds are typically not traded on stock exchanges in Europe.

stock exchange will resume the name of Helsingin Pörssi. Another consequence of the merger is that the stock exchanges of the Nordic countries and two of the Baltic states will use SAXESS as the securities trading system.

The consolidation of marketplaces is strongly motivated by economies of scale, such as merger of IT systems and the establishment of a common trading platform. These areas are characterised by considerable overheads. A common trading platform may contribute to increasing the trading volume and the number of investors. At the same time it eliminates parallel trading in the same securities, which can enhance the transparency of price formation in the market. However, consolidation of different systems will often entail considerable initial costs. Firstly, the development of new IT systems or the interlinking of existing systems is associated with considerable costs. Secondly, the costs payable by the users (members) of the trading system may increase in areas such as software, hardware and training of employees. The first type of costs can be relatively easily estimated by the marketplaces, while the second type is considerably more difficult to estimate since they are user costs. As a result, it may be difficult to estimate the total costs, and it may take a long time for a consolidation to yield positive results.

The securities trading landscape in Europe is expected to change even more in the coming period. All indications show continued consolidation, centred on the three largest stock exchanges in Europe, i.e. the London Stock Exchange, Deutsche Börse and Euronext. A merger between two of the three largest stock exchanges is also a possibility. The London Stock Exchange and Euronext are currently the most likely candidates as they comprise already merged underlying links in the value chain, cf. Table 1. Minor stock exchanges in Europe can probably choose to be associated with one of the large stock exchanges, or alternatively to remain or become specialised marketplaces for less liquid securities.

## **CLEARING OF SECURITIES TRANSACTIONS**

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In most European countries clearing of a securities transaction for settlement is undertaken by a central counterparty, cf. Box 2. Transactions on the Euronext exchanges are cleared by Clearnet in which Euronext owns 80 per cent of the shares, while the central securities depository, Euroclear, owns the remainder. Clearnet is the result of a merger between the clearing houses in the Netherlands, Belgium and France. In the UK, London Clearing House is the central counterparty for transactions on the London Stock Exchange and the derivatives exchange LIFFE, as well as on other exchanges.

## CENTRAL COUNTERPARTIES

Box 2

A central counterparty enters into and guarantees all transactions. The central counterparty is thus the seller vis-à-vis all buyers, and the buyer vis-à-vis all sellers. A central counterparty offers netting of transactions, which reduces the liquidity requirements. This also implies anonymity in transactions, which is increasingly in demand. A central counterparty may also be a member of several CSDs, which can facilitate cross-border clearing and settlement.

For the trader the use of a central counterparty implies a known counterparty risk (vis-à-vis the central counterparty) rather than an unknown counterparty risk vis-à-vis the arbitrary counterparty. This is especially beneficial in cross-border securities transactions where counterparties are generally less well-known than is the case in domestic transactions. The transfer of risk from the market participants to the central counterparty entails the concentration of the credit risk and the operational risk, which makes strong demands on e.g. regulation and risk management tools. The authorities therefore have a significant interest in the specific structure of the central counterparty. No major international recommendations/standards for central counterparties have been issued.

In June 2003, London Clearing House and Clearnet announced the merger of the two companies to a new company, LCH.Clearnet, by the end of 2003. The merger was not unexpected due to such factors as the recent inclusion of LIFFE, one of London Clearing House's major clients, into the Euronext group. As previously stated, the other Euronext exchanges rely on Clearnet as their central counterparty. The merger implies significant concentration in this area.

For transactions on Deutsche Börse a central counterparty, Eurex Clearing<sup>1</sup>, was established recently. This is also the central counterparty for transactions on the Eurex derivatives exchange. No central counterparties<sup>2</sup> have been established in the Nordic countries where clearing takes place in the respective countries' CSDs. At VP, the transactions are netted in the clearing process, followed by settlement in four consecutive blocks.

Clearing is a typical network benefit since the advantages to the investors are enhanced as the number of participants<sup>3</sup> increases. A high degree of horizontal consolidation in the clearing area thus offers clear benefits. An appropriate structure at European (global) level could thus be few, but large, pan-European (global) central counterparties with the

<sup>1</sup> In the spring of 2003 Eurex Clearing signed a memorandum of understanding with Board of Trade Clearing Corporation, which is the largest US central counterparty for futures, with a view to creating a global solution for clearing of derivatives trading.

<sup>2</sup> There is one exception, however, since the FUTOP clearing house acts a central counterparty for trading in futures and options quoted on the Copenhagen Stock Exchange.

<sup>3</sup> A telephony network is another example of a network benefit.

VALUE OF SECURITIES IN CUSTODY (BILLION EURO)	Table 2	
	2001	2002
Euroclear .....	8.700	8.600
Crest .....	2.600	2.000
Clearstream .....	7.668	7.144
Monte Titoli (Italy) .....	1.542	1.575
Iberclear (Spain) .....	567	507
VP .....	427	435

Note: Crest and Euroclear are included separately to illustrate the differences in size. Crest and Euroclear merged in autumn 2002.

Source: Annual reports from the institutions.

capacity for cross-border netting of transactions and commitments. This structure could contribute to reducing the costs of cross-border securities trading. The advantages could, however, be offset by impediments to competition and concentration of risk.

## SETTLEMENT OF SECURITIES TRANSACTIONS AND CUSTODY OF SECURITIES

A CSD will typically undertake settlement, whereby traded securities are exchanged for cash, thereby finalising transactions as well as the subsequent custody of securities. There are 21 CSDs in the EU, of which the two most important are Clearstream and Euroclear. Clearstream is the result of a merger between Deutsche Börse Clearing and the international CSD (ICSD), Cedel. Euroclear is the result of a merger of the ICSD, Euroclear, and the central securities depositories in France, the Netherlands and Belgium, and Crest in the UK as from the autumn of 2002. Euroclear is in the process of developing a common settlement platform for the merged CSDs.

In terms of the value of the securities in custody at the two CSDs, Euroclear is the largest, particularly after the merger with Crest, cf. Table 2. The Nordic countries have national central securities depositories with no cross-border constellations, unlike the trading area.

Consolidation of central securities depositories can be beneficial on the condition that a common settlement system is established. Consolidation may also enable an investor to have all his securities in custody at one CSD, thereby creating a basis for smoother liquidity management. The background is that many securities are eligible as collateral for credit (liquidity) granted by central banks. Liquidity is very important to efficient payment systems and securities settlement<sup>1</sup>. However, legisla-

<sup>1</sup> The Danish settlement structure is described in further detail in Danmarks Nationalbank, *Financial Stability* 2002.

## CHANNELS FOR CROSS-BORDER SECURITIES SETTLEMENT

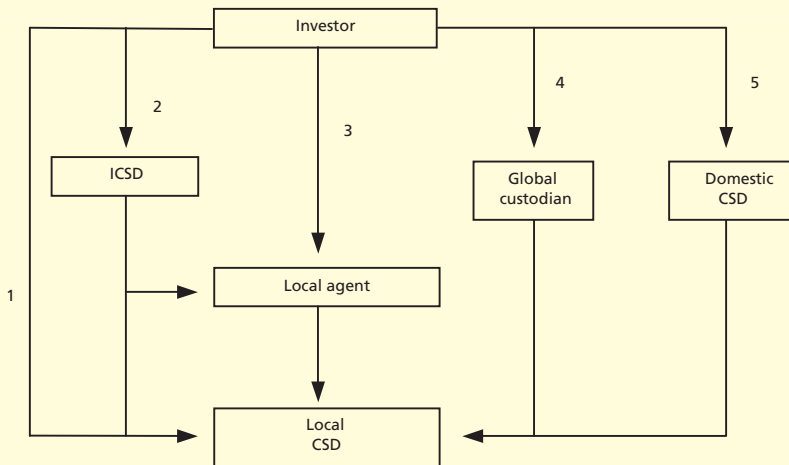
Box 3

In order to settle a securities transaction both parties to the transaction must have access to systems for respectively delivery and receipt of the securities. In a cross-border securities transaction one – or both – parties are located in a country other than the country where the paper is held (in a custody account at a CSD). It is therefore necessary to establish access to the settlement system in question, or links between the settlement systems in the various countries.

There are five channels for the settlement of cross-border transactions:

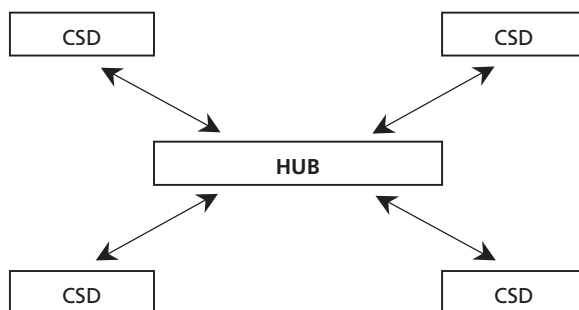
1. The investor may have direct access to the national CSD as a member. According to BIS' Report on Consolidation in the Financial Sector of 2001 this solution is costly and not widespread.
2. The investor may use an international CSD with direct access to the national CSD or indirect access via a local agent, usually a financial institution.
3. The investor may use a local agent who is a member of the national CSD. This is the most common solution for equities.
4. The investor may use a global custodian. Global custodians operate in many markets and offer the investor registration of securities at the custodian, which again directly or indirectly registers the securities to a collective custody account at a CSD.
5. The investor may use a direct link between the domestic and the foreign (national) CSD if such a link exists. This facilitates the investor's liquidity management since it provides for concentration of securities to be used as collateral in one custody account. This is typically a more expensive solution.

## CHANNELS FOR SETTLEMENT OF TRANSACTIONS



Source: The Giovannini Group: Cross-Border Clearing and Settlement Arrangements in the European Union, November 2001 (see [http://europa.eu.int/comm/economy\\_finance/giovannini/clearing\\_settlement\\_en.htm](http://europa.eu.int/comm/economy_finance/giovannini/clearing_settlement_en.htm))

tive differences between the countries, e.g. in the taxation area, may impede the consolidation of registration functions.



Settlement of cross-border securities transactions requires that the various national systems are able to communicate, which can be ensured in several ways, cf. Box 3, which all include intermediaries that raise the costs. This is one of the obstacles making cross-border trading relatively expensive. The further integration of settlement systems is therefore a precondition for a reduction of costs<sup>1</sup>.

So far settlement systems have often been integrated via links between the central securities depositories. However, the establishment and maintenance of links is relatively cost-intensive<sup>2</sup> for a high number of central securities depositories. In view of this concern several major central securities depositories are working on an alternative solution with significantly fewer links. The idea is for the individual central securities depositories to manage their links via a few central hubs that can communicate with each other<sup>3</sup>, cf. Chart 2. Furthermore, this model provides for continued national custody of securities, which can be expedient in view of the variations in legislation between the individual countries.

The model is a proposal for the integration of cross-border settlement in the medium term. In the longer term, settlement and custody can be expected to be concentrated on fewer units.

## THE INTERESTS AND INITIATIVES OF EUROPEAN AUTHORITIES

The securities markets channel capital to business enterprises and households. It is therefore in the interest of the authorities to ensure a well-functioning, efficient and safe securities infrastructure.

<sup>1</sup> In the report: Cross-Border Clearing and Settlement Arrangements in the European Union, November 2001 (see [http://europa.eu.int/comm/economy\\_finance/giovannini/clearing\\_settlement\\_en.htm](http://europa.eu.int/comm/economy_finance/giovannini/clearing_settlement_en.htm)) the Giovannini Group estimates the direct costs for clearing and settlement of cross-border securities transactions in the EU to be approximately 11 times the level for domestic transactions.

<sup>2</sup> Linking of  $n$  central securities depositories requires  $n*(n-1)$  links. This currently corresponds to 420 links for the EU.

<sup>3</sup> This is popularly known as the *hub and spokes* model as it resembles a bicycle wheel.

The smooth execution of monetary policy is important to central banks. So the counterparties must be able to provide securities as collateral for loans as part of the monetary-policy operations quickly and easily. Another important factor is to ensure robust clearing and settlement systems since financial stability may be seriously jeopardised by a problem spreading among the participants.

Furthermore, horizontal as well as vertical consolidation in the securities area may impede competition, which needs to be assessed by the authorities. There is a need for monitoring the monopolistic institutions to ensure that they do not exploit their position.

Under the auspices of the EU work is in progress to develop a legislative framework for the single financial market. Several draft directives that will affect the infrastructure on the securities market have been submitted and adopted.

Among the directives is the prospectus directive that was adopted during the Danish presidency in the autumn of 2002. The purpose of the directive is to establish a "European passport" for prospectuses, whereby prospectuses for stocks or bonds approved in one EU member state can be used freely for the supply or quotation of the same paper in another member state. The directive also simplifies the language requirements. This directive is expected to augment competition between stock exchanges, which may lead to further consolidation.

Towards the end of 2002 the European Commission submitted a proposal for a new investment services directive. The proposal harmonises the rules for the various types of marketplace for listed securities. For example, alternative trading systems or multilateral trading facilities (MTFs) will now be subject to rules that are rather more lenient than the rules concerning stock exchanges. Previously, MTFs were not subject to EU regulations.

With regard to EU legislation concerning clearing and settlement the finality directive of 1998 has significantly diminished the legal uncertainty in net settlement of securities in the EU. Furthermore, the directive on financial collateral arrangements (the collateral directive) of 2002 may contribute to enhancing the legal protection of cross-border collateral arrangements.

In addition, the Giovannini Group<sup>1</sup> has prepared two reports on behalf of the European Commission. The first report identifies 15 barriers to efficient clearing and settlement of cross-border securities transactions

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<sup>1</sup> The group consists of experts from the financial sector and has the mandate to advise the Commission on issues related to financial markets. The two reports are entitled: Cross-Border Clearing and Settlement Arrangements in the European Union from 2001 and Second Report on EU Clearing and Settlement Arrangements from 2003.

In its 2001 report the Giovannini Group identified 15 barriers to an effective market for clearing and settlement of cross-border securities transactions. The barriers were divided into three main categories: technical barriers/market practices, taxation barriers and legal barriers.

**Barriers relating to technical requirements/market practices:**

- National differences in information technology and interfaces for clearing and settlement
- National clearing and settlement restrictions that require the use of multiple systems
- Differences in national rules relating to corporate actions, etc.
- Absence of intra-day settlement finality between the systems of different countries due to different settlement cycles
- Practical impediments to remote access to national clearing and settlement systems
- National differences in settlement periods (normally T+3)
- National differences in the opening hours of clearing, settlement and payment systems
- National differences in securities issuance practice
- National restrictions on the location of securities
- National restrictions on the activity of primary dealers and market makers

**Barriers related to taxation:**

- National rules excluding foreign custodian banks, etc. from administration of taxation aspects of securities
- Transaction taxes collected as an integrated part of the settlement system.

**Barriers relating to legal certainty:**

- Absence of EU-wide framework for the treatment of interests in securities
- National differences in the legal treatment of bilateral netting for financial transactions
- Uneven application of national conflict of law rules.

Note: The barriers are described in further detail in Section 5 of the Report.

Source: The Giovannini Group: Cross-Border Clearing and Settlement Arrangements in the European Union, November 2001 (see [www.europa.eu.int/comm/economy\\_finance/giovannini/clearing\\_settlement\\_en.htm](http://www.europa.eu.int/comm/economy_finance/giovannini/clearing_settlement_en.htm))

in the EU, see Box 4. The group's second report from April 2003 suggests measures to remove these barriers. Against this background, during the autumn the Commission is expected to submit a plan of action, including measures to promote the integration of this area.

Finally, on 1 August 2003, the European System of Central Banks (ESCB), in cooperation with the Committee of European Securities Regulators (CESR), submitted a report for public consultation. The report proposes standards for securities clearing and settlement systems to enhance the security and efficiency of the systems. It also proposes that some of the standards also be applied to large custodian banks that

undertake clearing and settlement of securities, but are not regulated as such.

## **CONCLUSION**

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A current characteristic of the infrastructure of the European securities markets is that the individual units are becoming increasingly larger. Previously, the tendency was towards vertical consolidation, i.e. between various links in the infrastructure, but recent years have seen strong development of horizontal consolidation, whereby the same links in the infrastructure are merged into larger and larger units. There is prospect of considerable concentration.

In theory large institutions are an advantage, especially in the clearing area. This is one reason that many observers expect further consolidation as the establishment of large central, cross-border counterparties. The integration of the settlement structures is a precondition for reducing the costs of cross-border trading and enhancing the integration of the financial markets.

The securities markets' structure will be monitored to a greater degree by the authorities, not least at EU level where further initiatives from the European Commission are expected.

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# The Provision of Collateral to Danmarks Nationalbank in a Legal Perspective

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*Niels C. Andersen and Kirsten Gürtler, Legal Affairs*

## INTRODUCTION

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Danmarks Nationalbank has previously described financial institutions' accounts at and provision of collateral to Danmarks Nationalbank from an operational point of view without further detail concerning the fundamental legal aspects.<sup>1</sup>

On a daily basis Danmarks Nationalbank accepts collateral for credit in Danish kroner and euro in the range of kr. 100 billion.<sup>2</sup> Consequently it is imperative that the collateral provided is legally valid and can be enforced in the event of default by a financial institution.

The following describes the various methods of providing collateral for loans from Danmarks Nationalbank, as well as the legal basis, including the special rules of law applying in connection with the provision of collateral to central banks.<sup>3</sup>

## BACKGROUND

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Danmarks Nationalbank requires collateral for all types of lending. This applies to intraday credit, monetary-policy loans, and loans for cash deposits<sup>4</sup>. Access to uncollateralised intraday credit was phased out as from 1995 and finally abolished in 1998.<sup>5</sup>

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<sup>1</sup> See Financial Institutions' Accounts at and Pledging of Collateral to Danmarks Nationalbank, Danmarks Nationalbank, *Monetary Review*, 4th Quarter 2001 and *Monetary Policy in Denmark*, 2nd edition, Danmarks Nationalbank, 2003.

<sup>2</sup> The figure solely comprises the traditional pledging of collateral and does not include access to setoff against certificates of deposit, automatic collateralisation pursuant to Section 55 of the Securities Trading Act, or cross-border collateral. The figure is solely based on a random week (calendar week 9, 2003).

<sup>3</sup> The terms and conditions for provision of collateral to Danmarks Nationalbank are stated in Danmarks Nationalbank's documentation for monetary-policy instruments and settlement of payments, which can be found at [www.nationalbanken.dk](http://www.nationalbanken.dk) under Rules/Payments – Rules and Provisions/Documentation.

<sup>4</sup> Cash supplies in Denmark are based on a number of cash depots placed with banks throughout the country. A ceiling (maximum) is set for the size of the depot, and Danmarks Nationalbank grants the depot holder an interest-free loan against collateral in dematerialised securities corresponding to the value of this maximum. Collateral must be provided for the depot maximum, irrespective of the actual cash holdings in the depot.

<sup>5</sup> In the euro area member states the central banks likewise require appropriate collateral for provision of credit, cf. Article 18.1 of the Statute of the European System of Central Banks.

Financial institutions with access to credit at Danmarks Nationalbank in principle provide collateral to Danmarks Nationalbank in three very different ways from a legal perspective, viz. the traditional pledging of securities in a securities account at VP Securities Services (VP), with a corresponding yield account<sup>1</sup>; by using automatic collateralisation in accordance with Section 55 of the Securities Trading Act (STA)<sup>2</sup>, and via access to setoff in certificates of deposit<sup>3</sup>. In addition, certain forms of cross-border collateral may be used vis-à-vis Danmarks Nationalbank.

### The finality directive<sup>4</sup>

In recent years the EU has focused extensively on the legal aspects of financial collateral. Directive 98/26/EC on settlement finality in payment and securities settlement systems was adopted in May 1998 pursuant to article 100A (now 95) of the EC Treaty with a view to making arrangements for cross-border payments and securities settlement in the Community function smoothly.<sup>5</sup> To reduce the systemic risk, the directive focuses mainly on two aspects, viz. settlement finality in such systems and the enforceability of the collateral provided, irrespective of the possible insolvency of a participant. In addition, a conflict of laws rule has been introduced for dematerialised securities<sup>6</sup>.

The directive was adopted shortly before the introduction of the euro in the participating member states on 1 January 1999 when the European Central Bank, ECB, and the European System of Central Banks, ESCB, comprising the national central banks and the ECB, were established. In this connection the directive was extended to include collateral provided in connection with transactions made by central banks of the member states and the ECB in their capacity as central banks, including monetary-policy transactions.<sup>7</sup>

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<sup>1</sup> The collateral basis comprises selected bonds denominated in Danish kroner, registered at VP (dematerialised securities) and listed on the Copenhagen Stock Exchange. Both redemption amounts and yields are deposited to the pledged yield account.

<sup>2</sup> The automatic collateralisation under STA Section 55(1-4) is often referred to as an agreed right of collateral, as opposed to the statutory right of collateral under STA Section 55(5).

<sup>3</sup> Certificates of deposit are issued each week, normally with a maturity of 14 days, as one of a series of monetary-policy instruments. The purchase of certificates of deposit by a financial institution is solely registered to – in spite of the name – the institution's certificate-of-deposit account at Danmarks Nationalbank, and is thus not a dematerialised security, cf. STA Section 59(2).

<sup>4</sup> See also Peter M. Restelli-Nielsen and Ulla Sterkel, Finality-direktivet (The Finality Directive – in Danish only), Danmarks Nationalbank, *Monetary Review*, 2nd Quarter 1998.

<sup>5</sup> The directive was implemented in Danish law via Act no. 283 of 26 April 2000, which came into force on 1 May 2000. The implementation deadline was 11 December 1999.

<sup>6</sup> For further details, see the section on the directive on financial collateral arrangements. The conflict of laws rule in Article 9(2) of the directive only applies within the scope of the directive, but the explanatory notes to the Danish implementation act (Act no. 283 of 26 April 2000) state that the conflict of laws rule of the directive is a codification of existing Danish law as described in the legal literature, for which reason no *e contrario* conclusion can be drawn outside the scope of the directive.

<sup>7</sup> See e.g. preamble 10 of the directive.

## The directive on financial collateral arrangements

In continuation of the directive on settlement finality and in pursuance of the same provision, viz. Article 95 of the EC Treaty, the directive on financial collateral arrangements (2002/47/EC) was adopted on 6 June 2002. The purpose of the directive is to support efficient use of cross-border collateral<sup>1</sup> for bilateral accounts.<sup>2</sup>

Bilateral accounts were originally part of the finality directive, but harmonisation of property law and insolvency law, which traditionally fall under the national jurisdiction<sup>3</sup>, was omitted during the negotiations.

The purpose of the directive is also to give the parties to a financial collateral agreement extensive freedom as to the content of the agreement. The options provided by the directive may thus be fully applied or limited as desired by the parties.<sup>4</sup>

In addition, a conflict of laws rule in the directive aims to create legal certainty in connection with rights in respect of securities held with an intermediary.<sup>5</sup>

Central banks are also comprised by the directive on financial collateral arrangements, since the protection provisions in the directive in some cases exceed the protection obtained by central banks in the finality

<sup>1</sup> The directive does, however, also apply even if there is no cross-border element.

<sup>2</sup> See e.g. preamble 3 of the directive and the European Commission's draft directive COM(2001)168 final of 27 March 2001. This should mainly be effected in that the directive acknowledges the most significant risk-reducing measures developed and currently applied by the market itself. As a minimum, the directive applies to all financial institutions, including central banks.

