Danmarks Nationalbank

Monetary Review 2nd Quarter

2005

DANMARKS NATIONAL BANK 2005

MONETARY REVIEW 2nd QUARTER 2005

The small picture on the front cover is a section of the commemorative coin to mark the wedding of HRH Crown Prince Frederik and Miss Mary Donaldson on 14 May 2004. The wedding portrait was designed by the sculptor Karin Lorentzen.

The Monetary Review is available on Danmarks Nationalbank's website:
www.nationalbanken.dk under publications.

Managing Editor: Jens Thomsen
Editor: Anders Møller Christensen

This edition closed for contributions on 17 May, 2005.

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.
Inquiries: Monday-Friday 9.00 a.m.-4 p.m.
E-mail: info@nationalbanken.dk

SCHULTZ GRAFISK A/S
ISSN 0011-6149
(Online) ISSN 1398-3865

Contents

Recent Economic and Monetary Trends

This review covers the period from February to the middle of May 2005

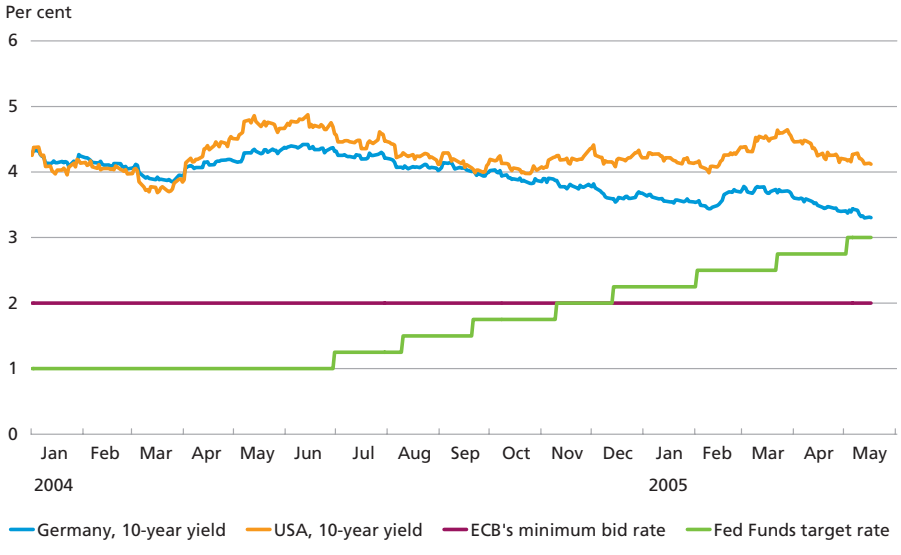
INTERNATIONAL FINANCIAL CONDITIONS

Growth in the world economy is generally robust, with high growth rates in the USA and most of Asia. In the euro area, growth has been disappointing and is still sluggish in view of the weak domestic demand. The expectations in the interest-rate market point to a deferral of monetary-policy tightening in the euro area, whereas further tightening this year is expected in the USA.

Financial markets

The varying economic outlook in, respectively, the USA and the euro area has contributed to widening the spread between yields on 10-year government bonds in the first part of 2005, cf. Chart 1. Since the turn of