<sup>3</sup> Outside the financial area the EU has subsequently adopted regulation 1346/2000/EC (the insolvency regulation), which took effect on 31 May 2002 in the other EU member states. Denmark is subject to a derogation and the European Commission has rejected a Danish request for a parallel agreement. Currently the Ministry of Justice has no plans to implement the insolvency regulation unilaterally in Danish law. By and large the regulation does not affect material insolvency law, but rather regulates the applicable law in connection with cross-border insolvency cases. Pursuant to the single-market provision in Article 47(2) of the EC Treaty, two directives have been introduced in the financial area, directive 17/2001/EC on the reorganisation and winding-up of insurance undertakings and directive 24/2001/EC on the reorganisation and winding up of credit institutions (the winding-up directives), which must be implemented in Danish law by respectively 20 April 2003 (see the Danish Financial Supervisory Authority's order no. 584 of 25 June 2003, which came into force on 30 June 2003) and 5 May 2004. Like the insolvency regulation, the directives regulate aspects in relation to procedure and applicable law for cross-border insolvency cases. Neither the insolvency regulation nor the winding-up directives thus comprise direct material harmonisation of e.g. reversal provisions.

<sup>4</sup> Since a number of provisions in the directive to some extent modify the principle of equality in insolvency law, written documentation is required in order to prove that dispositions have been made in accordance with the prior agreement between the parties.

<sup>5</sup> Article 9 of the directive thus widens the scope of the conflict of laws rule in Article 9(2) of the finality directive to the scope for the directive on financial collateral arrangements. The wording and structure of the two provisions deviate somewhat, but preamble 7 of the directive on financial collateral arrangements leaves no doubt that the intention was to lay down the same criteria for applicable law, i.e. a specification of the *lex rei sitae* principle to the place where the relevant securities account is held. Naturally it is questionable whether it is a simple task to establish where an account is held, including what is decisive to where an account is believed to be held. The Hague Convention on the Law Applicable to Certain Rights in respect of Securities held with an Intermediary, which was finally negotiated on 13 December 2002, but which has neither been ratified by Denmark nor the EU yet, provides a more detailed attempt to solve the conflict of laws at the global level, and the Convention will, when eventually in force, presumably lead to amendments to the conflict of laws rules in the finality directive and the directive on financial collateral arrangements. For further details, see the home page of the Hague Conference ([www.hcch.net](http://www.hcch.net)), convention no. 36.

directive<sup>1</sup>. Considering the special protection rules introduced via the finality directive and Danmarks Nationalbank's current system for provision of collateral, the directive on financial collateral arrangements will not, however, have any immediate impact on Danmarks Nationalbank in this respect.<sup>2</sup>

Since the market participants exchange the liquidity provided by the central banks among themselves via internal transactions in the money market, it is in the interests of the central banks in the EU that this broader perspective of monetary policy be covered by rules equivalent to those in the finality directive.<sup>3</sup> In addition, the directive will generally create greater certainty as to the legal basis for provision of collateral in the EU, and can thus promote secure and efficient financial markets.<sup>4</sup>

The three basic methods for provision of collateral to Danmarks Nationalbank (traditional pledging of securities, automatic collateralisation and access to setoff in certificates of deposit) and provision of cross-border collateral will be discussed further below, as will the significance of the finality directive.

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## TRADITIONAL PLEDGING OF SECURITIES

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Financial institutions provide collateral for loans in Danish kroner, i.e. loans within the same day (intraday credit)<sup>5</sup>, monetary-policy loans and

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<sup>1</sup> For instance, establishment and enforcement of collateral must not be made dependent on the performance of any formal act, and the parties may agree that the pledgee has the right of use of the collateral. The latter implies that the pledgee may subpledge, cf. the Danish Code of King Christian V Article 5-7-4, or even sell the pledged item provided that equivalent collateral is returned when the underlying financial obligation matures. In addition, agreements on financial collateral in the form of transfer of ownership (e.g. repo transactions) are acknowledged.

<sup>2</sup> For the financial instruments, mainly shares and bonds, comprised by the directive, cf. Article 2(1)(e), Danish law includes no special provisions on formal requirements for pledging collateral which do not serve any direct purpose in relation to the provision of collateral, e.g. registration by a notary, or special requirements for documents, and likewise right of use is not currently included in Danmarks Nationalbank's considerations as a pledgee. Unlike previously, repo transactions are not among Danmarks Nationalbank's monetary-policy instruments, whereas they are among the monetary-policy instruments of the Eurosystem. However, the directive does affect Danmarks Nationalbank's placement of the foreign-exchange reserve.

<sup>3</sup> A significant proportion of the payments between Danish banks are settled outside the notified systems pursuant to the finality directive, cf. STA Section 57d(1) and order no. 1157 of 13 December 2002, and moreover some of these payments are not comprised by the existing provision on bilateral netting in STA Section 58, which only comprises currency and securities trading. With the directive on financial collateral arrangements, such bilateral accounts comprised by a collateral arrangement will in future achieve equivalent protection, and thus the systemic risk in relation to the creditors of an insolvent bank will be reduced.

<sup>4</sup> The directive must be implemented by 27 December 2003, and the Ministry of Economic and Business Affairs has set up a working party with the Danish Financial Supervisory Authority as its secretariat with a view to determining the required implementation measures. The task of the working party was completed in July 2003, and a bill is expected to be tabled on 8 October 2003 after a national consultation. For a more detailed review of the directive and proposals for Danish implementation, see the report published by the working party. The report and appendices can be downloaded (in Danish) from [www.ftnet.dk](http://www.ftnet.dk).

<sup>5</sup> Intraday credit is granted in the form of an overdraft facility on the borrower's current account, which is, *inter alia*, used for settlement in VP, the Sumclearing and CLS, as well as payments between

loans for cash depots, in the form of dematerialised securities pledged to Danmarks Nationalbank in the traditional manner. The collateral basis generally comprises bonds denominated in Danish kroner, registered at VP and listed on the Copenhagen Stock Exchange<sup>1</sup>. The pledged dematerialised securities are placed in a joint collateral securities account serving as collateral for the borrower's existing or future debt to Danmarks Nationalbank, whether it relates to intraday credit, monetary-policy loans or loans for cash depots.

When pledging the assets the individual borrower signs a deed of pledge to Danmarks Nationalbank. The pledged dematerialised securities are registered to a VP securities account belonging to the individual pledgor, and the collateral comprises the dematerialised securities registered to the VP securities account at any time.<sup>2</sup> Danmarks Nationalbank registers the pledge in VP in accordance with STA Section 66<sup>3</sup>. The VP securities account is linked to a yield account at Danmarks Nationalbank, which is also pledged to Danmarks Nationalbank.<sup>4</sup> Redemption amounts and interest are credited to this account. On a daily basis Danmarks Nationalbank transfers the balance of the account to the pledgor's current account, provided that the calculation of the pledgor's excess collateral<sup>5</sup> does not thereby become negative.

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banking institutions via Kronos. CLS (Continuous Linked Settlement) clears and settles currency transactions in US, Australian and Canadian dollars, euro, Japanese yen, pounds sterling, Swiss francs and since 8 September 2003 also in Danish and Norwegian kroner and Swedish kronor, as well as Singapore dollars. Settlement in Danish kroner generally takes place via the participant's current account at Danmarks Nationalbank. VP and the Sumclearing are clearing systems with net settlement, i.e. all payments to and from a participant are compiled into one payment per settlement batch in the individual system and settled via the participant's settlement account at Danmarks Nationalbank. Kronos, on the other hand, is an RTGS (Real-Time Gross Settlement) system, i.e. payments are settled individually immediately after the payment request. The account holder must settle intraday overdrafts within the same settlement day, i.e. by 3.30 p.m. CLS is operated by CLS Bank International under a New York banking licence. The bank is a "single purpose bank", which solely operates CLS. The Sumclearing is owned by the Danish Bankers Association, but in practice operated by PBS; the VP System is owned and operated by VP; while Kronos is owned and operated by Danmarks Nationalbank.

<sup>1</sup> The collateral value is calculated as the market value including accrued interest on the pledged dematerialised securities less margins and haircuts determined by Danmarks Nationalbank.

<sup>2</sup> Re-registration is not required in connection with each deposit/exchange, see e.g. Lars Hedegaard Kristensen, Sivende Pant, *Festskrift til Juridisk Klub 1988-1998* (Shrinking Collateral, *Festschrift for the Law Club 1988-1998*), p. 79, Finanssektorens Uddannelsescenter and, by the same author, *Studier i erhvervsfinansieringsret* (Studies in business finance law) (2003), p. 360.

<sup>3</sup> Pursuant to STA Section 66(1) rights pertaining to dematerialised securities shall be registered at a central securities depository in order to be protected against legal proceedings and transferees.

<sup>4</sup> It is a case of pledge in (assignment of) a simple claim, known as collateral in own debt. Since Danmarks Nationalbank is the debtor in relation to the claim, but also the party acquiring collateral in the claim, notice of action is not given to Danmarks Nationalbank under Section 31(1) of the Debt Instrument Act. Such notice would serve no purpose and is not required since Danmarks Nationalbank is already aware of the right created in the claim via the conclusion of the agreement. See Bernhard Gomard, *Obligationsretten 3. del* (The law of obligations part 3), 1st ed. (1993), p. 220, Lars Hedegaard Kristensen, *Studier i erhvervsfinansieringsret* (Studies in business finance law) (2003), p. 289 ff. on the act of perfection in connection with collateral and agreed access to setoff and, by the same author, Sivende Pant, *Festskrift til Juridisk Klub 1988-1998*, (Shrinking Collateral, *Festschrift for the Law Club 1988-1998*) p. 72 ff., Finanssektorens Uddannelsescenter.

<sup>5</sup> The excess collateral is calculated as the aggregate collateral value of the collateral provided less monetary-policy loans, maximum for loans re cash depots, as well as any other credit facilities. The pledgor must provide further collateral if it is not possible to empty the yield account.

Under Danmarks Nationalbank's terms and conditions for provision of collateral, the pledgor must, unprompted, re-establish the margin by providing further collateral if the calculation of the pledgor's excess collateral is negative when a margin of 1 per cent is applied. Pursuant to STA Section 57b(1)<sup>1</sup> such provision of collateral to Danmarks Nationalbank cannot be revoked pursuant to the Insolvency Act Section 70(1) (collateral not provided when the debt is incurred) or Section 72(2) (certain dispositions made after the filing of a request for bankruptcy), unless the collateral has not been pledged without undue delay after the occurrence of the collateral shortfall, or the collateral has been provided under such circumstances that it does not appear as ordinary.

Collateral is also provided for any euro-denominated intraday credit<sup>2</sup>. The collateral basis is in principle the same as for credit in Danish kroner. For practical reasons the same VP securities account is not used, however, but a separate securities account solely used as the collateral basis for euro-denominated liquidity.<sup>3</sup> The pledging terms correspond to those applied in connection with krone-denominated credit.

### **Withdrawal and exchange**

The pledgor may request Danmarks Nationalbank to withdraw dematerialised securities from the pledged VP securities account. In accordance with the terms and conditions for provision of collateral to Danmarks Nationalbank the request is only granted if the check of adequate cover shows that the calculation of the pledgor's excess collateral will not become negative, and the reduced maximum for intraday overdrafts on the current account<sup>4</sup> will not fall below the existing overdraft. Likewise, the pledgor may exchange collateral. This is done by transferring new collateral and subsequently withdrawing collateral.

In practice no formal withdrawal request is submitted by the pledgor to Danmarks Nationalbank. Instead, the pledgor withdraws the VP assets in question via its own IT systems. Access to withdrawal is, however, controlled, since prior to withdrawal Danmarks Nationalbank's IT systems perform an electronic check of adequate cover as described above. Danmarks Nationalbank thus performs a simultaneous check in

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<sup>1</sup> This provision implements the finality directive's Article 9(1), under which collateral provided to *inter alia* central banks of the EU member states, or countries with which the EU has entered into an agreement, shall not be affected by insolvency proceedings against a participant.

<sup>2</sup> Since Denmark has not adopted the euro, financial institutions located in Denmark only have access to intraday credit in euro, which must be settled by 5.15 p.m. on the same day.

<sup>3</sup> Since the loan is denominated in euro and the collateral in Danish kroner, a 3-per-cent exchange-rate haircut is calculated in addition to the usual margins and haircuts.

<sup>4</sup> The maximum for an intraday current-account overdraft is calculated as the value of the excess collateral plus the collateral value of the pledgor's certificates of deposit. Certificates of deposit are elaborated on below.

connection with each withdrawal of collateral in order to ensure that the terms and conditions for withdrawal are observed. If withdrawal entails that the borrower's excess collateral becomes negative, or the reduced maximum for intraday overdrafts on the current account falls below the existing current-account overdraft, the system refuses to complete the withdrawal. Dispossession is thus always maintained effectively.<sup>1</sup>

### Realisation

Under Danmarks Nationalbank's deeds of pledge, Danmarks Nationalbank is entitled to seek fulfilment in the dematerialised securities registered to the VP securities account without prior prosecution and without notice. Danmarks Nationalbank is also entitled to take over ownership of the pledged dematerialised securities.<sup>2</sup>

Access to immediate realisation of the pledged securities is granted under STA Section 57b(2), under which collateral pledged to Danmarks Nationalbank in the form of securities or deposits<sup>3</sup> may be realised immediately if a prior agreement to this effect has been concluded and the account holder has not fulfilled his obligations. The usual 8 days' respite before realisation granted under the Administration of Justice Act, cf. Section 538a(2), is thus deviated from. The provision applies to all collateral for loans from Danmarks Nationalbank, including collateral for the monetary-policy operations.

The provision in STA Section 57b(2) was introduced by an amendment of STA in 2000<sup>4</sup> in connection with the implementation of Article 9(1) of the finality directive, under which collateral provided to e.g. registered payment systems and clearing houses, as well as central banks in the EU, shall

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<sup>1</sup> See Lars Hedegaard Kristensen, *Studier i erhvervsfinansieringsret (Studies in business finance law)* (2003), p. 360 ff. Here it is stated that if an agreement has been made between the pledgee and the pledgor concerning a relationship between collateral and credit it should be checked that this agreement is actually observed. See also, by the same author, Sivende Pant, *Festskrift til Juridisk Klub 1988-1998*, (Shrinking Collateral, *Festschrift for the Law Club 1988-1998*), p. 79 ff., Finanssektorens Uddannelsescenter. Lennart Lyngge Andersen and Erik Werlauf likewise state in UFR 2001B p. 77 ff. – on the pledgor's access to independent e-trading in a safekeeping deposit – that the pledgee must ensure that the IT mechanisms are specifically structured so that the total market value of the safekeeping deposit does not fall below the threshold agreed in the deed of pledge. In the same Article it is stated (in Danish): "The pledging agreement must provide for the safekeeping deposit and the attached account to constitute a closed circuit, so that securities can only be withdrawn from the deposit if the proceeds from the sale thereof are deposited in the account and withdrawals from the account can only be made if the sum is used to purchase stock-exchange-listed securities which are placed in the deposit". This requirement can, however, only be relevant if an IT system permits the withdrawal of objects from the pledged deposit, even though the collateral value then falls below the agreed limit.

<sup>2</sup> This appropriation option is not acknowledged in all EU member states, and although the directive on financial collateral arrangements provides for harmonisation in this respect, cf. Article 4(1)(a), EU member states that did not allow appropriation on 27 June 2002 are not obliged to recognise it even after the implementation deadline of 27 December 2003, cf. Article 4(3).

<sup>3</sup> If the collateral pledged is cash, the cash may be used to offset or meet relevant financial obligations without prior notification of the pledgor.

<sup>4</sup> Act no. 283 of 26 April 2000, which came into force on 1 May 2000.

not be affected by the insolvency of a participant. With the amendment to STA, the access to immediate realisation was extended to apply to collateral provided to Danmarks Nationalbank, payment systems registered under Section 57a and their participants.<sup>1</sup>

Danmarks Nationalbank also provides intraday credit and monetary-policy loans to e.g. branches in Denmark of foreign credit institutions under supervision in another EU member state or in a country with which the EU has concluded an agreement, against collateral in bonds denominated in Danish kroner, registered at VP and listed on the Copenhagen Stock Exchange.<sup>2</sup> Implementation of the finality directive in the individual EU member states<sup>3</sup> ensures that no discussion will arise as to Danmarks Nationalbank's access to realise the pledged securities, even though the pledgor is domiciled outside Denmark and the possible winding-up of the estate will take place under the rules of the country where the headquarters are located.

### **Collateral in settlement accounts**

Within defined time limits, participants in the Sumclearing and VP for trading transactions and periodic settlements<sup>4</sup> must transfer liquidity from their current accounts to special settlement accounts used for respectively the Sumclearing, VP for trading transactions, and VP for periodic settlements. Danmarks Nationalbank acts as guarantor to the clearing systems that an amount equivalent to the balance of the respective settlement accounts is available for settlement. Until the account holder's net position has been compiled and registered to the individual settlement account, the account is blocked to secure Danmarks Nationalbank's claim on the account holder as a result of Danmarks Nationalbank's guarantee vis-à-vis the clearing systems. When the account is blocked, the account holder cannot dispose of the funds deposited.

## **AUTOMATIC COLLATERALISATION**

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In connection with the Sumclearing in Danish kroner, VP in Danish kroner (i.e. settlement of securities trades and periodic payments) and

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<sup>1</sup> Under the previous provision in STA Section 56 collateral pledged to a clearing house or clearing participant to comply with the clearing house's rules for pledging of collateral could be realised immediately.

<sup>2</sup> After a specific assessment Danmarks Nationalbank may also accept other assets as collateral, cf. the section on cross-border collateral.

<sup>3</sup> Credit may also be granted to branches of e.g. Norwegian credit institutions. As an EEA country Norway, just like the EU member states, implements all single-market directives, including the finality directive, into national legislation.

<sup>4</sup> E.g. settlement of interest, dividend and withdrawals.

CLS, Danmarks Nationalbank also applies a special procedure for provision of collateral, known as automatic collateralisation.<sup>1</sup>

Automatic collateralisation makes it possible for Danmarks Nationalbank to make liquidity available to a borrower for the above settlements against collateral in the value of the borrower's portfolio of dematerialised securities<sup>2</sup> in one or more designated VP securities accounts, typically the borrower's normal trading account.

Unlike traditional collateral, automatic collateralisation does not entail binding of specific dematerialised securities in the VP securities account<sup>3</sup>, and no specification of the dematerialised securities is required before any assertion of the right of collateral. As regards settlement of trades in VP, automatic collateralisation facilitates the process, in that it enables the borrower to pledge purchased dematerialised securities as collateral for payments that are already in the settlement batch in which the securities are received.<sup>4</sup> Using traditional collateral dematerialised securities cannot be pledged as collateral for settlement credit until subsequent settlement batches.

The automatic collateralisation system is established pursuant to STA Section 55<sup>5</sup>, which enables the use of automatic collateralisation for loans provided by e.g. Danmarks Nationalbank in connection with settlement of securities trades and non-trading-related payments (including periodic payments) in clearing houses and in connection with settlement

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<sup>1</sup> On 8 September 2003 Danish kroner, along with Norwegian kroner, Swedish kronor and Singapore dollars, joined CLS, and from this date automatic collateralisation may also be applied in connection with CLS settlement. Automatic collateralisation is not used in connection with loans for payments via Kronos, which is an RTGS payment system, the scope of which is not limited to settlement.

<sup>2</sup> The provision in STA Section 55 only applies to dematerialised securities. Under Danmarks Nationalbank's automatic collateralisation and in accordance with VP's clearing rules Danmarks Nationalbank notifies VP of which dematerialised securities may serve as collateral for loans under the automatic collateralisation, as well as the collateral value of the dematerialised securities. Danmarks Nationalbank may at any time amend this "approved list".

<sup>3</sup> Traditional collateral may e.g. comprise some of the dematerialised securities registered to a VP securities account or the dematerialised securities registered to the VP account at any time. The latter pledging agreement does not, however, exempt the pledgee from stating the specific dematerialised securities in the VP securities account at the time of notification, cf. Sections 35 and 36 of the Danish Financial Supervisory Authority's order no. 925 of 17 October 1996 on registration, etc. of dematerialised securities by a central securities depository. No such requirement applies to notification under automatic collateralisation, cf. the same order Section 32, relating to the structure of a central securities depository's registers. Pursuant to Section 32(1) pledging agreements require registration of, *inter alia*, information on the dematerialised securities pledged. From Section 32(3) it appears that (1) does not apply to registration of collateral under STA Section 55(2) and (3) (now Section 55(4) and (5)). Pursuant to the above order VP need not register information of the pledged dematerialised securities in the VP securities account in connection with registration under automatic collateralisation.

<sup>4</sup> This naturally requires that the securities purchased can be pledged under automatic collateralisation, i.e. they are included on the "approved list", which shares are not.

<sup>5</sup> STA Section 55(1) relates to establishment of automatic collateralisation in connection with settlement of securities trades and non-trading-related payments in a clearing house. Section 55(2) relates to establishment of automatic collateralisation in connection with settlement of payments in a payment system. Section 55(3) relates to establishment of automatic collateralisation in connection with securities clearing activities conducted by Danmarks Nationalbank, or a payment system operated by Danmarks Nationalbank. STA Section 55(5) relates to the statutory right of collateral linked to net acquisition of dematerialised securities if a loan has been granted in this connection. The latter is not applied by Danmarks Nationalbank and is not discussed in this article.

INTRODUCTION AND DEVELOPMENT OF THE AUTOMATIC  
COLLATERALISATION

Box

The provision concerning automatic collateralisation was originally inserted in connection with stock-exchange reform II at the end of 1995 and was at that time limited to provision of collateral in connection with settlement of securities trades in a clearing house. According to the explanatory notes to the original bill the background was, *inter alia*, to achieve a better basis for professional market participants to provide collateral for credits granted by clearing houses and clearing participants in immediate connection with the settlement.

Via an amendment to the act in the autumn of 2000 – Act no. 1327 of 20 December 2000 – the access to automatic collateralisation was extended to apply to credit for settlement of payments in approved payment systems, and in payment systems operated by Danmarks Nationalbank. The background to this extension was that after the introduction of the finality directive legislation generally ranks clearing houses with registered payment systems in areas such as netting and immediate realisation, and furthermore the transaction volume in payment systems had been increasing significantly in recent years.

A working party set up by the Danish Bankers Association with the participation of Danmarks Nationalbank, the banks and VP subsequently discussed how a widening of the scope of the automatic collateralisation to settlement of payments in the Sum-clearing and CLS (from the time when the Danish krone joined CLS) and in connection with subscription and periodic payments in VP could be implemented, and how automatic collateralisation could generally be used most appropriately in Denmark. This work entailed a need to make certain amendments to STA Section 55.

The wording of the previous STA Section 55 meant that collateral under automatic collateralisation could only be established when a lending requirement of a specific amount had been established. At the same time it was a prerequisite that registration of the right of collateral took place at a time "immediately connected with the performance of the settlement". Neither the wording of the act nor the preparatory work specified the relationship in time between the performance of the settlement and the registration of the right of collateral, but the wording chosen indicated a very narrow relationship in time.

of payments in approved payment systems. A characteristic of these loans is that they are very short-term and that their size may fluctuate greatly from day to day. Automatic collateralisation enables the borrower to pledge the value of dematerialised securities owned by him and deposited in VP as collateral for a loan, the size of which is not known at the time when the automatic collateralisation is agreed, without binding specific electronic securities in the securities account. The registered right of collateral is thus adjusted to the varying size and short duration of the settlement credits. When the loan comprised by automatic collateralisation is settled, the VP securities account is once again at the disposal of the borrower, until a new right of collateral is registered.

CONTINUED

Box

Settlement in the Sumclearing and CLS and registration of collateral in VP under automatic collateralisation take place in different institutions, which means that establishment of loans and registration of collateral cannot take place simultaneously with the settlement, but must take place prior to the settlement. The practical model for implementing automatic collateralisation in connection with payment systems entails that the institutions have the option some time prior to settlement to raise loans against registration of collateral under automatic collateralisation. Furthermore, in the payment systems the borrower does not know the exact borrowing requirement before settlement has taken place. In practice loans must therefore be granted and collateral established under automatic collateralisation on the basis of an expected lending requirement. When settlement has been completed, the exact lending requirement is calculated, and loans and collateral under automatic collateralisation are subsequently reduced to match the lending requirement established in connection with the settlement. Equivalent circumstances do not apply in connection with trading settlement in VP, where VP handles both settlement and registration of collateral under automatic collateralisation. Settlement, establishment of the lending requirement and registration of collateral take place at more or less the same time.

The amendment of STA Section 55 via the adoption of Act no. 427 of 6 June 2002 took account of this. The amendment eliminated the need for a lending requirement to be established before the right of collateral can be registered, as well as the very strict timeliness requirement as regards registration of collateral under automatic collateralisation and settlement. It was also specified that automatic collateralisation may also be used in connection with non-trading-related payments, e.g. periodic payments and payments in connection with share subscription. For further details, see the explanatory notes to bill L 172 on amendment of the Securities Trading, etc. Act tabled on 21 March 2002.

From 18 November 2002 the scope of automatic collateralisation in Danmarks Nationalbank was expanded accordingly so that, in addition to trading settlement in VP, it can also be used for share subscription, periodic payments in VP and the Sumclearing. Since 8 September 2003, when the Danish krone joined CLS, it has also been possible to use automatic collateralisation for CLS settlement.

Borrowers wishing to use automatic collateralisation in connection with VP, the Sumclearing and/or CLS, must agree on automatic collateralisation with Danmarks Nationalbank. The agreement is registered in VP in accordance with the requirement in STA Section 55(4), 1st sentence, and, *inter alia*, specifies the VP securities accounts comprised by automatic collateralisation. If loans are granted under the automatic collateralisation for individual settlement, Danmarks Nationalbank may of its own accord notify VP of the right of collateral with a view to registration. In practice VP is empowered on behalf of Danmarks Nationalbank to notify of and register rights of collateral in the VP securities accounts comprised by automatic collateralisation. Not until such registration has taken place (observance of act of perfection) does Danmarks National-

bank obtain protection against creditors and contracting parties.<sup>1</sup> Any other rights notified to VP after registration of collateral under the automatic collateralisation must thus respect Danmarks Nationalbank's registered right of collateral.<sup>2</sup> The right of collateral comprises all dematerialised securities placed in the securities account, including those transferred to the securities account in a settlement batch concerning securities trading,<sup>3</sup> and is registered for an amount corresponding to the relevant loan under the automatic collateralisation. Loans under the automatic collateralisation are registered to the borrower's automatic collateralisation account at Danmarks Nationalbank.<sup>4</sup>

The borrower is free to sell the dematerialised securities in the VP securities accounts that are used under automatic collateralisation, even after registration of Danmarks Nationalbank's right of collateral, provided that the total value of the dematerialised securities accepted by Danmarks Nationalbank as collateral under the automatic collateralisation, and which are placed in the VP securities accounts used under the agreement, does not fall below the borrower's current loan amount under the automatic collateralisation. As with traditional collateral, access to withdraw securities is controlled in that VP's IT systems prior to withdrawal perform an electronic check of adequate collateral, and block the withdrawal if necessary. The requirement for effective disposition under Danish law is thus met.<sup>5</sup>

If the borrower does not repay a loan under the automatic collateralisation on time, Danmarks Nationalbank is entitled to assert the right of collateral and in this connection requests VP to transfer a relevant portfolio of the pledged dematerialised securities to a VP securities account in

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<sup>1</sup> See e.g. Nis Jul Clausen, *Sikkerhed i fordringer (Collateral in claims)*, 3rd ed. (2000), p. 134, and Paul Krüger Andersen and Nis Jul Clausen, *Børsretten (Stock-exchange law)*, 2nd ed. (2003), p. 126.

<sup>2</sup> Under VP's clearing rules registration of other rights in a VP securities account used under automatic collateralisation immediately entails that dematerialised securities comprised by the agreement can no longer serve as collateral for further loans under the automatic collateralisation. Any collateral rights already exercised are maintained.

<sup>3</sup> As regards the identification issue, see Jesper Lau Hansen in U.1995B.346 Børsreformens lovforslag (the stock-exchange-reform bill), p. 352 (in Danish): "Automatic collateralisation relates to the dematerialised securities at any time placed in a securities account in a central securities depository as stated in the agreement [...]. Automatic collateralisation must be described as a right of collateral. That collateral can only be linked to identified assets is not a problem in this case, since the right of collateral does not exist until notified under STA [...], and the object of the right of collateral can thus be identified as the dematerialised securities placed in the given account at the time of notification."

<sup>4</sup> In connection with settlement of trades in VP the loan proceeds are used directly for settlement. In connection with settlement of periodic payments in VP, the Sumclearing and CLS the loan proceeds are credited to the borrower's respective settlement accounts at Danmarks Nationalbank and used for settlement to the extent required. If an individual loan exceeds the actual withdrawal in the settlement for which the loan is granted, the loan is reduced to match the actual withdrawal.

<sup>5</sup> Jesper Lau Hansen states in U.1995B.346, p. 352 on the stock-exchange-reform bill (in Danish) "even though great importance is attached to the borrower's/pledgor's opportunity of disposing of the securities, e.g. by resale, access to dispose of the pledged dematerialised securities must cease as from the time of notification". This is not quite in accordance with practice. As described above, the pledgee has access to dispose of the securities, even after registration of the right of collateral, but this access is controlled.

Danmarks Nationalbank's name, cf. STA Section 55(6). In connection with the assertion of the right of collateral the assets must be specified. Assertion of the right of collateral must take place before 3.00 p.m. on the settlement date, otherwise the right of collateral will automatically lapse.<sup>1</sup>

Under the automatic collateralisation Danmarks Nationalbank is entitled to realise the pledged dematerialised securities immediately after 3.00 p.m. without observing Section 538a of the Administration of Justice Act. Access to immediate realisation in connection with collateral registered under STA Section 55 is provided for in STA Section 56(1).

The automatic collateralisation cannot be used for other types of credit granted by Danmarks Nationalbank, i.e. monetary-policy loans, intraday credit not used for settlement, or loans for cash depots, since such loans are outside the scope of STA Section 55.

## CERTIFICATES OF DEPOSIT

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As previously stated, certificates of deposit are not dematerialised securities, but cash balances at Danmarks Nationalbank subject to certain conditions.<sup>2</sup> Certificates of deposit may be traded among account holders and are redeemed by Danmarks Nationalbank at a predetermined date. Purchase/sale of certificates of deposit is registered to the individual account holder's certificate-of-deposit account at Danmarks Nationalbank.

An account holder's registered holding of certificates of deposit may also be used as collateral vis-à-vis Danmarks Nationalbank, but only for intraday credit in Danish kroner.<sup>3</sup> The certificates of deposit are not pledged in the traditional manner<sup>4</sup>, but automatically included in the collateral basis since any sale or Danmarks Nationalbank's redemption of certificates of deposit is always registered to the individual account holder's current account at Danmarks Nationalbank. The proceeds thus automatically reduce any withdrawals from the holder's current account. This entails de facto that the account holder must always use the proceeds from the sale/redemption of certificates of deposit, i.e. the balance of the account for certificates of deposit, to redeem any withdrawals from the holder's current account. The part of the proceeds which offsets the account holder's current-account withdrawal at the time of sale/redemption will thus never be at the free disposal of the account

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<sup>1</sup> See the Danish Financial Supervisory Authority's order no. 1032 of 5 December 1996 on time limits for asserting the right to automatic collateralisation and payment reservations, etc.

<sup>2</sup> For a description of certificates of deposit, see Rules for Interest on the Banks' Current-Account Deposits and the Use of Certificates of Deposit and Repurchase Agreements, Danmarks Nationalbank, *Monetary Review*, November 1995.

<sup>3</sup> The certificates of deposit are thus not included in the collateral basis for intraday credit in euro.

<sup>4</sup> Attempts at pledging and execution are regarded as non-performance, and under Danmarks Nationalbank's provisions for certificates of deposit this entitles Danmarks Nationalbank immediately to require premature redemption of the certificates of deposit at market price.

holder. In other words, collateral in the certificates of deposit is based on an agreed automatic setoff.<sup>1</sup>

The certificates of deposit do not serve as collateral for e.g. monetary-policy loans. That would require that the proceeds from sale/redemption of the certificates of deposit be credited to a blocked account, and not released until the monetary-policy loan had been redeemed. This would prevent one of the main purposes of the certificates of deposit, i.e. to serve as a basis for settlement of liquidity among the banks, and would also have an undesirable liquidity effect.

## CROSS-BORDER COLLATERAL

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Danmarks Nationalbank's collateral basis for both krone-denominated and euro-denominated credit is basically limited to bonds denominated in Danish kroner, registered at VP and listed on the Copenhagen Stock Exchange. By far the largest part of the collateral basis is thus issued, registered and listed in Denmark. On the basis of a specific assessment Danmarks Nationalbank may, however, decide to accept other assets as collateral for intraday credit.

### Krone-denominated credit

Danmarks Nationalbank has concluded correspondent agreements with Sveriges Riksbank and Norges Bank entailing that branches in Denmark of Swedish and Norwegian banks can obtain intraday credit in Danish kroner from Danmarks Nationalbank on the basis of respectively Swedish and Norwegian government securities pledged to Danmarks Nationalbank.<sup>2</sup> Sveriges Riksbank and Norges Bank act as correspondent banks and handle the practical issues related to the pledging of securities in accordance with respectively Swedish and Norwegian law.<sup>3</sup>

In addition, a new type of cross-border collateral between the Scandinavian central banks was established in the spring of 2003, Scandinavian Cash Pool (SCP). Unlike the above correspondent agreements SCP is

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<sup>1</sup> See e.g. Lars Hedegaard Kristensen in *Studier i erhvervsfinansieringsret (Studies in business finance law)*, (2003) p. 289 ff. on the act of perfection in connection with pledge and agreed access to setoff and, by the same author, in the article *Sivende Pant (Shrinking collateral)* reprinted in *Festskrift til Juridisk Klub 1988-1998 (Festschrift for the Law Club 1988-1998)*, p. 72 ff. Finanssektorens Uddannelsescenter.

<sup>2</sup> The agreements are reciprocal, and branches of Danish banks in respectively Sweden and Norway can likewise obtain intraday credit from Sveriges Riksbank and/or Norges Bank on the basis of Danish government securities deposited at VP and pledged to the two countries' respective central banks.

<sup>3</sup> A securities account is opened in the Swedish and/or Norwegian settlement centre(s) and a corresponding yield account with the respective central bank(s), both pledged to Danmarks Nationalbank and managed by the respective central bank(s). When the collateral has been created, the relevant central bank notifies Danmarks Nationalbank of the securities pledged and their nominal value. There are also fixed procedures in relation to withdrawal, as well as interest and withdrawal amounts. The latter are initially deposited to the pledged yield account. Correspondingly, Danish participants hold a pledged yield account at Danmarks Nationalbank for each VP securities account pledged to Sveriges Riksbank or Norges Bank.

automated<sup>1</sup>, so that there is a very brief time span from the establishment of the collateral in one Scandinavian country to the granting of intraday credit in another.<sup>2</sup>

As the name indicates, SCP is based on provision of collateral in cash, in this context defined as balances in accounts at one of the three Scandinavian central banks. Branches or subsidiaries in Denmark of Swedish and Norwegian credit institutions can obtain intraday credit in Danish kroner from Danmarks Nationalbank on the basis of balances in Swedish kronor and Norwegian kroner at respectively Sveriges Riksbank and Norges Bank which have been pledged to Danmarks Nationalbank, and likewise branches or subsidiaries of Danish credit institutions can obtain intraday credit in Swedish kronor and Norwegian kroner from respectively Sveriges Riksbank and Norges Bank on the basis of pledged account balances in Danish kroner with Danmarks Nationalbank.

While the manual correspondent agreements are based on separate securities accounts pledged to the respective Scandinavian central banks providing the credit, SCP is in reality an extension of the existing arrangement for intraday credit in Danish kroner, since the account holder at Danmarks Nationalbank draws on its current account against collateral in the pledged VP securities account and certificates of deposit, cf. above concerning traditional pledge of securities and certificates of deposit, after which the cash amount is deposited in an SCP Pledged Collateral Account, which is pledged – as the name indicates. This makes it easier to determine the collateral value for Sveriges Riksbank and Norges Bank, which solely need to calculate a suitable exchange-rate haircut on the basis of the balance of the SCP Pledged Collateral Account. In addition, the number of pledged VP securities accounts is reduced, and certificates of deposit are included in the collateral basis.

Under a separate deed of pledge between the credit institution and the lender (Sveriges Riksbank or Norges Bank) the SCP Pledged Collateral Account is pledged to the relevant central bank. The deed of pledge is typically governed by the national law of the lender, i.e. Swedish or Norwegian law, whereas under the general conflict of laws rules the act of perfection is governed by the law in the debtor's country of domicile, i.e. Danish law, since Danmarks Nationalbank is the debtor in relation to the cash balance in the SCP Pledged Collateral Account.<sup>3</sup>

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<sup>1</sup> Establishment of an automated system for provision of cross-border collateral between the Scandinavian central banks should be seen against the background of the Scandinavian currencies joining CLS on 8 September 2003. A number of Scandinavian banks participating in CLS have accepted to be liquidity providers in more than one Scandinavian currency. A Swedish bank which is a liquidity provider in Danish kroner will thus need a branch or subsidiary in Denmark in order to obtain krone liquidity against collateral in Sweden, and vice versa.

<sup>2</sup> Typically less than 1 minute.

<sup>3</sup> A cash balance is a simple claim where the act of perfection is notification, cf. Section 31 of the Debt Instrument Act, and notification basically deprives the pledgor of payment authority, cf. Section 29

Correspondent agreements have been concluded between the three Scandinavian central banks laying down detailed procedures, including those governing default.

The system functions in the same way when Danmarks Nationalbank lends Danish kroner<sup>1</sup>, since the Swedish and Norwegian legal provisions concerning e.g. perfection and realisation by and large correspond to the Danish provisions<sup>2</sup>.

### **Euro-denominated credit**

In relation to intraday credit in euro the ECB and the EU central banks have established a scheme similar to the Nordic correspondent bank agreements, cf. above, known as the correspondent central banking model (CCBM), under which central banks in non-euro area EU member states can act as correspondent banks for euro area central banks, and vice versa.

In practice, up until 1 July 2003 the scheme entailed that Danish credit institutions with branches or subsidiaries in euro-area member states have been able to obtain intraday credit in euro from certain central banks<sup>3</sup> in the euro area against collateral in Danish securities<sup>4</sup>, while branches and subsidiaries of foreign credit institutions can obtain intraday credit in euro from Danmarks Nationalbank against collateral in securities deposited in the euro area and approved by the ECB, known as CCBM assets.

As from 1 July 2003 the Eurosystem solely accepts securities deposited in the euro area, so that CCBM is only relevant for collateral in CCBM assets vis-à-vis Danmarks Nationalbank. However, this option is not used in practice since it is less expensive to obtain intraday credit in euro from the Eurosystem and send the liquidity to the Danish branch/subsidiary, than to establish and finance a loan facility directly in Denmark.

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of the Debt Instrument Act. Sveriges Riksbank and Norges Bank notify Danmarks Nationalbank by submitting the relevant deeds of pledge.

<sup>1</sup> The underlying collateral system at Sveriges Riksbank and Norges Bank is in a sense irrelevant to Danmarks Nationalbank, since the collateral pledged to Danmarks Nationalbank solely comprises the cash balances at respectively Sveriges Riksbank and Norges Bank.

<sup>2</sup> Pursuant to STA Section 57b(2) combined with (3), the provision of collateral in the form of securities or cash account balances to EU central banks can be realised immediately if a prior agreement to this effect has been concluded. This is a standard condition in the deeds of pledge, so that the 8-day provision in the Administration of Justice Act Section 538a(2) need not be observed when realising (taking possession of) the pledged cash account balance at Danmarks Nationalbank. The same applies when Danmarks Nationalbank provides krone-denominated credit against cash balances at Sveriges Riksbank and Norges Bank, since the legal status in Norway and Sweden is basically the same, particularly after the implementation of the finality directive.

<sup>3</sup> It was up to the individual euro area central banks to accept collateral under CCBM.

<sup>4</sup> The securities comprise the same securities as can be pledged for krone-denominated credit from Danmarks Nationalbank, i.e. mainly government and mortgage-credit securities denominated in Danish kroner, registered at VP and listed on the Copenhagen Stock Exchange, but for administrative reasons limited to securities with an outstanding circulation of at least kr. 10 billion.

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# Reasons for the Upswing in 1993-94, How Significant Was Fiscal Policy?

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*Niels Lynggård Hansen and Erik Haller Pedersen, Economics*

## **INTRODUCTION AND CONCLUSION**

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The Danish government's austerity measures (the "potato diet") and the reduction of the tax value of the interest deduction entitlement in the mid-1980s had a strong contractive effect and were followed by a sustained period of low growth in the Danish economy. Growth did not really pick up again until mid-1993, when a period of high growth set in, lasting until the end of the decade. The upswing in 1993 and 1994 has often been attributed to a kick-start of the economy via a temporary relaxation of fiscal policy after a new government took office in January 1993. However, the start of the upswing also coincided with a significant international fall in interest rates, leading to the first major wave of conversions of mortgage-credit loans. This was to become a recurring event in the following 10 years. This article seeks to quantify the fiscal-policy relaxation as well as the direct and indirect effects of the fall in interest rates, in order to determine the extent to which each of these factors contribute to explaining the development.

It is concluded that the onset of the boom in the 1990s was just as much attributable to the significant fall in interest rates and its direct impact on consumption and investments as to the expansionary fiscal policy. At the same time there was a marked shift in mood among consumers, resulting in a stronger increase in consumption than can be explained by Denmark's Nationalbank's economic model, Mona. This shift in mood was probably also related to the wave of conversions, the economic effect of which is not immediately captured by the model. Via the conversions, the fall in interest rates thus also had an indirect impact on the economy.

## **THE ECONOMIC AND FINANCIAL BACKGROUND**

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After a sustained period of stagnation in the Danish economy, growth really took off in the 2nd half of 1993 and continued throughout 1994,

GROWTH IN GDP AND SELECTED SUBCOMPONENTS

Table 1

Per cent, quarter-on-quarter	GDP	Private Consumption	Public Consumption	Housing Investments	Business Investments	Exports	Imports
1993 Q1 .....	-0.2	-3.0	-0.4	1.8	20.0	-2.9	-0.5
1993 Q2 .....	-0.9	0.7	2.8	1.8	-10.4	0.2	-3.0
1993 Q3 .....	0.1	1.9	0.8	10.3	-12.9	5.0	4.7
1993 Q4 .....	2.1	1.8	0.6	-1.6	5.6	1.4	2.5
Average for 1993 .....	-0.0	0.5	4.1	6.3	-8.3	-1.5	-2.7
1994 Q1 .....	1.4	2.8	0.9	1.8	5.8	-2.4	3.7
1994 Q2 .....	2.8	1.5	1.1	3.4	5.4	6.5	4.6
1994 Q3 .....	0.2	0.0	-0.3	-1.1	4.0	1.7	1.7
1994 Q4 .....	1.4	0.1	-0.4	3.2	6.1	-0.1	1.4
Average for 1994 .....	5.5	6.5	3.0	8.9	7.6	7.0	12.3
1995 Q1 .....	0.8	-0.2	0.8	2.5	3.5	2.7	2.4
1995 Q2 .....	-0.9	0.7	0.9	3.0	-2.6	-2.4	0.1
1995 Q3 .....	1.1	1.0	1.1	0.2	6.4	-0.5	2.1
1995 Q4 .....	0.7	-0.1	1.0	3.1	3.2	-0.0	2.5
Average for 1995 .....	2.8	1.2	2.1	8.5	13.9	2.9	7.3

Source: Statistics Denmark.

when the annual rate of growth in GDP in fixed prices reached 5.5 per cent, cf. Table 1. The subcomponents which reflect this change most clearly are private consumption and investments. This indicates that interest rates played a role, although the increase in business investments in particular also reflects the generally higher activity.

IMPACT OF FISCAL POLICY ON ACTIVITIES OVER A NUMBER OF YEARS, 1988-1995

Table 2

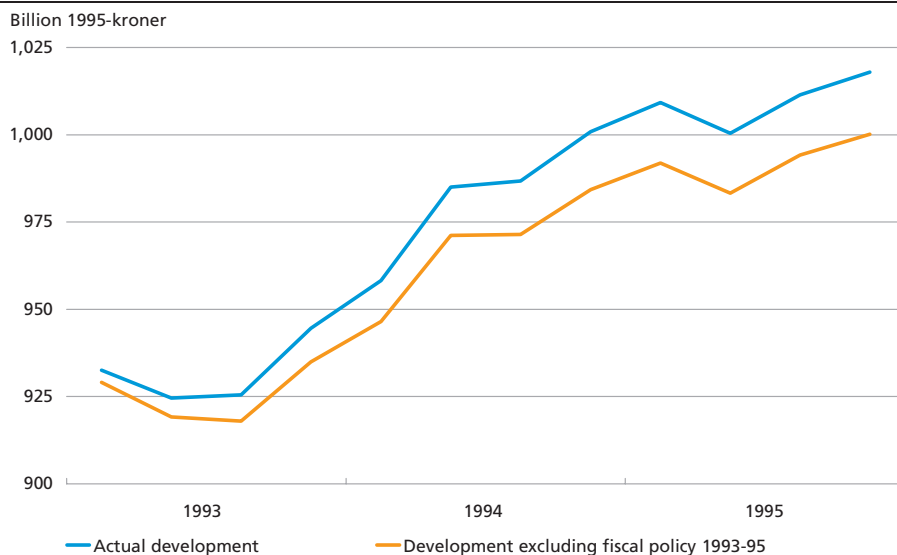
Impact in the year	1988	1989	1990	1991	1992	1993	1994	1995
<i>Impact of policy year</i>	Percentage points							
1988 .....	-0.3	-0.4	-0.4	-0.4	-0.3	-0.2	-0.1	0.0
1989 .....	-	0.6	0.9	1.1	1.1	1.0	0.8	0.7
1990 .....	-	-	0.1	0.7	1.0	1.0	0.9	0.8
1991 .....	-	-	-	0.6	1.0	1.2	1.1	0.9
1992 .....	-	-	-	-	0.3	0.5	0.5	0.5
1993 .....	-	-	-	-	-	0.7	0.7	0.5
1994 .....	-	-	-	-	-	-	0.8	1.1
1995 .....	-	-	-	-	-	-	-	0.1
Aggregate impact .....	-0.3	0.2	0.6	2.0	3.1	4.0	4.7	4.6
Contrib. to GDP growth ...	-0.3	0.5	0.4	1.4	1.1	0.9	0.7	-0.1

Note: The figures indicate the impact of the fiscal policy for a given policy year on the level of GDP in the same and the subsequent years. The first-year impact is known as the fiscal effect and can be seen as the diagonal in the Table. The figures in the last line show the accumulated impact of the fiscal policy on GDP growth and are calculated as the differential between the figures in the penultimate line, which in turn are the sums of the columns.

Source: Ministry of Finance, Financial Survey 2000, April 2000.

## GROSS DOMESTIC PRODUCT

Chart 1



Note: The annual fiscal effects as calculated by the Ministry of Finance are broken down by quarters.