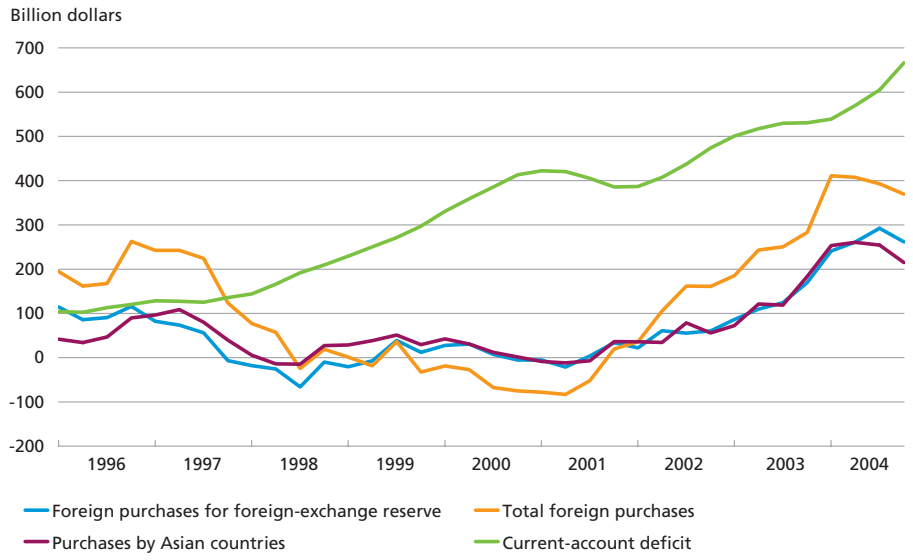
OFFICIAL INTEREST RATES AND LONG-TERM YIELDS IN GERMANY AND THE USA — Chart 1



Note: 10-year yields are government bond yields. The latest observation is from 17 May 2005.
Source: EcoWin.

NET FOREIGN PURCHASES OF US GOVERNMENT BONDS AND THE US CURRENT-ACCOUNT DEFICIT

Chart 2



Note: Four-quarter moving sums.
Source: Bureau of Economic Analysis and US Treasury.

the year, the yield on a 10-year US government bond has declined by around 10 basis points to 4.1 per cent in mid-May, while the German yield has fallen by approximately 40 basis points to 3.3 per cent.

In response to market interpretations of statements from the Federal Reserve and ambiguous key indicators, the movements in long-term US yields have been influenced by shifting expectations of the rate of growth and of the rate at which the Federal Reserve will increase the Fed Funds target rate.

Overall, long-term yields in the USA have fallen since the Federal Reserve gradually began to increase the Fed Funds target rate in mid-2004. This is unusual compared to previous periods of monetary-policy tightening, when long-term yields have typically increased. Core inflation (consumer-price inflation excluding food and energy) has also risen. Long-term inflation expectations are, however, stable, cf. Box 1. Purchases of US government bonds by Asian central banks have contributed to keeping long-term yields down, but there are indications of a slowdown in the central banks' purchases of US government bonds, cf. Chart 2.

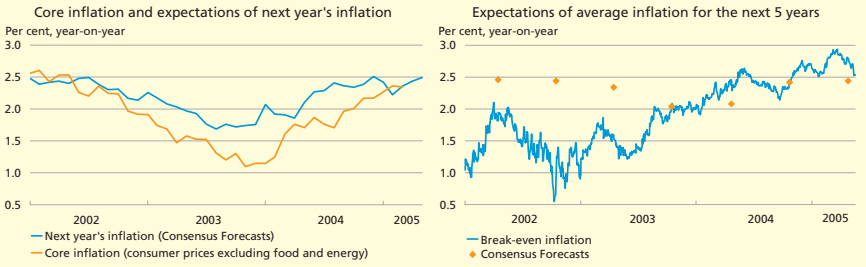
Another factor contributing to the low long-term yields is rising structural demand for long-term securities from pension companies. A number of changes in the regulation of the pension sector appear to be forthcoming in the USA and Europe. The aim is for pension companies to improve their hedging of their pension obligations to policyholders.

US INFLATION EXPECTATIONS — Box 1

A widely used indicator of inflation expectations is the difference between the yields to maturity for, respectively, a nominal government bond and an inflation-indexed government bond with an equivalent term to maturity, also known as the break-even inflation. Break-even inflation expresses the average compensation over the term of the bond that investors receive when investing in nominal bonds compared to indexed bonds in return for waiving insurance against inflation. In addition to expectations of the average inflation over the term of the bond, break-even inflation also contains a (positive) inflation risk premium and a (negative) liquidity premium. It can therefore be useful to compare with opinion surveys of inflation expectations among market participants, e.g. Consensus Forecasts.