Growth in public consumption fluctuated, but with an annual rate exceeding 4 per cent it helped to sustain GDP growth in 1993 and the first half of 1994. This supports the significance of the kick-start.

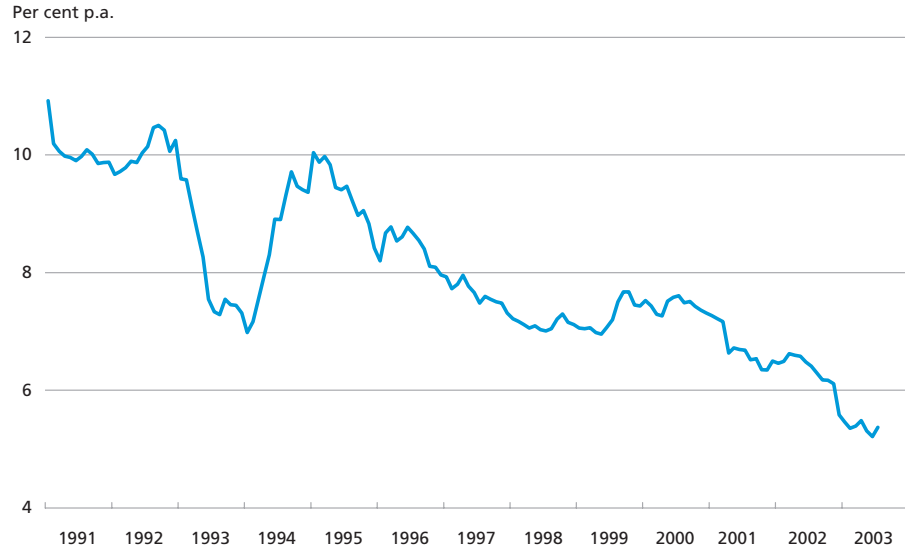
Fiscal policy was expansionary throughout the period from 1989 to 1995, cf. the fiscal effects (the diagonal) in Table 2. The fiscal effect, i.e. the first-year GDP impact of the fiscal policy calculated using the model, was only marginally greater in 1993 and 1994 than in the preceding years. When the accumulated effects are considered, cf. the last line of the Table, the fiscal policy seen over the above time line was actually more expansionary in 1991 and 1992 than in 1993 and 1994. Chart 1 shows the impact on GDP of fiscal policy in the years 1993-1995.

### The fall in interest rates

As Table 2 and Chart 1 show, the fiscal policy contributed to the growth acceleration in 1993 and 1994. However, the growth was also stimulated by a significant international fall in long-term interest rates, which in Denmark was reinforced by a narrowing of the interest-rate differential vis-à-vis Germany. All in all, the long-term mortgage rate fell from more than 10 per cent in the autumn of 1992 to just over 7 per cent at the end of 1993, cf. Chart 2. During 1994 interest rates increased again, and were back at 10 per cent by the close of the year. The fall in interest rates in 1993 triggered a large conversion wave and an increasing trend in housing prices, which has lasted to date.

## LONG-TERM MORTGAGE RATE

Chart 2



### STATUTORY BACKGROUND TO THE CONVERSION WAVE

Since the introduction of the minimum-coupon-rate rule<sup>1</sup> in the mid-1980s, mortgage-credit loans have been financed almost entirely via bonds issued at a price just below par. Since the bonds are typically callable, i.e. they can be redeemed at par, conversion becomes attractive if interest rates drop sufficiently. The extent of the conversion wave in 1993-94 was, however, not only attributable to the fall in interest rates, but also to a number of preceding cases where mortgage-credit legislation was relaxed, as well as amendments to tax legislation.

New provisions in 1992 introduced general access to supplementary mortgage credit within 80 per cent of the property value, as opposed to the previous conditions related to the purpose of the loan, i.e. loans could only be granted for improvement or maintenance of owner-occupied homes or in connection with change of ownership. In the spring of 1993 access to 30-year annuity loans for owner-occupied homes via cash loans in connection with remortgaging and supplementary mortgaging was also reintroduced. The requirement to use 20-year mixed loans<sup>2</sup>, which had been introduced with the austerity measures in 1986, was thereby repealed.

<sup>1</sup> For a more detailed description of the minimum-coupon-rate rule, see Mads Gosvig and Jeppe Ladekarl, The Minimum Coupon Rate and the 4-Per-Cent Market, Danmarks Nationalbank, *Monetary Review*, 1st Quarter 1998.

<sup>2</sup> Mixed loans, which became compulsory for home financing in connection with the austerity measures introduced in 1986, combined a 60 per cent annuity loan and a 40 per cent serial loan. This structure entailed that the repayments and thereby the instalments were higher than for pure annuity loans at the start of the loan period. The objective was to stimulate savings.

In mid-1993, with effect from 1 January 1994, a temporary opportunity was introduced to retain the tax deductibility of capital losses on previously raised cash loans financed via bonds at a nominal interest rate significantly below the market rate when the loan was redeemed in connection with the raising of a new loan. This made it possible to convert the cash loans raised at high interest rates in the first half of the 1980s.

The tax reform in 1993, however, also led to a reduction of the tax value of the interest deduction entitlement, which makes borrowing more expensive, all other things being equal.

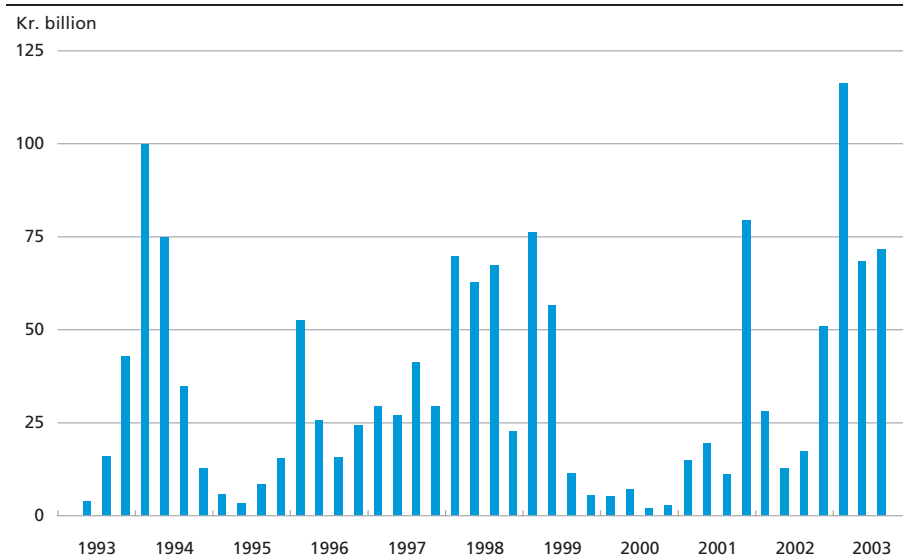
### THE CONVERSION WAVE

From mid-1993 to end-1994 mortgage-credit loans totalling approximately kr. 300 billion were converted, cf. Chart 3. For an average household this implied interest savings in the range of 1½ per cent of disposable income, cf. Box 1. The immediate consumption effect may, of course, be greater than the annual interest saving, since this is achieved every year throughout the maturity of the loan.

In connection with the conversions many households took the opportunity to extend the maturity of their mortgage-credit loans. This reduces the current repayments, but increases the loan-servicing period.

CONVERSIONS OF MORTGAGE-CREDIT LOANS

Chart 3



Note: Extraordinary redemptions via buy-back of bonds in the market are not included. This is one reason that the figures shown here deviate from the conversions stated in Danmarks Nationalbank's MFI statistics.

Source: Copenhagen Stock Exchange.

## THE HOUSEHOLDS' INTEREST SAVINGS FROM CONVERSION

Box 1

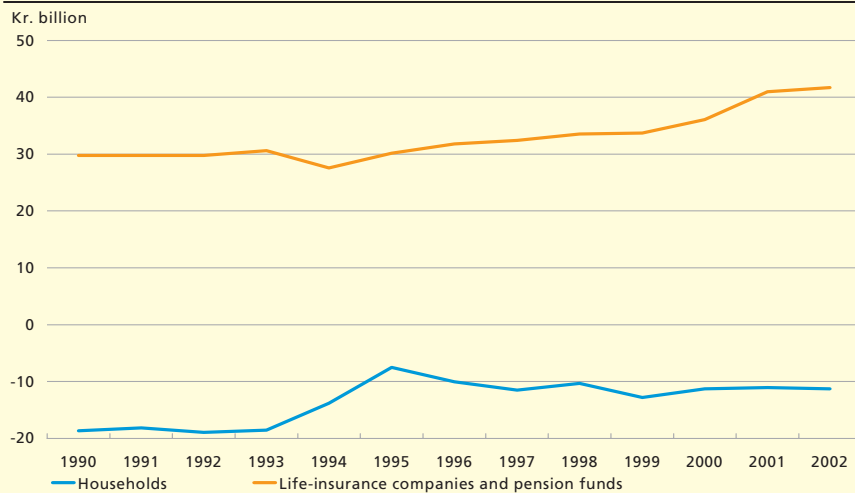
During the conversion wave in 1993-94 loans with a coupon rate of 9, 10, 11 or 12 per cent were typically converted into 6-per-cent cash loans. The borrower hereby achieved interest savings until the maturity of the new loan. The total converted loan volume was approximately kr. 300 billion, of which 65 per cent related to households or agricultural holdings. The result was a decline in the households' interest expenditure by kr. 10 billion from 1993 to 1995, equivalent to 1½ per cent of the households' disposable income, cf. Chart 4. However, the interest savings are not entirely attributable to conversions, since interest expenditure for e.g. bank loans also fell. It can be seen that the interest savings associated with later conversion waves were considerably lower.

The borrower's interest gain from conversion is offset by the lender's loss in that high-yield bonds are redeemed and the proceeds must be reinvested at a lower yield. Lenders are to a large extent pension companies and pension funds and thus ultimately the households themselves. Even though conversion is thus merely a redistribution of assets and income between borrowers and lenders, it may have an impact on consumption since households are presumed to attach more importance to the savings on the regular mortgage payments than the reduction in their pension savings, which will not be paid out until well into the future.

The conversions in 1993-94 have an immediate positive effect on the public balance. The reason is partly the real-interest tax applying at that time, by which bond redemptions led to earlier tax payments, and partly the lower interest deduction entitlement for the households as a result of their lower interest expenditure. The public proceeds from the pension funds' interest income also declined, but in this case the tax rate was typically lower than the rate at which the households could deduct interest expenditure, so that the immediate net impact of the reduced interest flows on the public balance was positive. However, the structure of the real-interest-tax legislation meant that in the longer term a drop in interest rates would lead to lower real-interest-tax proceeds for the public sector as a result of lower real yields in the tax-liable institutions.

## INTEREST INCOME, NET, OF HOUSEHOLDS AND PENSION FUNDS

Chart 4



Source: Statistics Denmark, National Accounts.

The conversions also meant that some mixed loans were replaced by pure annuity loans, where the repayment burden is lighter at the start of the loan period. The aggregate increase in households' liquidity as a result of the extension of maturity and change of loan type is deemed to have been on the same scale as the interest savings.

The fall in interest rates and the easing of legislation caused some households to increase their mortgage debt. The impact on consumption of this supplementary borrowing is potentially stronger than from extending maturity or a change of loan type, since the borrower has (significant) proceeds at his disposal in return for a heavier interest and repayment burden for the maturity of the loan. The volume of supplementary loans raised was not, however, large enough to prevent the total free mortgageable value of the housing stock from increasing significantly from 1993 to 1995 in step with the rising property prices.

## THE HOUSEHOLD SECTOR'S FINANCIAL BALANCES

The expansionary effect of the conversion wave in 1993-94 is dependent on the extent to which the increase in households' liquidity causes them to increase their consumption or to reduce other debt.

From 1993 to 1994 there was a marked shift in the households' net borrowing/net lending, i.e. the difference between savings and investments, cf. Table 3. From a savings surplus of kr. 10 billion in 1993 the balance deteriorated to a savings deficit, i.e. a financing requirement, of the same scale in 1994. This shift was a result of increased consumption and thereby lower savings.

Table 4 shows how the financing requirement was covered. Even though consumption rose, by no means all mortgage-credit loans were used to finance increased consumption. A significant proportion of the

THE HOUSEHOLDS' SAVINGS/INVESTMENT BALANCE				Table 3
Kr. billion	1992	1993	1994	1995
Income .....	486.5	490.9	515.7	547.3
Consumption .....	439.3	450.1	493.8	509.5
Savings .....	47.2	40.8	21.9	37.8
Investments and capital transfers .....	29.7	30.6	33.0	42.7
Net borrowing/net lending .....	17.5	10.2	-11.1	-4.9

Note: Income is defined as the households' disposable gross income plus changes in the households' net assets in pension funds, cf. Statistics Denmark, National Accounts. Savings are income less consumption. Net borrowing/net lending is equal to gross savings less investments and capital transfers. A positive value for this item shows that there is a savings surplus and thus a need to place funds, while sign negative indicates a financing requirement.

Source: Statistics Denmark, National Accounts.

THE HOUSEHOLDS' FINANCIAL ACCOUNTS

Table 4

Kr. billion	Net borrowing/ net lending	Increase in			
		Bank deposits	Mortgage-credit loans	Bank loans	Residual
1992 .....	17.5	8.7	5.0	-9.2	4.6
1993 .....	10.2	12.8	33.9	-17.8	13.5
1994 .....	-11.1	-11.2	19.4	-3.3	16.2
1995 .....	-4.9	14.7	24.4	7.1	11.9

Note: All figures in the Table are flows. Net borrowing/net lending, i.e. the households' savings less investments, is set off by changes in bank deposits less mortgage-credit loans less bank loans plus residual. The residual indicates that major asset items on the households' balance sheet have been omitted, primarily net purchase of bonds, shares and investment certificates, as well as net ingoing payments to and yields from pension funds (technical insurance reserves). A comprehensive statement of the households' financial accounts is published by Statistics Denmark, but is only available from 1995.

Source: Statistics Denmark and Danmarks Nationalbank.

loans raised during the conversion wave were used to reduce bank loans. A proportion of the mortgage-credit loans in 1993 were initially placed in bank accounts (increase in bank deposits) and then withdrawn during the following year (decrease in bank deposits).

## QUANTIFICATION OF THE SIGNIFICANCE OF THE FALL IN INTEREST RATES

To gain an idea of the significance of the drop in interest rates, a number of simulations have been performed using Danmarks Nationalbank's economic model, Mona. The main activity effects of a drop in interest rates are seen in housing and business investments, as well as private consumption, which are especially influenced via the derived effect of the drop in interest rates on cash prices for owner-occupied homes and thereby on the housing assets<sup>1</sup>.

If the bond yield is maintained throughout 1993 and 1994 at the level at end-1992, i.e. 10.5 per cent, GDP growth would have been ½-1 per cent lower in 1994. Private consumption is affected to a slightly lesser degree, cf. Chart 5.

The increase in private consumption from 1993 to 1994 is significantly higher than predicted by Mona's consumption relation<sup>2</sup>. This is seen from the positive adjustment term<sup>3</sup>, cf. Chart 6. Likewise, negative adjustment terms in the preceding years indicate that consumption in the late 1980s and early 1990s developed more weakly than shown by the

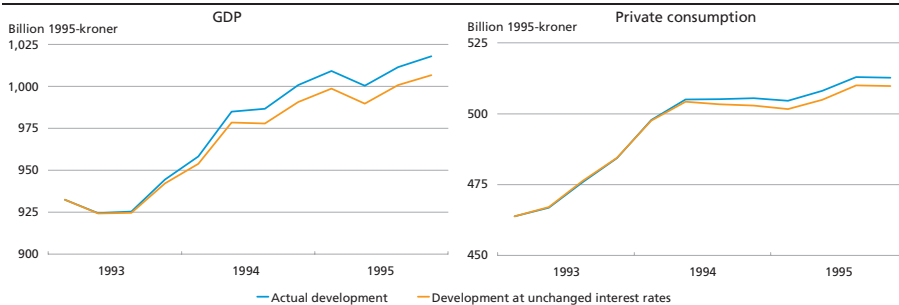
<sup>1</sup> The impacts on the economy of an adjustment of interest rates is documented in *Monetary Policy in Denmark*, 2nd edition, Danmarks Nationalbank, 2003.

<sup>2</sup> In Mona's consumption relation, consumption is primarily explained by real income and real assets.

<sup>3</sup> The adjustment terms in the consumption function indicate the difference between the actual development in consumption and the development predicted by the model. A positive adjustment term thus indicates that consumption in the period in question was higher than the model's consumption equation can explain.

## THE IMPACT OF THE FALL IN INTEREST RATES ON GDP AND PRIVATE CONSUMPTION

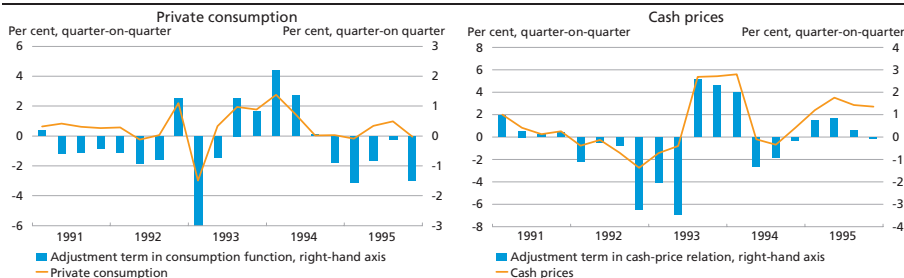
Chart 5



Source: Own calculations using the Mona model.

## ADJUSTMENT TERM IN CONSUMPTION AND CASH-PRICE RELATIONS

Chart 6

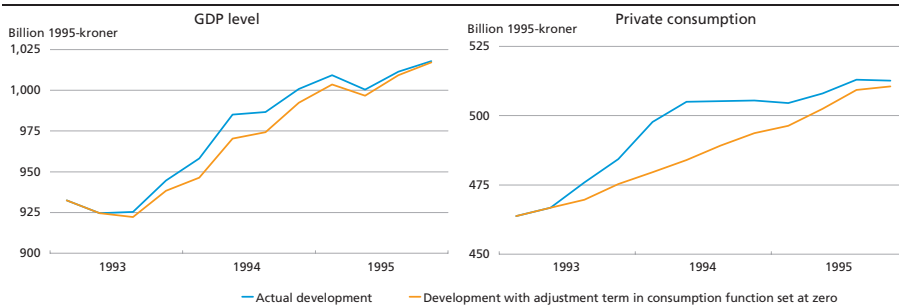


Note: The adjustment terms show the difference between the actual development and the development predicted by the model.

Source: Own calculations using the Mona model.

## IMPACT ON GDP AND PRIVATE CONSUMPTION OF SHIFT IN MOOD

Chart 7



Note: Own calculations using the Mona model.

model. Cash prices for owner-occupied homes also reacted more strongly than predicted by the model's cash-price relation, while the increase in investments was in step with the investment relation.

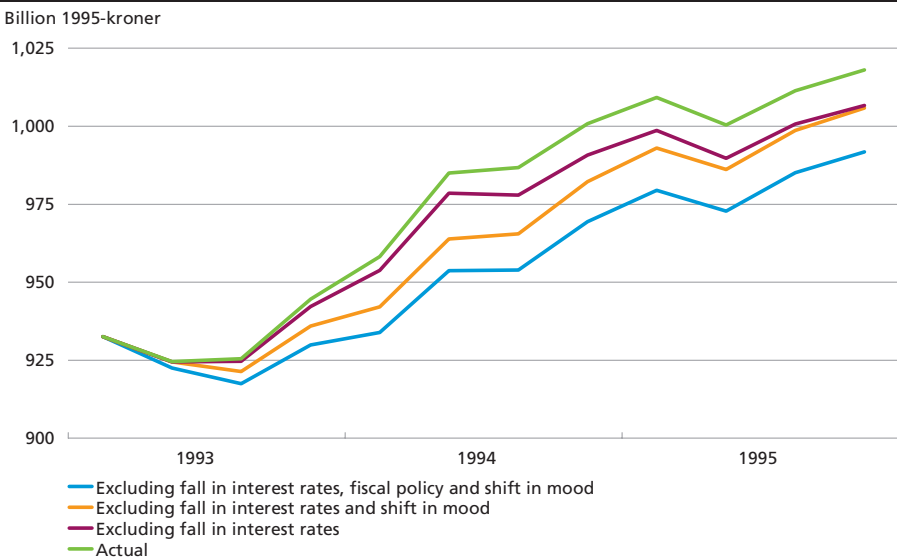
The increase in consumption from mid-1993, which is the most important single explanation for the upswing, is thus mainly attributable to a shift in consumer moods which is not captured by the model's relations. It is not immediately possible to state whether this shift in mood was triggered by the fall in interest rates, the expansionary fiscal policy, or something else.

If the adjustment term in Mona's consumption function is set at zero from the 3rd quarter of 1993, when the upswing began and when the new government had presented its policies, to the 1st quarter of 1995, an estimate of the effect of the shift in mood on private consumption can be obtained. Chart 7 illustrates that the shift in mood corresponded to additional consumption of approximately kr. 15 billion (the difference between the blue and orange lines). The effect on GDP was in the same range.

The calculations operate with three explanations for the growth acceleration in 1993-94: fiscal policy, the drop in interest rates and an exogenous shift in mood in relation to the model. The result is summarised in Chart 8 with regard to the impact on GDP. If growth rates are considered, Table 5 shows that of the 5.5 per cent growth in 1994, 0.7 percentage points can be attributed to the direct effect of the fall in interest rates, which is in the same range as the effect from the fiscal policy,

FACTORS BEHIND THE UPSWING IN 1993-94, IMPACT ON GDP

Chart 8



CONTRIBUTION TO GDP GROWTH, YEAR-ON-YEAR Table 5

Percentage points	Contribution from			Actual GDP growth
	Fiscal policy	Fall in interest rates	Shift in mood	
1993 .....	0.9	0.1	0.3	0.0
1994 .....	0.8	0.7	1.0	5.5
1995 .....	0.3	0.3	-0.9	2.8

Note: The contribution from "shift in mood" is calculated by setting the adjustment term in the consumption function at zero.

while the shift in mood explains approximately 1.0 percentage point. The contributions to growth from the model's other exogenous factors are not included.

The impact of the conversions on the economy is not directly included in the model. The income concept in the consumption function comprises the entire private sector, including the pension funds, i.e. the households' direct interest savings from conversion are offset by lower interest income in the pension funds, to the extent that they own the mortgage-credit bonds that are redeemed. In addition, the increase in liquidity resulting from the extension of maturity, change of loan type or higher mortgaging of owner-occupied homes is not captured by the model. The effect of the conversion wave is thus included in the residually calculated "shift in mood" in Table 5 rather than in the "interest-rate effect", which only shows the direct interest-rate effect.

The calculation of the "fiscal effect" also requires a number of method-related choices. For instance, the decision in 1993 to amend legislation so that old cash loans could be converted, cf. above, is typically not included on calculating the fiscal effect. The possible derived effect of this amendment on consumption is thus reflected in the "shift in mood". So this entity also comprises the effect of measures that are equivalent to fiscal policy.

In conclusion it is found that an expansionary fiscal policy was by no means the only explanation for the upswing in the Danish economy in 1993-94.



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# The Budgetary Situation in Germany and France

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*Ulrik Bie and Lars Mayland Nielsen, Economics*

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## INTRODUCTION

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The budget deficits of Germany and France have attracted considerable attention in the past year. The deficits of the two largest euro area member states exceed the limit of 3 per cent of GDP stipulated in the EU Treaty. At the same time, the development in the deficit constitutes non-compliance with the objective in the Stability and Growth Pact concerning balance in the medium term.<sup>1</sup> With regard to Germany, the situation is made all the more politically precarious by the fact that inclusion of the 3-per-cent limit in the Treaty and the Stability and Growth Pact in 1997 was the result of strong German pressure.

In historical terms, the deficits of Germany and France are not extraordinary, and an international upswing may contribute to reducing them. It is problematic, however, that in the future the ageing of the population will exert increasing pressure on expenditure. Consolidation of public finances is required now in order to prevent unsound budgetary development or dramatic measures at a later stage. This article examines the reasons for the substantial deficits occurring, as well as some of the economic factors of significance to sustainable budgetary development in the coming years.

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## THE COURSE OF PUBLIC FINANCES IN RECENT YEARS

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### Germany

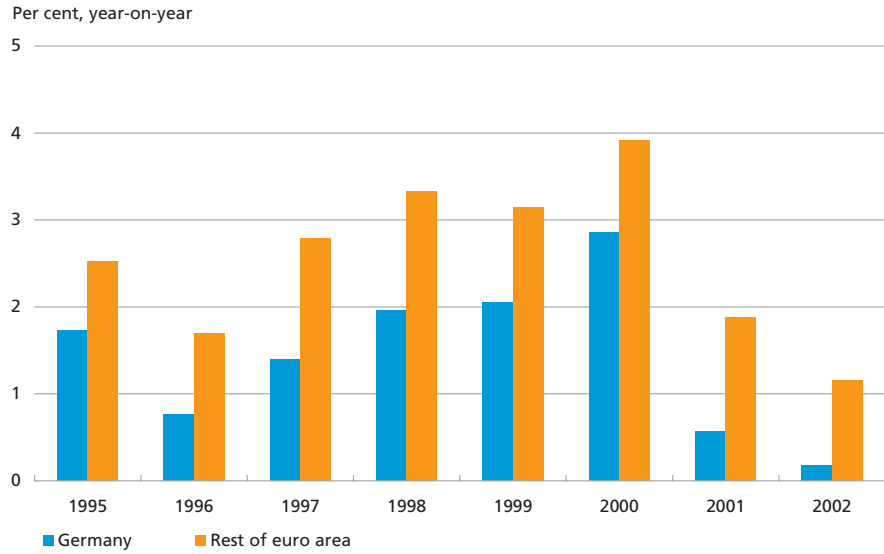
Germany's budgetary problems are often attributed to reunification, which entailed unexpected high costs for improving social welfare schemes and implementing ambitious labour-market measures in former East Germany. The economic boom in the first years after reunification ended in 1992, and since the mid-1990s growth in Germany has been lower than in the rest of the euro area, despite increasing growth from

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<sup>1</sup> This is described in further detail in Niels Bartholdy and Lars Falkenberg, *Stabilitets- og vækstpagten status 2003 (The Stability and Growth Pact, Status 2003 - in Danish only)*, Danmarks Nationalbank, *Monetary Review*, 2nd Quarter 2003.

GDP GROWTH IN GERMANY AND REST OF EURO AREA

Chart 1

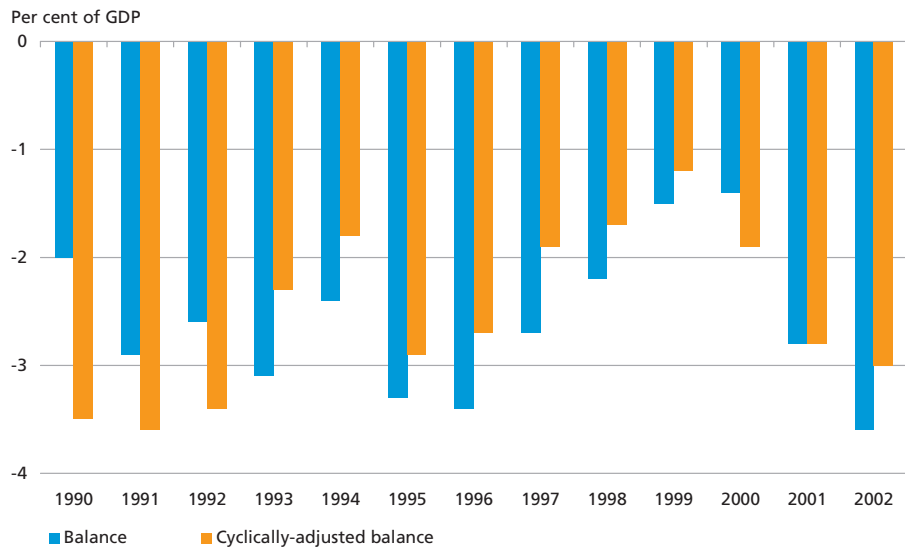


Source: OECD (2003a).

1996 to 2000, cf. Chart 1. Together with a tightening of fiscal policy higher growth led to an improvement of public finances from a deficit of 3.3 per cent of GDP in 1995 to a deficit of 1.5 per cent of GDP in 1999, cf. Chart 2.

PUBLIC BUDGET BALANCE IN GERMANY

Chart 2



Source: OECD (2003a).

As from 2001, public finances in Germany deteriorated, despite almost full compliance with the government spending targets in the stability programmes. The problems observed in recent years are mainly related to revenue issues. To a certain degree this is due to the government's implementation of a tax reform in mid-2000 entailing tax cuts in the period 2001-2005 without corresponding expenditure restraint. This entailed an easing of fiscal policy at a time when high future growth was expected. Fiscal policy initially appeared to be procyclical, but became countercyclical when Germany went into a recession in 2001. The overall deficit rose by 1.4 per cent of GDP in 2001, with half of the increase attributable to fiscal policy, and the other half to a weaker economic environment. In 2002 and 2003 the German government underestimated the extent of the economic slowdown and thereby overestimated revenues. The visible requirement for budget consolidation has hereby diminished. The government deficit rose to 3.6 per cent of GDP in 2002 and is not likely to be any lower in 2003.

In Germany, public administration is divided between the central government, state governments and local governments. In addition, the German social-security schemes, i.e. health, unemployment and pension insurance, as well as social programmes, account for more than 50 per cent of total public spending. In principle, the individual elements of public administration are autonomous, but the economic basis for this autonomy is affected by an extensive system of equalisation of regional differences. The *Finanzplanungsrat* undertakes co-ordination between central, state and local governments. As a consequence of the equalisation schemes the state and local governments have very limited scope for adjusting individual taxes and public benefit provision. Variations in consumption preferences are therefore not reflected, while relatively constant revenue flows make it more difficult to manage government spending effectively, cf. OECD (2001). In an attempt to reduce the overall deficit, in 2002 a national stability pact was introduced for central, state and local governments setting out expenditure targets for the various layers of the administration and prescribing that progress be made towards balance in the medium term.

The social-security schemes are financed via earmarked social contributions, and rising expenditure has been covered via higher contributions and transfers from the central government. As in many other countries especially health-sector expenditure has increased strongly in recent years, due to such factors as insufficient control and poor incentive structures. Furthermore, the unclear division of responsibilities has contributed to inefficient expenditure control. The central government

stipulates the legal framework, health-insurance schemes pay current hospital costs, state governments undertake hospital investments, and local governments provide local care services. An agreed health reform from July 2003 attempts to rectify some of these inconsistencies, cf. below.

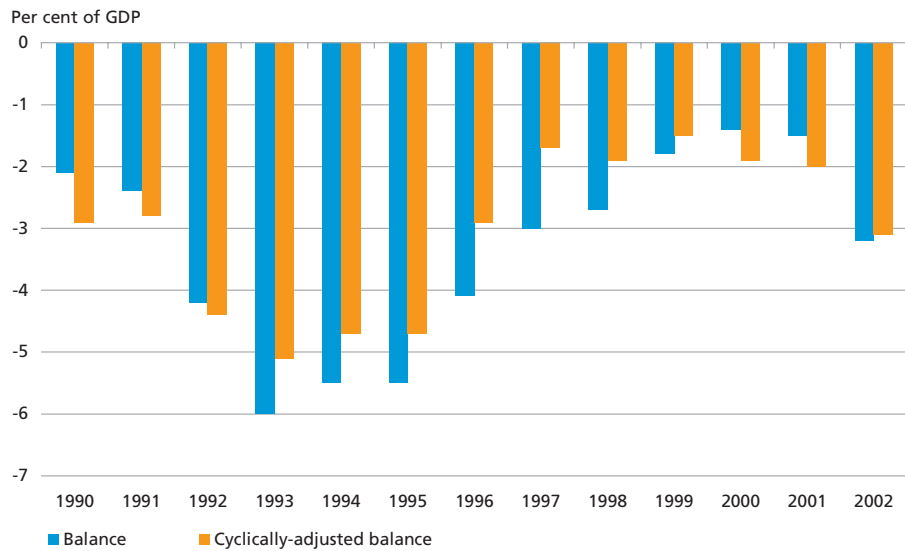
## France

From 1994 to 1997 the government in office significantly tightened fiscal policy following large deficits at the beginning of the 1990s, cf. Chart 3. Several measures were taken to tighten budget-control mechanisms and increase taxes, while the government also sought to introduce a number of extensive reforms, e.g. pension reforms.

The tightening policy was an exception from the general tendency to utilise cyclical upswings to introduce new measures entailing permanent deterioration in the budget balance via tax cuts and/or the expansion of social programmes (see OECD, 2003b). Fiscal policy has thus tended to be procyclical when the economic climate has been favourable. A case in point is the phasing-in of the 35-hour working week as from 1998. Together with increasing growth, cf. Chart 4, this reduction of working hours led to an increase in employment by 8 per cent in the period 1997-2000. According to the IMF calculations (2002b) the positive effects of higher employment were offset by higher unemployment benefit, expansion of income-related social programmes, and higher average

PUBLIC BUDGET BALANCE IN FRANCE

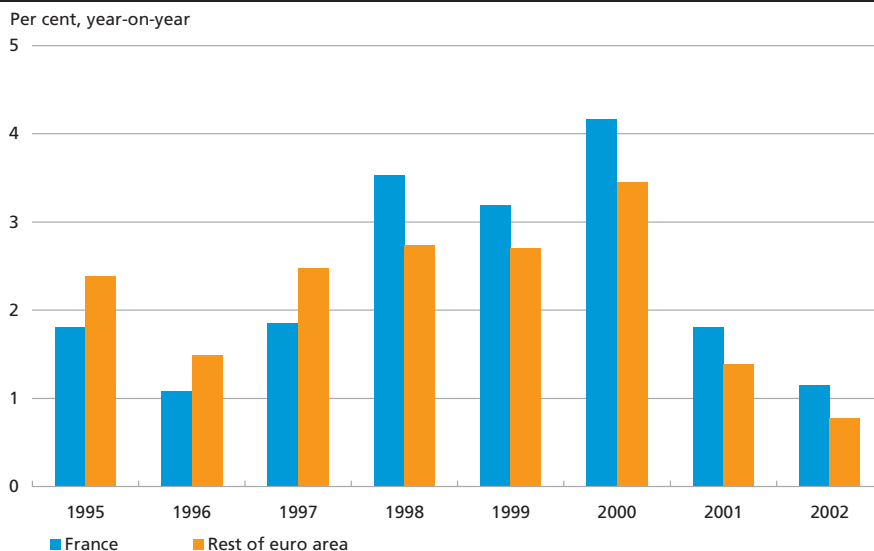
Chart 3



Source: OECD (2003a).

GDP GROWTH IN FRANCE AND REST OF EURO AREA

Chart 4



Source: OECD (2003a).

expenditure on active labour-market policies. Furthermore, the social-security contributions were reduced in order to compensate employers for a proportion of the costs of introducing the 35-hour week. In overall terms, the labour-market-related expenditure decreased only slightly from 6.2 to 6.1 per cent of GDP from 1997 to 2000, despite the significant increase in employment. This laid the foundation for increased future pressure on expenditure.

According to the European Commission (2003a), besides a tendency to implement a procyclical fiscal policy there were generally also difficulties in complying with the budgeted expenditure targets. As a result, the total increase in expenditure in the period 2000-2002 was twice as high as the budgeted increase, even though economic growth more or less matched expectations. In this period the deficit therefore increased by 1.8 per cent of GDP compared to a budgeted decrease of 1.1 per cent of GDP. The higher than budgeted expenditure can predominantly be attributed to the social-security schemes covering areas such as health, pensions, social programmes and unemployment benefits. In 2001, social-security schemes accounted for 45 per cent of total public spending.

To a varying degree the schemes are autonomous, but as a consequence of the social partners' participation in the decision-making bodies almost half of total government spending is in real terms independent, and thus difficult to include in budget consolidation. The consider-

able administrative overlap between public authorities and the insurance schemes, as well as the lack of delegation of responsibility for budget compliance, are significant factors to explain the weak expenditure control. The health area is a case in point, since although the central government may fix fees and unit prices, there are no cost-control incentives for the providers of health services. The combination of unrealistic expenditure targets in the budgets and insufficient control mechanisms has led to systematic budget overruns over the years (European Commission, 2003a). Furthermore, according to the OECD (2003b), the consequence of the statutory earmarked social-security contributions is that savings in one area cannot be transferred to other areas without amending legislation. This imposes permanent underlying pressure on expenditure. A case in point is the fund for financial assistance to families with young children. This fund has generated higher and higher profits, but it has defined new tasks for itself rather than transferring funds to e.g. the health and pension area, which is in need of additional resources.

Central-government finances have shown a by and large constant deficit in recent years, except in 2002 when tax cuts undermined revenue while unforeseen transfers to e.g. health and labour-market schemes augmented expenditure. The local authorities play a quite modest role in the overall public sector, and their revenue and expenditure are to a high degree subject to central-government control. At the same time they are subject to a rule of thumb concerning balance (IMF, 2001) and have achieved moderate surpluses in recent years.

The government deficit amounted to 3.2 per cent of GDP in 2002, but would have stayed below 3 per cent of GDP had the government refrained from cutting income taxes in the autumn of 2002 causing the budget balance to deteriorate by 0.2 per cent of GDP.

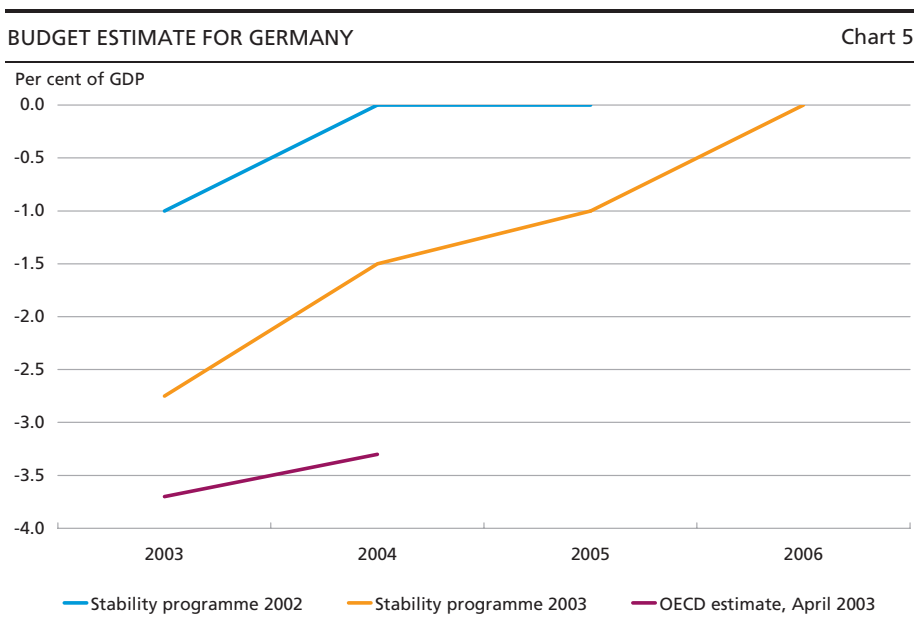
## **PUBLIC FINANCES 2003-06**

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### **Germany**

The public deficit is expected to be 3.7 per cent of GDP in 2003 (OECD, 2003a). The stability programme for 2003 expects the deficit to decrease, achieving balance in 2006, cf. Chart 5.

In addition to stronger growth this will be achieved by curtailing the increase in expenditure at state government and local government level to no more than 1 per cent per annum in 2003 and 2004, while central-government expenditure must be reduced by 0.5 per cent per annum. Neither the Bundesbank (2003) nor the OECD (2003b) expect this ambitious programme to be realised. It entails a considerable tightening in



Source: OECD (2003a) and stability programmes for 2002 and 2003.

relation to the 2002 stability programme, in which government spending was expected to increase by 1.5 per cent per annum. In practice, reducing expenditure for social-security schemes is necessary in order to consolidate public finances since these schemes account for a large share of the total expenditure. In the 1st half of 2003 both the central government and state governments saw lower tax revenues and higher labour-market expenditure than expected.

In the spring the German government submitted its reform programme Agenda 2010 to stimulate growth and improve public finances. The programme comprises the following:

- A *labour-market reform* to increase the flexibility of the labour market by e.g. relaxing the rules for termination of employment, particularly in small business enterprises, reducing benefit payments and introducing stronger sanctions against unemployed individuals who reject suitable jobs. The labour-market reform has been adopted in part.
- A *health reform* entailing significant changes to the incentive structures in the health sector via such measures as user fees and improved management of hospital expenditure. All other things being equal, the reforms are expected to generate savings of approximately 10 billion euro in 2004, rising to 23 billion euro in 2007. The health reform has not been adopted, but is a compromise between the government and the opposition.

- Moving forward the *3rd stage of the tax reform* from 2005 to 2004, which viewed in isolation entails a tax cut by approximately 16 billion euro. In view of the structure of the taxation system this will affect all layers of administration.<sup>1</sup> The central government's share of the tax cuts will amount to approximately 7 billion euro, while the finances of the state governments and local governments will deteriorate by approximately 9 billion euro. The effect on activity of moving forward the tax cuts depends on e.g. the extent to which the government's plans to cut a number of deduction entitlements and subsidies are adopted. Parliament's consideration of the proposal has not yet begun.

Moreover, Agenda 2010 entails an investment programme for 15 billion euro and measures to strengthen education, as yet not further specified. The overall effect of Agenda 2010 on public finances is still unknown, but tax cuts amounting to approximately 0.7 per cent of GDP will lead to an immediate deterioration of public finances in 2004. The German government has stated that if growth remains below 2 per cent in 2004 the government deficit will probably exceed 3 per cent of GDP.

### France

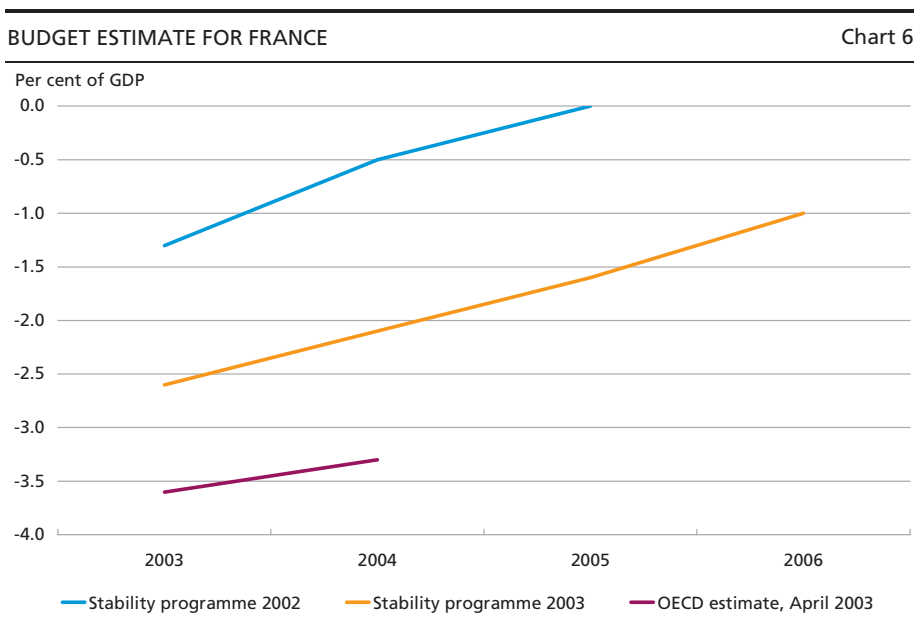
France's public deficit is expected to be 3.6 per cent of GDP in 2003 (OECD, 2003a). A significant reduction of expenditure growth also plays a decisive role in France's 2003 stability programme. In the period 2004-2006 the real growth in total expenditure may not exceed 3.9 per cent in overall terms, regarding primarily health, pension schemes and the local authorities. At the same time, the programme shows a smaller improvement in the public budget balance than was indicated in the 2002 programme, cf. Chart 6. In the spring of 2003 the French authorities admitted that the deficit in both 2003 and 2004 would probably exceed 3 per cent, due to such factors as downward adjustment of the growth forecasts.

The timing and the combination of tax cuts and expenditure reforms are cornerstones of the French government's ambitious target of a leaner and more efficient public sector. Since the autumn of 2002 the government has undertaken several reforms towards this objective:

- Reform of *public administration* comprising rationalisation of central-government administration as well as the delegation of a number of competencies to local authorities, such as increasing the local authori-

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<sup>1</sup> In Germany, taxes are collected centrally and distributed to the various layers of administration according to special distribution keys. For example, the distribution of income taxes is 42.5 per cent to the central government and state governments respectively, and 15 per cent to local governments.



Source: OECD (2003a) and stability programmes for 2002 and 2003.

ties' right to collect taxes. A large proportion of the legislative basis for the decentralisation has been adopted, while reforms of central-government administration still have a long way to go.

- In the *health area* the government wishes to introduce improved control mechanisms as regards the provision of health services, and stronger restraint incentives targeted at both users and providers. A part of the reform has been adopted, but the need for further measures is emphasised by the development in the 1st half of 2003 when health-sector expenditure increased more than was expected for the full year.
- In July 2003, parliament also adopted a *pension reform* to improve the budget balance in the long term, cf. below.

Furthermore, the government intends to *privatise* a number of public corporations. This exercise is complicated by the fact that many of these companies' employees are civil servants with highly lucrative early retirement schemes. Furthermore, revenue from *share sales* is expected to reduce the debt by 8 billion euro.

The European Commission (2003a) as well as the OECD (2003b) clearly assess that these reforms are important steps in the right direction, but that they are far from adequate. The Commission is pessimistic concerning compliance with the stability programme, since among other factors,

the government's expectations of economic growth and employment are found to be unrealistic.

## BUDGET CHALLENGE IN THE LONGER TERM

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The ratio of elderly people will increase in all western countries. Germany and France are among the countries with the strongest population ageing tendency. In 2030, the elderly dependency ratio is expected to be twice the current level (EPC, 2001). A growing number of elderly people will retire from the labour market at an earlier age and are expected to live longer. This will increase the pressure on expenditure for pensions, health and care.<sup>1</sup> Health and care expenditure is expected to increase by 2-3 per cent of GDP.

The pressure on the pension systems is particularly strong in countries such as Germany and France with predominantly *pay-as-you-go* systems. In these countries, each generation does not save up for its own pension, but will be provided for by the next generation. The system is working well as long as the generations multiply, but when the number of pension recipients increases in relation to the number of people active in the labour market, there will be fewer people to shoulder the burden of increasing expenditure. Pension expenditure in Germany and France is expected to rise by 4-5 per cent of GDP until 2050.<sup>2</sup>

Most countries find it undesirable for increased expenditure to be financed via higher taxes, as this may reduce employment. The only way to make the pension system financially sustainable is therefore for people that are active in the labour market to increase their contributions and/or for the pensioners to receive smaller contributions. The most frequently stated measures are:<sup>3</sup>

- Higher contributions from each individual.
- Longer contribution period as a precondition for access to full pension.
- Greater actuarial fairness, i.e. that the annual pension disbursements take into account the longer remaining lifetime calculated at retirement age.
- Increased employment in general.
- Increased employment among the elderly achieved by abolishing early retirement schemes and thereby raising the average age of retirement.

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<sup>1</sup> Calculations of the expected future increase in public spending are based on assumptions of no qualitative improvement in public services. In a budgetary context this assumption should be regarded as very optimistic.

<sup>2</sup> The German government expects an increase by 4 per cent of GDP (stability programme, 2003), while the IMF (2002c) expects 5 per cent. Various calculations for France all indicate approximately 4 per cent, see e.g. OECD (2003b).

<sup>3</sup> See e.g. EPC (2001), IMF (2002b) and OECD (2003b) for more detailed descriptions.

- Price indexation rather than wage indexation, whereby the purchasing power of pensions is retained, but not improved.

Reform of pension systems is always politically sensitive. One reason is that public pension schemes are dominant in many countries (in Germany and France private pension savings accounted for 3.2 and 6.3 per cent of GDP respectively in 1999, against 24.4 per cent in Denmark). Another reason is that the elderly are an ever-increasing group of voters. In both Germany and France the labour-market policy focuses on improving employment and thereby potential growth. In Germany this is the core of the government's *Agenda 2010*, cf. above.

*Germany* implemented a minor pension reform in 2001. Under the reform the total pension contribution from employer and employee will be raised in the future to a ceiling of 20 per cent by 2020 and 22 per cent by 2030 (the current contribution is 19.5 per cent). The reform also introduced tax incentives to augment private pension-saving schemes, while the indexation of pension disbursements was adjusted to gross wage instead of net wage terms. All in all, these measures are designed to reduce pension disbursements from 70 per cent to 67-68 per cent of the calculated income basis by 2030 (OECD, 2001). In an attempt to raise the retirement age a system was introduced in 2002 whereby early retirement at the age of 63 entails a 7.2 per cent lower pension for the entire pension period.<sup>1</sup> In August, a government commission (Rürup) submitted proposals for further tightening of the pension area.

In *France* parliament adopted a limited pension reform in July 2003. One of the new measures is that as from 2008 public-sector employees, like private-sector employees, must work for 40 years to be entitled to full pension. This will increase in stages to 42 years for everybody by 2020. The reform also introduces tax incentives to promote corporate pension schemes. Since 1994, public pension schemes for private-sector employees have been regulated by a price index, while the pension schemes of public-sector employees have been regulated by a wage index for the public sector. As a result of the amended indexation of pension schemes for private-sector employees pension expenditure in France will no longer increase, while at the same time the pensions of private-sector employees will be undermined on an ongoing basis in relation to public-sector employees. The government and the social partners still need to address public-sector employees' right to early retirement at the age of 50-55 with almost full pension entitlement, as well as several unemployment

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<sup>1</sup> The conditions for full pension entitlement are that the person has reached the age of 65 and worked for 35 years. As from 2012 it will be possible to retire at the age of 62, subject to a reduction of pension disbursements by 10.8 per cent throughout the pension period.

insurance schemes, which are *de facto* early-retirement schemes. As an example, the calculations of the IMF (2002b) show that an increase in the average retirement age from 58 to a little more than 62 years will be sufficient to make the pension system sustainable.

## CONCLUSION

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Today (cf. Buti and van den Noord, 2003), the euro area member states have less incentive to tighten fiscal policy than they did at the end of the 1990s when EMU participation was a visible goal. Furthermore, the member states with fiscal imbalances can no longer be affected by currency unrest after the introduction of the euro. The development in the bond markets shows that euro area member states with weak public finances are not punished to any significant degree.

The background to the current problems in Germany and France is that these countries did not utilise the latest period of high growth to reduce their structural deficits. If a country wants scope to pursue a countercyclical fiscal policy in an unfavourable economic climate, it must necessarily also pursue a countercyclical fiscal policy in a favourable economic climate. As a result of the weak economic situation and lack of specific sanctions Germany and France have not reduced their large deficits. This problem is aggravated when it applies to the two largest economies in the euro area because of the macroeconomic consequences, as well as political issues. The budget problems have led to a discussion of the suitability of a fixed fiscal-policy framework. In the short term, countries with budget imbalances may find it appropriate to ease the framework. Nonetheless, it is important to remember that the purpose of the Treaty provisions and the Stability and Growth Pact was to create scope for manoeuvre within a credible framework. The credibility of fiscal policy will be significantly weakened if laws and regulations are amended every time an unexpected event occurs or if large and small countries are treated differently. It is also important to ensure that the discussion does not undermine the focus on the long-term problems caused by the ageing of the population. If the large budget deficits persist, they may lead to a higher level of interest rates in Europe<sup>1</sup>, which will further complicate the implementation of a sustainable fiscal policy.

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<sup>1</sup> The macroeconomic significance of a sustained large deficit depends on the country's size. In large euro area member states a sustained deficit may lead to a higher gross financing requirement which could push up bond yields in the euro area as whole. At the same time, a sustained large deficit may weaken the member states' credit standing, entailing higher credit risk premiums. This may cause the interest-rate differential between the member states to widen from the current level. A sustained large deficit may furthermore increase the inflationary pressure, and thereby force the monetary-policy interest rate of the euro area to be increased.

Both Germany and France have implemented reforms, but the question is whether they are sufficient. France, especially, has been subject to underlying pressure to increase government spending in an upswing, and this pressure will be amplified by the elderly dependency ratio. Increased expenditure for pension schemes, health and care will either require higher revenues or a reduction of expenditure in other areas so as to avoid a permanent increase in the debt. The longer the authorities wait before they chart out a sustainable course for public finances, the more drastic the measures required will be. The authorities are therefore under pressure to implement reforms that may be unpopular in the short term.

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# The Economic Situation in the Faroe Islands

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*Bjarne Skafte and Pernille Thinggård, Secretariat*

## INTRODUCTION

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In the early 1990s the Faroe Islands experienced an economic crisis with high unemployment, heavy debt and considerable emigration from the islands. 1995 saw the beginning of a period of significant progress. This article outlines the current economic situation in the Faroe Islands.<sup>1</sup>

The Faroe Islands constitute a small economy with a population of approximately 48,000. The economy is highly dependent on the development in the fishing industries, as exports of goods mainly comprise fish products. Since practically all goods for consumption and investment must be imported, the price and quantity of fish determine the income of the Faroese population available for such purposes. Consequently fiscal policy does not affect the level of activity in the Faroe Islands to the same degree as in Denmark.

The Faroe Islands have home rule, and economic policy and economic legislation are primarily laid down by the Faroese authorities, i.e. the parliament (Løgting) and government (Landsstýri). The Faroe Islands are not a member of the EU.

The Faroe Islands are part of the Danish currency area, since they use the Danish krone as their national currency. Among other things, this entails that the Faroese banks have full access to Danmarks Nationalbank's monetary-policy instruments and that Danmarks Nationalbank's monetary and foreign-exchange policy also applies to the Faroe Islands. The Faroe Islands have their own banknotes with the same denominations and formats as the Danish banknotes. The banknotes are printed at Danmarks Nationalbank, which supplies the Faroe Islands with banknotes via cash depots in Tórshavn in the same way as in Denmark. Danmarks Nationalbank exchanges the banknotes for Danish banknotes on a 1:1 basis and free of charge.

The statistical basis for assessing the Faroese economy is limited, and some of the statistics are subject to significant uncertainty.

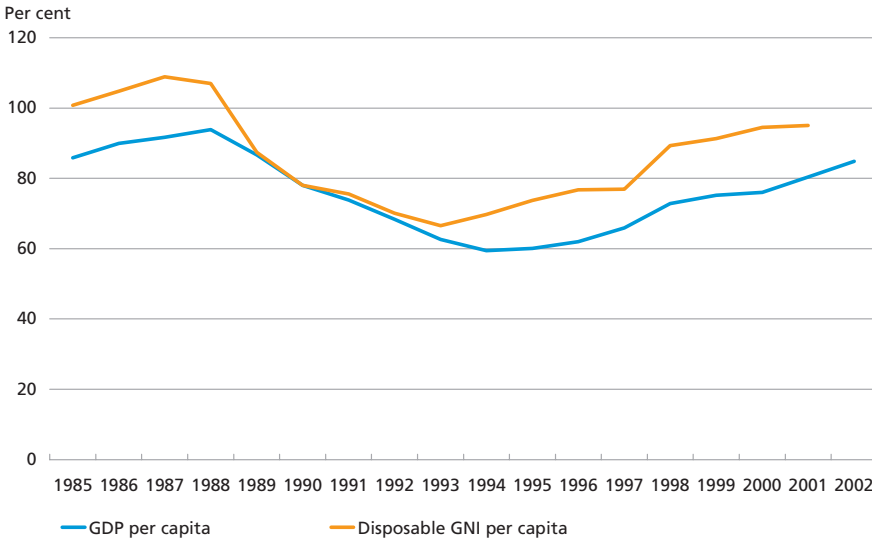
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<sup>1</sup> The article is, *inter alia*, based on a visit to the Faroe Islands in May 2003, during which we met with the High Commissioner's Office, the Faroese Ministry of Finance, the Faroese Economic Council, Landsbanki Føroya (the Governmental Bank of the Faroe Islands), business organisations, Føroya Sparikassi and Føroya Banki.

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**GDP AND DISPOSABLE GROSS NATIONAL INCOME OF THE FAROE ISLANDS  
COMPARED WITH DENMARK**

Chart 1



Note: Disposable GNI is calculated as GDP less interest, yields, wages, etc. to abroad (net), and current transfers to abroad (net).

Source: Hagstova Føroya, Landsbanki Føroya, the Faroese Ministry of Finance and Statistics Denmark.

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**THE ECONOMIC UPSWING AFTER THE CRISIS**

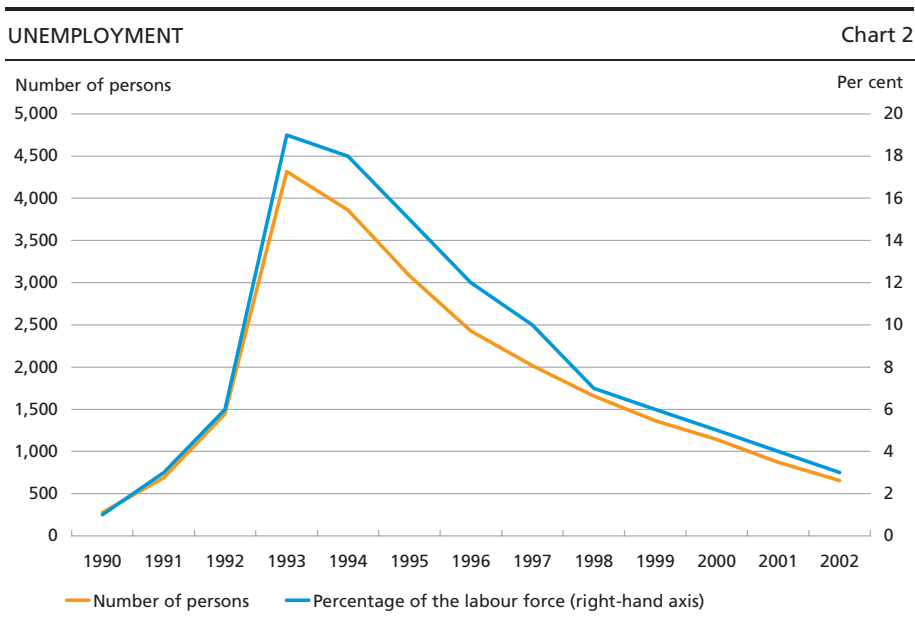
After the economic crisis in the early 1990s with heavy debt and high unemployment the trend reversed surprisingly fast. From 1995 to 2002 the Faroese economy saw a period of unusually high growth, mainly driven by catch volumes, high prices for fish, a prospering fish-farming industry and growing exports.

The Faroese gross domestic product (GDP) in current prices has shown an annual growth rate of 7-15 per cent over the last 5-6 years.<sup>1</sup> The Faroese Ministry of Finance estimates that this is equivalent to average real growth of 6-7 per cent per annum. After this growth period, the Faroese GDP per capita is once again more than 80 per cent of the level in Denmark, cf. Chart 1. The Faroe Islands' disposable gross national income (GNI) per capita, which includes the block grant from the Danish government, has exceeded 90 per cent of Denmark's GNI in recent years. Figures for 2002 are not available yet.

The favourable economic development means more jobs and considerably lower unemployment, cf. Chart 2. During the deep economic crisis more than 10 per cent of the Faroese population emigrated. The posi-

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<sup>1</sup> Sources: the Faroese Ministry of Finance and Hagstova Føroya (Statistics Faroe Islands).



Source: Hagstova Føroya.

tive development since 1995 has led to the return of around 5 per cent of the population in total.

The last ten years have seen extensive consolidation of the public finances, as well as the finances of most households and business enterprises. There is thus no risk that a possible slowdown in the near future may develop into a crisis on the scale witnessed in the early 1990s.

## THE CURRENT ECONOMIC SITUATION

Over the last 7-8 years the economy has followed an exceptionally favourable course, which is hardly likely to continue. In 2002 and particularly in the 1st half of 2003 there were indications that the economy is weakening.

Total payroll expenditures are often taken as an indicator of the general economic development. The annual growth rate for total payroll expenditures peaked in 2001 at 13.8 per cent, cf. Table 1. In 2002 payroll expenditures rose by 8.4 per cent. Payroll expenditures in the fishing industry depend on the value of the catches. Outside the fishing industry annual wage increases were 4-5 per cent, entailing a high rate of real output growth. Payroll expenditures in the first four months of 2003 increased by only 2.4 per cent against the same period in the preceding year. The lower increase indicates that the growth in the Faroese eco-

TOTAL PAYROLL EXPENDITURES Table 1

Kr. million	1999	2000	2001	2002	2002 Jan. - Apr.	2003 Jan. - Apr.
Primary sector .....	1,176	1,312	1,581	1,647	525	482
Manufacturing .....	917	1,046	1,176	1,307	402	430
Services .....	2,341	2,521	2,793	3,063	972	1,032
Total .....	4,434	4,879	5,550	6,017	1,898	1,943
Change in per cent against the preceding year	7.2	10.0	13.8	8.4	11.3	2.4

Note: Payroll expenditures comprise paid-out income taxed at source, as well as the tax deducted at source. Unemployment insurance and public disbursements such as social pensions, unemployment benefit and various subsidies have been deducted.

Source: Hagstova Føroya.

nomony is diminishing. This trend was reinforced by an extensive 4-week strike in the private labour market in May/June 2003.<sup>1</sup>

The 2.4-per-cent increase in payroll expenditures covers considerable differences between the various sectors. For instance, payroll expenditures in the fishing industry declined by 11 per cent in the first four months of 2003 compared with the same period in 2002. On the other hand, payroll expenditures in the building and construction sector and the public sector increased by 7-9 per cent.

### Employment

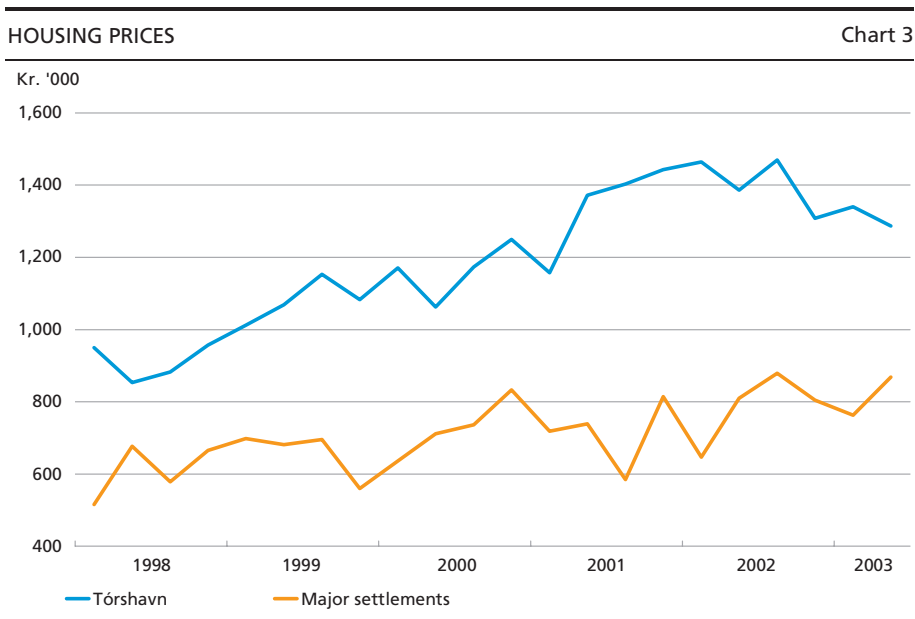
The Faroese economy is close to full employment, and unemployment is at around 3 per cent of the labour force. The level of activity in the building and construction sector has been relatively high, and in recent years it has been difficult for the building sector to recruit the necessary labour. Bottlenecks have exerted pressure on wages in the sector, cf. the strike in 2003. Imports for the building sector increased by 13 per cent in the 1st quarter of 2003 over the same period of 2002.

At times the fishing industry has been short of labour, and consequently foreign labour has been used to a limited extent.

### The housing market

Housing prices in Tórshavn have been going up in recent years, cf. Chart 3. There has, however, been a slight tendency for housing prices to fall in the last quarters, which could be yet another indication of the onset of a slowdown in the Faroese economy.

<sup>1</sup> The strike is a major reason that payroll expenditures in the 1st half of 2003 only increased by 0.1 per cent over the 1st half of 2002.



Source: Føroya Sparikassi.

## Oil

Since 2001 four test oil drillings have taken place, of which one has shown traces of oil and gas. It is as yet uncertain whether there is a basis for extraction, and further exploration drillings are required in the coming years to assess whether there is sufficient oil and gas in the area for commercial utilisation. If so, it will take a number of years before actual extraction can commence.

From the late 1990s to 2001 the hope of finding oil may have contributed to the favourable economic situation.

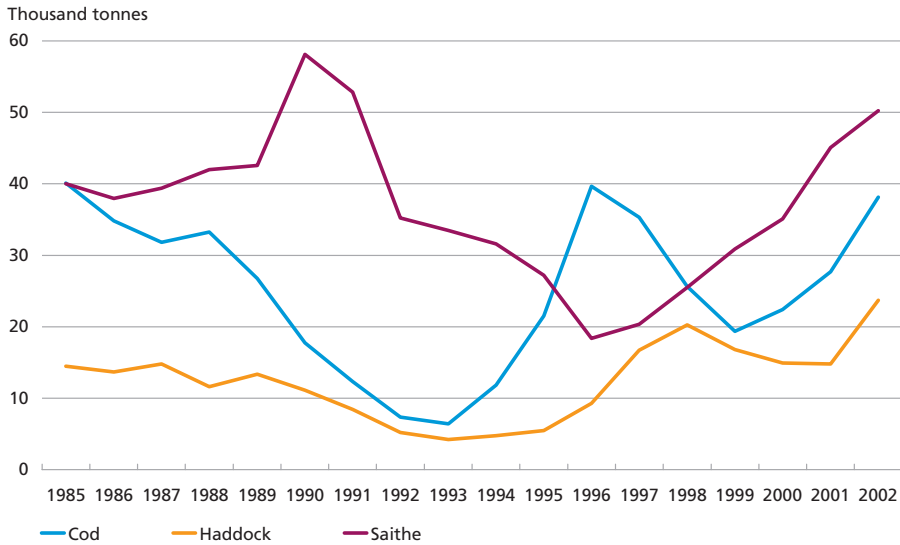
## THE FISHING INDUSTRIES

Fisheries, fish processing and fish farming are the dominant industries in the Faroe Islands. Fishing products constitute approximately 75 per cent of the value of exports, and approximately 25 per cent of GDP stems from fisheries. Fishing takes place in Faroese territorial waters (up to 200 nautical miles from the Faroe Islands), and in external waters such as the Barents Sea. The value of catches in Faroese waters constitutes around 60 per cent of the value of total catches.

During the last 10-15 years fishing has been supplemented with salmon farming. Farming exports have amounted to approximately kr. 900 million a year in the last 4-5 years, equivalent to approximately 20

CATCHES OF COD, HADDOCK AND SAITHE IN FAROESE WATERS

Chart 4



Source: Hagstova Føroya.

per cent of Faroese exports of goods, and currently this is the second-largest export industry in the Faroe Islands.

### Fishing

Catches in Faroese waters mainly comprise cod, haddock and saithe. For the major species, fishing is regulated in that each vessel is assigned a total number of fishing days per year. In other words, the catch effort is regulated, and there is no direct regulation of the quantities caught – as opposed to the EU scheme with quotas for each species.

The catch volumes of cod, haddock and saithe fluctuate considerably, cf. Chart 4. The volumes have increased in recent years and were at a high level in 2002.

World-market prices for the three species were generally high in 2000 and 2001. Combined with the large catch volumes this resulted in exceptionally high fishing income. In 2002 prices fell, but owing to the larger catch volumes, the catch value of these three species increased.

In the two first months of 2003 the catch volume of cod dropped by 19 per cent compared with the large catch volume in 2002. World-market prices for haddock and saithe have fallen in 2003, and the catch values declined considerably in the first two months of 2003.<sup>1</sup>

Fishing in external waters mainly comprises herring, mackerel and blue whiting. These catches are regulated by international agreements and

<sup>1</sup> Hagstova Føroya.

quotas. In 2001 and 2002 the purse-seining fleet, which mainly fishes blue whiting, herring and mackerel, made a very good profit thanks to large catch volumes and relatively high world-market prices.

The economic situation of the Faroese shrimp-fishing industry, on the other hand, is very poor. A number of shrimp trawlers have gone into liquidation within the last year, partly as a result of low shrimp prices. The future of the shrimp fleet is uncertain.

Total fishing subsidies were reduced by approximately kr. 110 million from 1996 to kr. 40 million in 2002. The present scheme is primarily aimed at providing a minimum income for fishermen. In addition, a favourable income-tax scheme applies to fishermen.

### **Fish processing**

Of the total catch, a proportion is exported directly as frozen or iced fish, while the remainder is sold to the Faroese fish-processing industry.

Key factors in this industry include capacity, Faroese wages, and the supply of fish. Output fell from 95,000 tonnes of fish in 2001 to 91,000 tonnes in 2002.

The strike in May/June 2003 meant that filleting activities came to a standstill and that fishermen could not unload their catches in Faroese ports. It is as yet too early to assess the impact of the strike on the filleting factories.

### **Fish farming**

Fish farming, primarily salmon, has become a significant factor in the Faroese economy since the beginning of the 1990s. Farming takes place in the Faroese fiords and sounds. In addition, there are derived industries such as production of smolt and fish feed.

Whereas catch volumes fluctuate greatly, the quantities farmed are easier to plan. Moreover, slaughtering can to some extent be adapted to the expected sales price. Consequently fish farming can "iron out" some of the economic consequences of uncertainties and fluctuations in the fishing sector.

In 2000 the world-market price for salmon was unusually high, cf. Chart 5. With average production costs in the fish-farming industry of kr. 18-20 per kilo, profits were high. In the last two years the price for salmon has been low, and in the summer of 2003 production was not profitable.

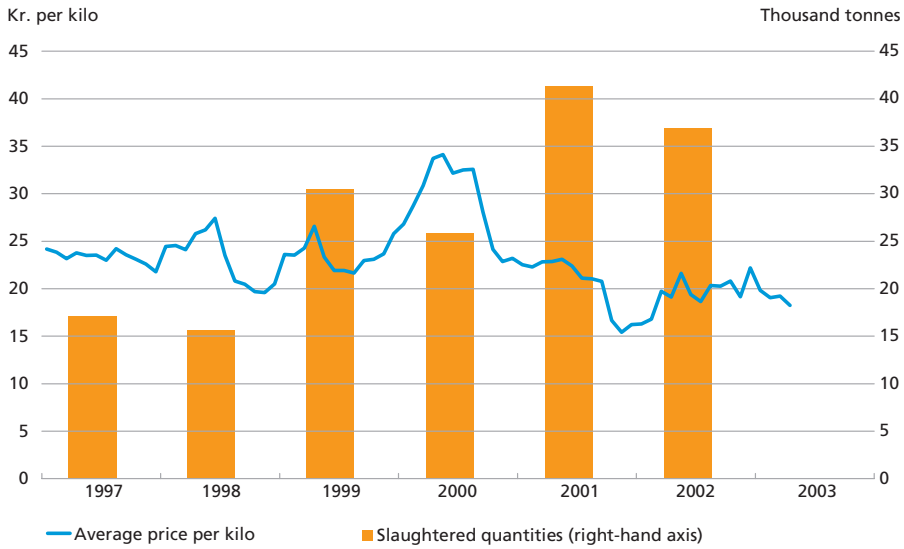
Fish farming is also seriously affected by infectious salmon anaemia, ISA. This disease entails that salmon in infected areas must be slaughtered before they attain a suitable age and size.<sup>1</sup> Since normal produc-

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<sup>1</sup> The infected fish are slaughtered, disinfected and incinerated. Subsequently the areas of the sea where ISA has been registered must lie fallow for 6 months before new smolt can be released.

## SALMON FARMING

Chart 5



Source: Vinnuhúsið and Kontali Analyse.

tion time is 2-4 years, the consequence of these slaughters will be reduced output in the next few years.

Salmon production is capital intensive because the long production time requires financing. The low price for salmon and the outbreak of ISA have more or less halved the equity of the Faroese farming industry in one year<sup>1</sup>. Another consequence is that it is difficult to attract new capital to the industry. In 2003 only just over half the normal volume of smolt has been released into the fiords.<sup>2</sup> The banks' accounts for the 1st half of 2003 show that the situation is critical for the industry, so at present the future of the farming industry is uncertain.

## THE FINANCIAL SECTOR

In 2002 the profit of the four Faroese banks totalled kr. 288 million, which was kr. 22 million lower than in 2001, cf. Table 2. Costs increased considerably more (by 22 per cent) than revenues (by 6.5 per cent), and operating income over operating expenses declined from 2.16 in 2001 to 1.89 in 2002.

On the income side, the banks' net interest income remained unchanged in 2002 compared with 2001. The falling level of interest rates in 2002 brought significant capital gains on securities, etc.

<sup>1</sup> Føroya Banki's annual accounts 2002.

<sup>2</sup> Vinnuhúsið.

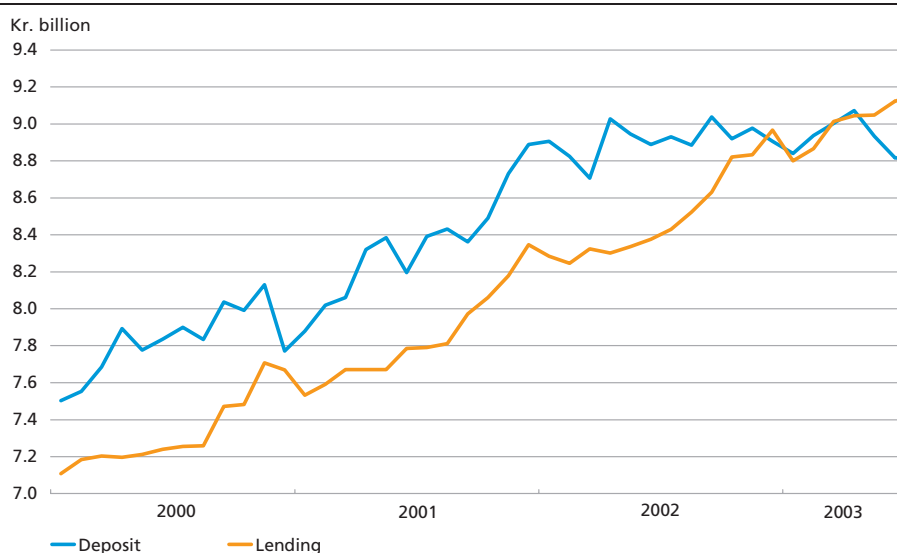
THE BANKS' FINANCIAL RESULTS					Table 2
Kr. million	1999	2000	2001	2002	1st half 2003
<i>Income</i>					
Net interest income .....	423.0	483.6	508.6	508.6	265.8
Net fee and commission income .....	19.2	24.9	31.0	37.3	24.6
Value adjustment of securities, etc. ....	-56.2	-1.9	19.0	44.7	15.5
Value adjustment of capital investments ....	0.2	-3.1	0.9	0.2	-2.2
Other ordinary income .....	13.0	23.0	16.6	22.6	20.0
<i>Costs</i>					
Operating expenses, etc. ....	260.3	266.6	272.2	301.9	151.0
Losses and provisions on debtors .....	-164.7	-154.0	-5.7	23.3	254.6
<i>Ordinary operating result</i> .....	303.7	413.8	309.6	288.1	-81.9

Source: Føroya Banki, Føroya Sparikassi, Suðuroyar Sparikassi, Norðoya Sparikassi and the Danish Financial Supervisory Authority.

The favourable economic situation in 1999-2001 led to reversal of previous provisions. In 2002 the banks' losses and provisions totalled kr. 23.3 million, equivalent to a ratio of losses and provisions to loans and guarantees of 0.3 per cent. Owing to the fish-farming problems, the two largest banks made significantly higher provisions for this industry in their accounts for the 1st half of 2003. This entails a loss on ordinary activities, but the solvency ratio of the banks remains high.

The banks' total lending increased considerably during 2002, while deposits remained fairly stable, cf. Chart 6.

THE BANKS' TOTAL DEPOSITS AND LENDING Chart 6



Source: Landsbanki Føroya.

INCOME AND EXPENSES OF THE EXCHEQUER						Table 3
Kr. million	1998	1999	2000	2001	2002	2003
Tax revenues .....	1,043	1,234	1,310	1,566	1,675	1,796
Customs and duties .....	989	1,042	1,117	1,148	1,239	1,268
Other income .....	142	117	88	91	58	54
Block grants .....	920	945	973	995	629	630
Total income .....	3,094	3,338	3,488	3,800	3,602	3,747
Operating costs .....	2,292	2,557	2,713	2,923	3,171	3,224
Capital investments .....	83	133	174	180	240	283
Interest costs .....	249	156	127	76	24	66
Total expenses .....	2,624	2,690	2,887	3,103	3,411	3,507
Surplus .....	470	648	602	697	191	240

Note: Exchequer accounts 1998-2002 and budget for 2003.

Source: High Commissioner's report 2003 and the Faroese Ministry of Finance.

## PUBLIC FINANCES AND GOVERNMENT DEBT

The economic progress since 1995 and the low level of interest rates have contributed to improving public finances. The Exchequer's surplus was kr. 191 million in 2002, against kr. 697 million in 2001 and kr. 602 million in 2000, cf. Table 3. The drop in the Exchequer's surplus in 2002 compared with 2001 is mainly attributable to a reduction in the block grant from Denmark by 1/3 to kr. 630 million annually.

Government spending increased by 30 per cent from 1998 to 2002, equivalent to average annual growth of 7 per cent, while the annual increase in wages in the public sector was 4-5 per cent.

The increase in government spending from 1998 to 2002 comprises higher operating costs and capital investments, as well as lower interest costs. On the income side, tax revenues are affected by tax cuts, e.g. in connection with a tax reform in 1997 and changed tax brackets in 2001 and 2002.

The budget for 2003 operated with a surplus of kr. 240 million. Subsequent tax cuts totalling kr. 123 million over two years have been adopted, i.e. kr. 52 million in 2003 and kr. 71 million in 2004. The budget for 2003 included an increase in revenues from direct and indirect taxes of 5-6 per cent, but in the first seven months of 2003 such revenues were approximately 1 per cent lower than in the same period of 2002. The fall in revenues from direct and indirect taxes during the first seven months of 2003 reflects the lower economic growth, but also the effect of the strike in the early summer.

## Government debt

The government surpluses have made it possible to increase the liquidity of the public sector and reduce government debt considerably. The gross debt of the Exchequer has been reduced from kr. 6.9 billion at end-1996 to kr. 5 billion at end-2002, and liquidity was kr. 2.4 billion at end-2002.

In addition, the public sector has considerable assets. These include the public sector's share of the Financing Fund of 1992 (particularly Føroya Banki) and other public enterprises and foundations. The possible privatisation of parts of these enterprises is a current issue in the Faroese debate.

## FOREIGN TRADE AND EXTERNAL DEBT

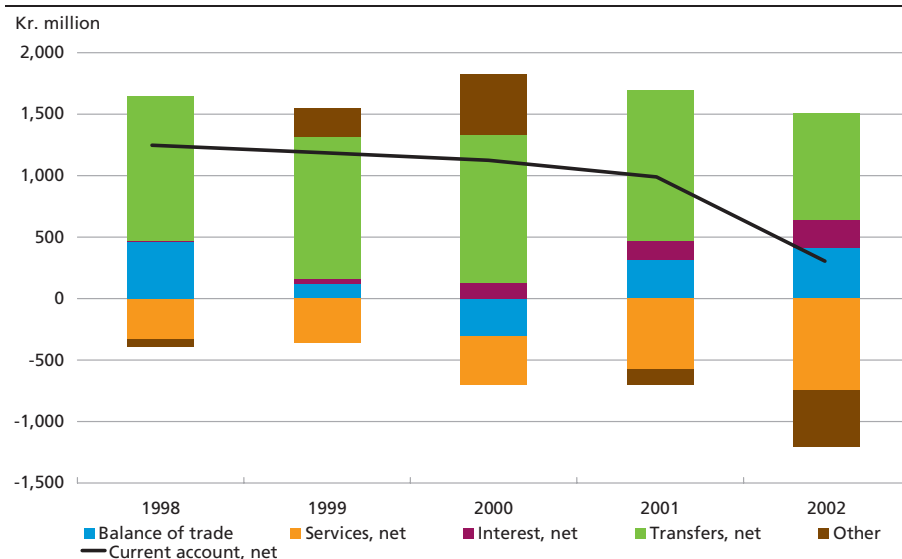
The balance of trade for the Faroe Islands showed a surplus of kr. 381 million (excluding ships) in 2002, against kr. 284 million in 2001. The increase covers a fall in exports of kr. 120 million, which was more than offset by a fall in total imports of kr. 216 million.

In the first four months of 2003 the value of exports (excluding ships) was kr. 1,310 million, compared with kr. 1,386 million in the same period of 2002. The decline is mainly attributable to falling prices for frozen/iced whole fish (except salmon and trout).

The current account has shown a surplus since 1993. The current account deteriorated considerably in 2002 compared with 2001, cf. Chart 7. A

BALANCE OF PAYMENTS

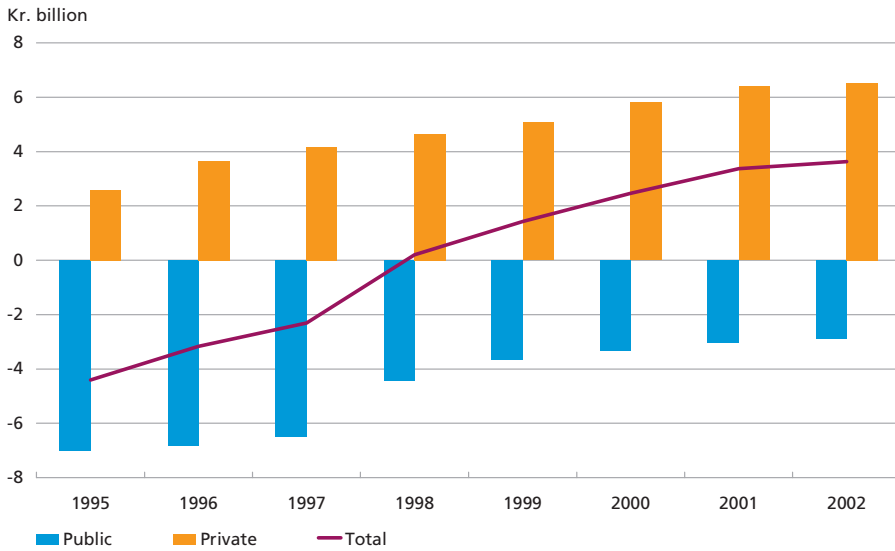
Chart 7



Source: Landsbanki Føroya.

THE FAROE ISLANDS' NET EXTERNAL ASSETS

Chart 8



Source: Landsbanki Føroya.

major reason for this fall is a reduction in the transfers from the Danish government by kr. 366 million in 2002.

### The Faroese Islands' net external assets

In the early 1990s the Faroese Islands' net external debt totalled kr. 8 billion, but by 2002 this had been transformed into net external assets of kr. 3.6 billion, cf. Chart 8.

The substantial fall in the net debt is primarily attributable to the large current-account surpluses. The debt reduction is, however, also a result of a write-down of the Faroese debt to the Danish government by kr. 900 million under an agreement between the Danish and Faroese governments in 1998.

The net external position of the Faroese Islands covers large variations between public and private net external debt, cf. Chart 8. At end-2002 the private sector had net external assets totalling kr. 6.5 billion, whereas the public sector had a net debt of kr. 2.9 billion.

## CONCLUSION

After a period of 7-8 years with favourable cyclical development in the Faroese Islands, several factors now indicate a slowdown in the Faroese economy. The increase in payroll expenditures diminished in 2002, and this trend strengthened in the 1st half of 2003. Exports and imports have

declined. The catch values of fish, which were very high particularly in 2001 and 2002, dropped at the beginning of 2003. Fish farming is under financial pressure owing to disease and low world-market prices for salmon, which also has a negative impact on the banks.

However, the foundations of the Faroese economy are considerably more solid in 2003 than in the late 1980s after the boom during the 1980s. Public finances are relatively sound, and the Faroese net external debt has been transformed into significant net external assets. In addition, the fishing industry is geared to compete on market terms to a much higher degree than previously. Consequently, the Faroese economy is much better prepared to cope with a possible recession.



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## Press releases

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### **6 JUNE: INTEREST RATE REDUCTION**

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The discount rate and the rate of interest on the banks' current accounts with Danmarks Nationalbank are lowered by 0.50 per cent to 2.00 per cent. Danmarks Nationalbank's lending rate and the rate of interest on certificates of deposit are lowered by 0.50 per cent to 2.15 per cent. The reduction will have effect as from 6 June 2003.

The interest rate reduction is a consequence of the lowering by 0.50 per cent to 2.00 per cent in the European Central Bank's minimum bid rate on the main refinancing operations.

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### **12 JUNE: NORDIC CENTRAL BANKS CONCLUDE MOU ON FINANCIAL CRISIS MANAGEMENT**

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At their meeting in Stykkishólmur, Iceland, on 11 June 2003, the Governors of the central banks of Denmark, Finland, Iceland, Norway and Sweden signed a Memorandum of Understanding (MoU) on financial crisis management. The MoU is applicable when a severe problem occurs in a bank which is domiciled in a Nordic country and has cross-border establishments in other Nordic countries.

The experience gained from banking problems in some Nordic countries in the early 1990s clearly showed the need for central banks to act quickly in a bank crisis situation. In recent years, a number of banks have established themselves outside their countries of domicile – including several banks in the Nordic area –and this makes it necessary for central banks to undertake joint analysis, discussion and action in the event of a financial crisis.

The MoU is applicable to a crisis in any bank, which is domiciled in a Nordic country and has at least one cross-border establishment in the area. The MoU deals only with the cooperation between the central banks and does not affect other international agreements, such as the agreement on crisis management between the central banks and national bank supervisory authorities in the European System of Central Banks (ESCB). Nonetheless, the MoU clearly points out the need for close

cooperation between the central banks and the bank supervisors on a continuous basis, but particularly in a crisis situation.

The focus of the Nordic MoU is on practical arrangements. It states that any central bank may call for a meeting of a "crisis management group" comprising high-level central bank officials. Furthermore, it indicates which central bank should take the leading role and outlines the contacts that need to be made with bank supervisors, ministries of finance, bank managers and other parties. The MoU also specifies which information should be obtained and analysed from the bank concerned. Finally, the MoU calls for coordination of the information which the central banks provide to outside parties.

Since each individual crisis situation is different, the MoU does not indicate which remedial measures will be taken. However, since the

MoU concerns cooperation between central banks, the possibility to provide liquidity will be a main issue.

## **20 JUNE: DANMARKS NATIONALBANK PUBLISHES NEW EDITION OF BOOK ON MONETARY POLICY**

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Today Danmarks Nationalbank publishes a new edition of "Monetary Policy in Denmark". The first edition was published in 1999 (in Danish only).

The aim of the book is to offer interested parties a comprehensive presentation of the Danish approach to monetary policy and of the relation between monetary policy in theory and practice.

Chapter 1 describes Denmark's fixed-exchange-rate policy vis-à-vis the euro, and Danmarks Nationalbank's setting of the short-term interest rate. Chapter 2 presents an overview of the Danish money and foreign-exchange market. Chapter 3 considers the factors influencing Danish interest and exchange rates, as well as the significance of fluctuations in interest and exchange rates for the Danish economy. Finally, Chapter 4 outlines the strategy for Danish monetary policy compared to monetary policy in other countries.

An English translation will be published in autumn 2003.

## **30 JUNE: DANMARKS NATIONALBANK'S ACQUISITION OF SHARES IN PBS HAS BEEN COMPLETED**

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Danmarks Nationalbank's acquisition of 17.7 per cent of the shares in PBS Holding A/S from Danske Bank has now been completed. Danmarks Nationalbank agreed to purchase the shares in December 2002, cf. the press release of 12 December 2002. The purchase was subject to a num-

ber of conditions, including the approval of the competition authorities. These conditions have now been fulfilled, and the acquisition was completed as of 30 June 2003.

## **21 AUGUST: 20-KRONE COIN WITH NEW REVERSE**

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On 21 August 2003 Danmarks Nationalbank issues the 20-krone coin with a new reverse side. The reverse still depicts the small coat of arms, comprising three lions and nine hearts under a crown. On the new version the lions are now more distinct. The crown has been made lighter and simpler, but still contains fine details. It now rests on four oak leaves. The oak leaves emphasise the connection between the lions and the crown.

This is the first time that the 20-krone coin is given a new reverse side since the coin was put into circulation 13 years ago. The portrait on the obverse of Queen Margrethe has been changed twice during that period.

The new reverse side of the coin creates a stylistic relation between the obverse and reverse sides of the coin. The new reverse is the work of the Sculptor, Professor Mogens Møller, who also designed the portrait of Queen Margrethe.

The coins with the new reverse will be included in the year's coin set from The Royal Mint. Coins with the existing reverse side may still be used. As from 2004 the new reverse side will also be used on the 10-krone coins.

## **4 SEPTEMBER: COIN SET 2003**

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The Royal Mint's 2003 coin set will be available from banks and coin dealers from 1 October 2003, although many of these already take orders now.

The coins in the coin set have a more distinct embossment than the ordinary coins in circulation, since they are minted with two strokes. Ordinary coins are minted with only one stroke. The coins are packed in special packaging intended for collectors.

This year's coin set includes two thematic coins: the 20-krone coin with Århus City Hall Tower and the 20-krone coin with the dragon spire of the old Copenhagen Stock Exchange. The 20-krone with the new reverse is also included in the set, together with the 1-krone, 50-øre and 25-øre coins. The 2003 coin set is minted in an edition of approximately 35,000 sets.

Recommended retail price: DKK 170.00.

Any remaining coin sets will be sold from 1 October 2003 from Danmarks Nationalbank, Banking Services, Havnegade 5, DK-1093 Copenhagen K. To order the coin set by post, please pay the amount – DKK 170.00 plus postage of DKK 80.00 per package, in total DKK 250.00 – to account no. 1005 0006353-9. Please state name and full address.

## **8 SEPTEMBER: DANISH KRONE IS INTRODUCED IN CLS**

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As of 8 September 2003 the Danish krone is introduced as an eligible currency of CLS Bank International ("CLS Bank"). CLS bank therefore now settles payments instructions in 11 currencies: US, Canadian and Australian dollars, euro, pounds sterling, Swiss francs, Japanese yen, and now also Danish and Norwegian kroner and Swedish kronor, as well as Singapore dollars.

The world's largest banks established CLS Bank as a private bank with the objective of reducing settlement risk in currency trading. In the CLS settlement process, the parties to a trade report their trading instructions to CLS Bank, which then matches the instructions and the two sides of the trade are settled simultaneously via the parties' accounts with CLS Bank. The settlement fulfils the payment-versus-payment principle and eliminates the credit risk that traditionally arises between parties whose FX transactions are settled via the usual international payment channels.

"With the introduction of the Danish krone in CLS, settlement risk in foreign-exchange transactions in Danish kroner can be reduced significantly. FX settlement risk is one of the most substantial remaining risks in the payment systems and consequently we hope the CLS system will be widely used," says Mr. Torben Nielsen, Member of the Board of Governors.

Further information on CLS is available at [www.nationalbanken.dk](http://www.nationalbanken.dk) under Tasks/Payment systems/CLS.

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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.

Date of going to press: 3 October 2003.

The Tables section of this publication is thus based on more recent information than the equivalent section of the Danish edition.

Danmarks Nationalbank is the source for Tables 1-7, while the Copenhagen Stock Exchange is the source for series of bond yields and the share-price index in Table 1. Statistics Denmark is the source for Tables 8-13, apart from the exchange-rate series in Table 11, for which Danmarks Nationalbank is the source. The calculations in Table 10 has been made by Danmarks Nationalbank.

INTEREST RATES AND SHARE-PRICE INDEX

Table 1

Effective end-of-year/ from	The Nationalbank's interest rates		The ECB's minimum bid rate (in the main refinancing operations)	End of period	Inter-bank interest rate, 3-months uncollateralized	Bond yields		The Copenhagen Stock Exchange share-price index KFX
	Discount rate	Lending and certificates of deposit				10-year central-government bond	30-year mortgage-credit bond	
1998 .....	3.50	3.95	...	1998 .....	4.05	4.35	7.10	219.34
1999 .....	3.00	3.30	3.00	1999 .....	3.57	5.64	7.45	255.69
2000 .....	4.75	5.40	4.75	2000 .....	5.33	5.20	7.30	313.90
2001 .....	3.25	3.60	3.25	2001 .....	3.54	5.15	6.55	272.45
2002 .....	2.75	2.95	2.75	2002 .....	3.00	4.45	5.47	199.49
2002 6 Dec. ...	2.75	2.95	2.75	2002 Sep .....	3.39	4.63	6.13	192.07
2003 7 Mar. ....	2.50	2.70	2.50	2003 Apr .....	2.60	4.37	5.46	205.63
23 May .....	2.50	2.65	2.50	May .....	2.30	3.89	5.23	207.63
6 Jun. ....	2.00	2.15	2.00	Jun .....	2.11	4.03	5.29	214.90
				Jul .....	2.12	4.27	5.47	214.52
				Aug .....	2.14	4.39	5.56	242.16
3 Oct. ....	2.00	2.15	2.00	Sep .....	2.13	4.22	5.43	238.19

SELECTED ITEMS FROM THE NATIONALBANK'S BALANCE SHEET

Table 2

End of period	The foreign-exchange reserve (net)	Notes and coin in circulation	The central government's account with the Nationalbank	The banks' and the mortgage-credit institutes' net position with the Nationalbank			
				Certificates of deposit	Deposits (current account)	Loans	Total net position
1998 .....	101.4	41.0	37.1	34.8	12.6	29.8	17.6
1999 .....	165.3	46.4	39.7	99.9	6.5	33.1	73.3
2000 .....	117.5	44.8	37.7	51.9	8.1	25.3	34.6
2001 .....	148.4	47.3	43.5	113.6	3.7	63.4	53.9
2002 .....	193.2	47.7	50.3	160.7	10.1	81.2	89.6
2002 Sep .....	200.5	44.8	89.3	94.4	11.0	49.3	56.1
2003 Apr .....	198.4	46.8	97.3	143.2	7.8	105.5	45.4
May .....	228.7	46.7	93.2	156.6	8.4	86.8	78.1
Jun .....	233.8	47.3	94.3	138.3	14.6	71.1	81.7
Jul .....	232.1	47.2	82.5	170.1	12.8	91.1	91.8
Aug .....	230.0	46.5	90.7	163.1	4.6	86.0	81.6
Sep .....	227.8	46.3	89.4	132.8	13.0	63.5	82.3

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

Table 3

	Central-government finance			Net purchase of foreign exchange by the National- bank	The National- bank's net bond purchases	Other factors	The banks' and the mortgage-credit institutes' net position with the Nationalbank	
	Domestic gross financing require- ment	Sales of domestic central- government securities	Liquidity effect				Change in net position	End of period
	Kr. billion							
1998 .....	64.1	68.0	-3.8	-28.7	3.2	-4.5	-33.7	17.6
1999 .....	67.9	68.8	-0.9	62.7	1.9	-7.9	55.7	73.3
2000 .....	62.3	65.7	-3.4	-37.7	2.1	0.4	-38.7	34.6
2001 .....	81.2	87.7	-6.5	28.4	1.0	-3.6	19.3	53.9
2002 .....	115.5	121.9	-6.4	45.4	-0.9	-2.4	35.7	89.6
2002 Sep.....	4.2	20.5	-16.4	5.0	-0.8	0.6	-11.6	56.1
2003 Apr .....	15.5	13.1	2.4	0.8	-0.1	-2.9	0.3	45.4
May .....	30.6	9.5	21.1	13.3	-0.3	-1.3	32.7	78.1
Jun.....	7.0	11.6	-4.5	8.6	-0.3	-0.1	3.6	81.7
Jul.....	16.8	7.0	9.8	0.3	0.0	0.0	10.0	91.8
Aug.....	-11.8	-1.4	-10.4	0.1	0.1	0.1	-10.1	81.6
Sep.....	8.5	9.4	-1.0	0.0	1.0	0.6	0.6	82.3

SELECTED ITEMS FROM THE CONSOLIDATED BALANCE SHEET OF  
THE MFI SECTOR AND THE MONEY STOCK

Table 4

End of period	Total balance	of which:					
		Domestic lending			Holdings of domestic securities other than shares	Foreign assets, net <sup>1</sup>	Money stock (M3)
		Total	of which:				
			Households	Non-financial companies			
Kr. billion							
1998 .....	2,407.2	1,491.0	929.6	408.2	153.3	154.6	523.2
1999 .....	2,612.8	1,578.2	1,001.8	420.0	125.8	163.7	523.2
2000 .....	2,806.8	1,758.7	1,076.8	499.2	114.2	49.6	506.4
2001 .....	2,932.1	1,925.9	1,168.6	573.2	133.1	-46.9	546.4
2002 .....	3,201.5	2,024.5	1,249.3	578.3	142.8	-63.9	604.7
2002 Aug .....	3,126.0	1,998.6	1,229.0	576.7	152.9	-75.7	588.9
2003 Mar.....	3,353.1	2,072.2	1,280.0	597.3	171.3	-32.7	646.5
Apr.....	3,355.5	2,079.4	1,279.9	599.1	175.4	-56.6	701.9
May.....	3,461.8	2,076.0	1,287.8	594.1	156.9	-30.3	713.3
Jun.....	3,482.1	2,107.4	1,301.8	605.1	161.6	-34.0	687.9
Jul.....	3,403.4	2,098.1	1,305.3	593.6	160.1	-56.6	716.4
Aug.....	3,403.3	2,100.7	1,312.9	597.0	157.2	-63.2	707.5
Change compared with previous year, per cent							
1998 .....	12.5	9.4	10.2	6.4	10.8	...	3.7
1999 .....	8.5	5.8	7.8	2.9	-17.9	...	0.0
2000 .....	7.4	11.4	7.5	18.9	-9.2	...	-3.2
2001 .....	4.5	9.5	8.5	14.8	16.5	...	7.9
2002 .....	9.2	5.1	6.8	0.9	7.3	...	10.7
2002 Aug .....	6.4	8.2	10.4	6.0	10.5	...	1.7
2003 Mar.....	8.6	6.0	8.4	2.2	27.0	...	18.5
Apr.....	9.3	6.1	8.1	2.4	21.9	...	20.7
May.....	12.4	5.7	8.1	2.8	10.6	...	24.3
Jun.....	10.5	6.4	8.3	3.7	8.3	...	21.9
Jul.....	10.7	6.5	8.1	3.3	3.5	...	21.6
Aug.....	8.9	5.1	6.8	3.5	2.8	...	20.1

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.

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

## THE BANKS LENDING

Table 5

End of period	From banks in Denmark				From Danish owned banks abroad			Total lending
	To Danish residents, total	of which:		To non-Danish residents	Total	of which:		
		Households	Non-financial companies			To Danish residents	To non-Danish residents	
1998 .....	379.0	194.7	112.5	74.8	248.1	96.4	151.7	701.8
1999 .....	399.8	203.4	117.2	105.0	345.4	123.2	222.1	850.2
2000 .....	526.2	239.0	186.4	104.7	312.5	66.2	246.3	943.4
2001 .....	588.0	253.3	228.8	112.7	288.1	34.6	253.5	988.8
2002 .....	599.2	253.5	231.3	124.5	298.3	32.6	265.7	1.022.0
2002 Aug.....	586.3	246.5	227.0	123.6	...	...	...	...
2003 Mar.....	655.4	253.1	288.5	142.3	279.4	31.1	248.3	1.077.0
Apr .....	655.9	248.3	288.6	140.8	...	...	...	...
May .....	639.6	245.5	282.7	138.9	...	...	...	...
Jun .....	663.3	254.6	291.3	140.9	293.0	31.4	261.6	1.097.2
Jul .....	645.0	251.1	278.9	120.5	...	...	...	...
Aug.....	637.5	250.8	278.5	117.6	...	...	...	...
Change compared with previous year, per cent								
1998 .....	13.4	9.2	16.7	-34.2	12.8	13.9	12.0	5.1
1999 .....	5.5	4.4	4.2	40.4	39.2	27.8	46.4	21.1
2000 .....	31.6	17.6	59.0	-0.3	-9.5	-46.3	10.9	11.0
2001 .....	11.7	6.0	22.7	7.6	-7.8	-47.7	2.9	4.8
2002 .....	1.9	0.1	1.1	10.5	3.5	-5.8	4.8	3.4
2002 Aug .....	5.9	2.2	7.4	5.2	...	...	...	...
2003 Mar.....	9.8	0.6	22.5	-1.6	-8.9	-4.6	-7.1	2.8
Apr .....	10.0	0.0	21.6	6.3	...	...	...	...
May .....	8.1	-0.3	22.4	-1.6	...	...	...	...
Jun .....	9.3	0.7	22.5	8.0	-1.0	0.6	1.5	6.2
Jul .....	9.6	0.2	22.1	-7.6	...	...	...	...
Aug.....	8.7	1.7	22.7	-4.9	...	...	...	...

Note: As from 2003 the banks' lending is affected by the inclusion of an institution former belonging to the category of "Other Credit Institutions". Lending to households includes lending to self-employed individuals.

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

Table 6

End of period	Total balance	of which:				Debt securities issued
		Domestic lending <sup>1</sup>				
		Total	of which: Lending to households <sup>2</sup>	of which: Interest adjusted lending	of which: Lending in foreign currency	
Kr. billion						
1998 .....	1,172.2	987.8	731.0	...	1.4	1,122.4
1999 .....	1,222.9	1,050.9	785.8	59.7	9.6	1,116.2
2000 .....	1,341.1	1,095.4	830.2	99.8	15.5	1,212.9
2001 .....	1,579.5	1,191.8	907.6	245.7	54.5	1,421.3
2002 .....	1,721.8	1,284.6	988.0	365.0	82.5	1,584.2
2002 Aug .....	1,443.4	1,269.9	975.0	328.4	79.6	1,347.6
2003 Mar.....	1,623.6	1,321.3	1,019.2	400.7	86.4	1,532.7
Apr.....	1,513.7	1,329.0	1,023.8	410.7	87.0	1,439.6
May.....	1,562.9	1,343.0	1,034.5	416.3	87.5	1,488.0
Jun.....	1,631.4	1,350.4	1,039.8	426.1	88.9	1,532.8
Jul.....	1,572.0	1,359.1	1,046.8	434.2	88.8	1,484.1
Aug.....	1,607.6	1,368.4	1,054.7	440.3	88.8	1,499.6
Change compared with previous year. per cent						
1998 .....	11.1	8.6	10.4	...	...	8.1
1999 .....	4.3	6.4	7.5	...	...	-0.6
2000 .....	9.7	4.2	5.7	67.2	61.5	8.7
2001 .....	17.8	8.8	9.3	146.2	251.6	17.2
2002 .....	9.0	7.8	8.9	48.6	51.4	11.5
2002 Aug .....	11.8	10.5	12.8	102.0	155.9	12.8
2003 Mar.....	17.1	9.3	10.5	42.2	21.7	20.9
Apr.....	11.3	9.2	10.3	40.6	16.9	15.6
May.....	13.5	9.4	10.4	38.2	14.4	17.2
Jun.....	16.3	9.7	10.4	38.0	13.7	18.5
Jul.....	13.6	9.6	10.3	33.8	11.8	14.9
Aug.....	11.4	7.8	8.2	34.1	11.6	11.3

<sup>1</sup> The distribution of lending to households, interest adjusted lending and lending in foreign currency may coincide. Therefore, some lending has been included in more than more than one of the above categories.

<sup>2</sup> Lending to households includes lending to self-employed individuals.

## EXTERNAL FINANCIAL PAYMENTS (NET PAYMENTS FROM ABROAD)

Table 7

	Current payments	Capital transfers	Financial payments				Errors and omissions	Increase in the foreign-exchange reserve
			Total	of which:				
				Direct investments		Danish krone-denominated bonds		
				Foreign in Denmark	Danish abroad			
Kr. billion								
1999 .....	21.2	0.9	60.0	116.5	-118.2	14.7	-17.8	64.2
2000 .....	19.0	-0.1	-23.8	265.0	-202.5	-21.3	-38.1	-43.0
2001 .....	40.7	-0.2	-42.6	92.5	-107.9	-17.7	29.4	27.5
2002 .....	34.8	0.8	30.6	43.9	-35.7	8.5	-20.7	45.4
Sep 01 - Aug 02 .	31.5	-0.2	45.7	66.7	-52.7	-8.4	-9.0	68.2
Sep 02 - Aug 03 .	...	0.4	-6.4	16.1	-12.8	-3.1	...	36.6
2002 Aug.....	4.5	0.1	8.8	2.3	-1.9	6.8	-1.7	11.8
2003 Mar.....	1.6	0.0	9.7	-1.7	3.6	10.3	-10.1	1.2
Apr .....	0.8	0.1	8.9	3.6	-0.2	-13.9	-9.3	0.3
May .....	6.6	0.0	12.2	0.7	-1.4	-9.3	11.4	30.2
Jun .....	6.4	0.0	0.0	0.5	2.3	7.7	-1.4	5.1
Jul .....	3.9	0.0	-7.2	-0.7	-1.8	-12.4	1.7	-1.6
Aug.....	...	0.0	-11.3	-0.2	3.1	-8.2	...	-2.1

## GDP BY TYPE OF EXPENDITURE

Table 8

	GDP	Final domestic demand					Exports of goods and services	Imports of goods and services
		Private consumption	General-government consumption	Gross fixed capital formation	Change in inventories	Total		
		Kr. billion						
1998 .....	1,155.4	581.3	300.5	240.3	10.1	1,132.1	413.4	390.1
1999 .....	1,207.7	599.5	312.1	240.9	-2.6	1,149.9	459.6	401.8
2000 .....	1,280.8	608.7	323.8	266.4	5.4	1,204.2	567.3	490.7
2001 .....	1,325.3	626.5	342.9	268.5	1.6	1,239.5	597.4	511.7
2002 .....	1,365.2	653.9	358.7	268.9	2.8	1,284.2	613.3	532.3
2002 Q2 .....	345.8	163.4	89.8	69.6	4.4	327.3	154.3	135.8
Q3 .....	337.6	160.4	90.6	64.4	-0.2	315.3	154.3	132.0
Q4 .....	354.8	170.4	92.2	70.7	-2.9	330.4	157.8	133.4
2003 Q1 .....	336.9	164.9	89.6	63.2	1.3	318.9	152.0	134.0
Q2 .....	350.0	167.4	92.6	64.2	0.2	324.4	155.3	129.7
Real growth compared with previous year, per cent								
1998 .....	2.5	2.3	3.1	10.1	...	4.0	4.3	8.9
1999 .....	2.6	0.7	2.0	1.5	...	0.1	12.3	5.5
2000 .....	2.9	-1.9	1.1	8.6	...	1.9	13.0	11.3
2001 .....	1.4	0.4	2.1	1.9	...	0.9	3.0	1.9
2002 .....	2.1	1.9	2.1	0.3	...	1.2	5.8	4.2
2002 Q2 .....	3.4	1.7	3.1	-0.9	...	1.7	8.9	5.5
Q3 .....	1.6	2.2	1.1	2.0	...	1.0	6.8	6.1
Q4 .....	1.5	2.4	2.2	-0.9	...	0.7	4.7	3.3
2003 Q1 .....	1.5	0.9	2.6	0.2	...	1.7	3.9	4.6
Q2 .....	-0.8	0.5	0.2	-7.5	...	-1.7	0.1	-2.0
Real growth compared with previous quarter (seasonally adjusted), per cent								
2002 Q2 .....	1.4	-0.2	1.6	-0.3	...	0.9	1.7	2.2
Q3 .....	-0.5	0.6	-0.2	-0.1	...	-0.2	-0.4	0.0
Q4 .....	0.0	0.4	0.9	0.2	...	-0.5	-0.5	-1.4
2003 Q1 .....	0.4	-0.4	0.2	-1.3	...	1.1	1.5	2.7
Q2 .....	-0.5	0.3	-0.2	-5.0	...	-1.7	0.7	-2.0

PRINCIPAL ITEMS OF THE BALANCE OF PAYMENTS (NET REVENUES)

Table 9

	Goods (fob)	Services	Goods and services	Wages and property income	Current transfers	Total current account
	Kr. billion					
1998 .....	25.3	-2.0	23.3	-18.4	-15.2	-10.2
1999 .....	46.7	11.1	57.8	-17.4	-19.3	21.2
2000 .....	54.1	21.7	75.8	-32.1	-24.8	19.0
2001 .....	62.0	24.0	85.9	-24.9	-20.3	40.7
2002 .....	61.3	15.6	76.9	-22.0	-20.1	34.8
Aug 01 - Jul 02.....	61.1	15.7	76.8	-21.6	-21.5	33.7
Aug 02 - Jul 03.....	68.5	19.2	87.6	-24.1	-22.2	41.3
2002 Jul.....	3.0	1.6	4.7	-1.3	-2.3	1.0
2003 Feb.....	6.2	0.4	6.5	-0.5	-1.6	4.5
Mar.....	5.7	2.3	8.0	-3.5	-3.0	1.6
Apr.....	5.3	1.0	6.3	-3.3	-2.2	0.8
May.....	6.4	1.6	8.0	0.5	-1.9	6.6
Jun.....	7.3	1.7	8.9	-0.4	-2.1	6.4
Jul.....	4.5	2.5	7.0	-0.5	-2.6	3.9

## DEVELOPMENT IN CONSUMER PRICES AND NET RETAIL PRICES

Table 10

	Consumer-price index		Index of net retail prices	Energy	Imports	Domestic prices				
						Total	Food stuffs	Rent	Public services	IMI
	HICP	CPI	Weights							
			1.000	0.080	0.157	0.764	0.128	0.232	0.034	0.370
Year-on-year growth, per cent										
1998 .....	1.3	1.8	1.5	-2.8	0.6	1.9	1.8	2.1	-0.9	2.3
1999 .....	2.1	2.5	2.1	2.1	-0.3	2.5	0.6	2.7	3.5	2.9
2000 .....	2.7	2.9	3.1	19.5	4.3	1.7	2.4	3.1	3.7	0.1
2001 .....	2.3	2.4	2.4	-0.9	2.4	2.7	3.4	3.0	3.3	2.1
2002 .....	2.4	2.4	2.5	0.9	0.5	3.0	2.0	2.9	4.5	3.2
2000 Q1 .....	2.8	3.1	3.3	24.1	2.1	2.1	2.3	3.1	3.5	1.0
Q2 .....	2.9	3.2	3.4	21.6	4.1	2.0	3.2	3.4	3.7	0.3
Q3 .....	2.6	2.7	2.9	18.3	5.1	1.4	2.2	3.0	4.2	-0.5
Q4 .....	2.6	2.6	2.8	14.9	5.9	1.3	1.8	2.8	3.6	-0.3
2001 Q1 .....	2.3	2.4	2.5	2.2	4.6	2.2	2.8	2.9	3.3	1.2
Q2 .....	2.5	2.6	2.7	2.4	2.8	2.8	4.0	3.0	2.4	2.1
Q3 .....	2.3	2.4	2.4	-1.3	1.9	2.9	3.7	3.0	3.5	2.2
Q4 .....	2.0	2.1	2.0	-6.5	0.6	3.1	3.1	3.0	3.8	2.9
2002 Q1 .....	2.5	2.5	2.7	-0.7	0.1	3.4	3.4	3.1	3.9	3.6
Q2 .....	2.1	2.3	2.3	-0.3	0.5	2.8	1.6	3.1	4.5	2.9
Q3 .....	2.4	2.3	2.5	-0.2	0.5	3.0	1.4	2.8	4.2	3.6
Q4 .....	2.7	2.6	2.6	5.1	0.8	2.7	1.5	2.6	5.1	2.9
2003 Q1 .....	2.8	2.8	2.8	10.6	1.3	2.4	1.6	2.7	8.1	1.8
Q2 .....	2.2	2.3	2.4	-0.4	0.8	2.9	1.7	2.7	8.6	2.7

Note: Weighting basis of December 2002.

The index of net retail prices is the consumer price index adjusted for indirect taxes, duties and subsidies for general price reductions.

"IMI" is a measure of domestic market-determined inflation. "IMI" is normally larger than the increase in the index of net retail prices due to an overweight of services, for which the price development is typically stronger than for other commodities.

HICP is the Harmonised Index of Consumer Prices.

## EXCHANGE RATES

Table 11

	EUR <sup>1</sup>	USD	GBP	SEK	Effective krone rate	Real effective krone rate based on consumer prices
	Kroner per 100 units				1980=100	
	Average					
1998 .....	744.87	669.70	1,109.36	84.23	101.3	104.6
1999 .....	743.56	698.34	1,129.49	84.46	99.6	104.3
2000 .....	745.37	809.03	1,223.32	88.26	95.6	100.6
2001 .....	745.21	831.88	1,197.73	80.58	96.9	101.8
2002 .....	743.04	788.12	1,182.10	81.12	97.7	103.5
2002 Sep.....	742.71	757.30	1,177.83	81.02	98.2	104.2
2003 Apr .....	742.56	684.89	1,077.96	81.12	100.8	107.5
May .....	742.46	642.66	1,042.06	81.11	101.9	108.6
Jun.....	742.50	637.23	1,058.78	81.44	102.2	109.0
Jul.....	743.32	653.70	1,061.33	80.92	101.8	108.0
Aug.....	743.22	667.44	1,063.03	80.45	101.5	107.5
Sep.....	742.73	662.17	1,065.77	81.91	101.2	...

<sup>1</sup> In 1998 the euro rate has been calculated on the basis of the conversion rate between DEM og EUR fixed on 1 January 1999.

SELECTED MONTHLY ECONOMIC INDICATORS

Table 12

	Unemployment Per cent of labour force	Quantitative index for sales in sectors of		Forced sales of real property	Bankruptcies	New passenger car registrations	Consumer confidence indicator	Composite cyclical indicator for	
		Extraction of raw materials and manufacturing 2000=100	Retail trade 2000=100					Industry	Building and construction
1998 .....	6.6	94	98.2	2,426	1,652	162,708	2	-3	-2
1999 .....	5.7	95	99.3	2,397	1,636	144,259	-2	-11	-8
2000 .....	5.4	100	100.1	2,584	1,771	113,634	2	5	-1
2001 .....	5.2	102	100.6	2,682	2,329	96,116	0	-3	-11
2002 .....	5.2	103	103.7	3,041	2,469	111,615	1	-4	-14
Seasonally adjusted									
2002 Sep .....	5.3	103	105.1	249	209	9,828	1	-7	-18
2003 Apr .....	5.8	103	104.8	279	208	7,312	-3	-11	-24
May .....	6.0	104	104.5	230	207	7,494	0	-14	-22
Jun.....	6.2	103	106.5	236	164	7,634	0	-13	-20
Jul.....	6.0	103	...	248	216	8,187	0	-13	-19
Aug .....	...	...	...	285	218	7,829	2	-9	-13
Sep .....	...	...	...	...	...	...	-2	-6	-18

## SELECTED QUARTERLY ECONOMIC INDICATORS

Table 13

	Employment		Hourly earnings in manufactur- ing industry  Feb. 1996 =100	Real effective krone rate based on hourly earn- ings  1980=100	Property prices (purchase sum, one-family dwellings)  As a per- centage of property value 1995
	Total	Private			
	1,000 persons				
1998 .....	2,681	1,868	109.8	103.3	134.4
1999 .....	2,716	1,896	114.4	102.9	143.7
2000 .....	2,734	1,912	118.4	98.8	153.0
2001 .....	2,750	1,920	123.5	101.4	162.0
2002 .....	2,740	1,901	128.5	103.5	168.0
Seasonally adjusted					
2002 Q2 .....	2,749	1,909	127.7	102.7	168.4
Q3 .....	2,733	1,894	128.9	104.1	169.3
Q4 .....	2,729	1,892	130.7	104.8	169.3
2003 Q1 .....	2,713	1,874	132.2	106.7	169.0
Q2 .....	2,704	1,867	132.8	...	...
Change compared with previous year, per cent					
1998 .....	1.7	1.6	4.4	2.9	8.8
1999 .....	1.3	1.5	4.1	-0.4	6.9
2000 .....	0.7	0.9	3.5	-4.0	6.5
2001 .....	0.6	0.4	4.3	2.6	5.9
2002 .....	-0.4	-1.0	4.0	2.1	3.1
2002 Q2 .....	0.1	-0.5	3.7	2.1	4.0
Q3 .....	-0.8	-1.5	3.8	2.3	3.4
Q4 .....	-0.9	-1.4	4.3	2.4	4.2
2003 Q1 .....	-1.3	-1.7	4.4	4.5	2.4
Q2 .....	-1.6	-2.2	4.0	...	...

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