Expectations of next year's inflation and the average inflation over the next five years in the USA have increased in step with core inflation (consumer price inflation excluding energy and food), cf. the Chart below.

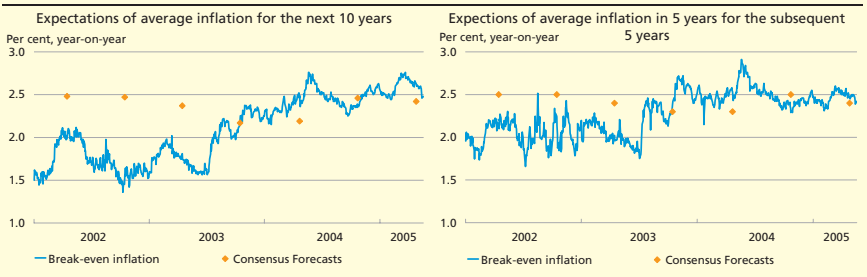
CORE INFLATION AND SHORT-TERM INFLATION EXPECTATIONS



Source: EcoWin and Consensus Economics. The latest observation for break-even inflation is from 17 May 2005.

The development in expectations of inflation in the longer term has been more subdued. Break-even inflation for 10-year bonds has been below the break-even inflation for 5-year bonds since the autumn of 2004, and expectations of average inflation in five years for the subsequent five years have remained more or less unchanged, cf. the Chart below. The stability in the long-term inflation expectations may reflect confidence in the market that the Federal Reserve will ensure price stability.

LONG-TERM INFLATION EXPECTATIONS



Source: EcoWin and Consensus Economics. The latest observation for break-even inflation is from 17 May 2005.

Higher pension savings as a result of the demographic development also creates a demand for long-term bonds.

In February 2005, France opened a 50-year government bond, and other European countries have similar considerations. In the period up to mid-May the yield on the 50-year bond was only a few basis points above the yield on French 30-year government bonds.

At around 1.36 dollars per euro at the turn of the year, the dollar was at the weakest level vis-à-vis the euro since the introduction of the euro on 1 January 1999. Subsequently the dollar has appreciated, to 1.26 dollars per euro in mid-May. The dollar has also strengthened vis-à-vis the yen.

OIL FUTURES PRICES — Box 2

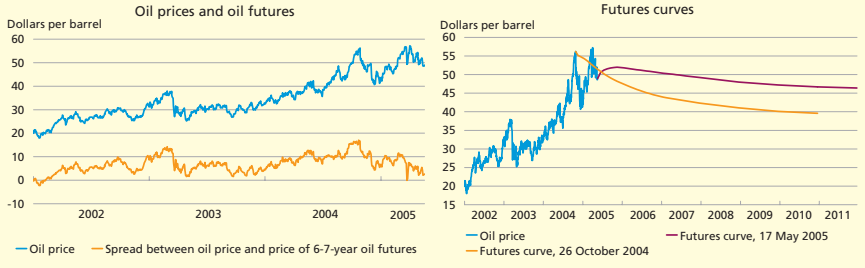
Oil futures prices are often used as an indicator of market expectations of the future development in oil prices.

The futures price typically declines with the maturity of the futures contract, reflecting that it may entail value for business enterprises – e.g. in order to ensure supplies – to stock oil rather than to operate with futures contracts.

In connection with rising oil prices, e.g. resulting from uncertainty as to supplies, the futures curve tends to bend further downwards if the price rises are perceived as temporary. However, if oil prices are expected to remain higher, the futures price tends to go up too.

At the end of October 2004 oil prices were at a higher level than in mid-May 2005, but futures prices were lower. In other words the futures curve has flattened, cf. the Chart below. This may reflect that futures prices have reacted to what is seen as a more permanent development in the oil price.

OIL PRICES, OIL FUTURES AND OIL FUTURES CURVES



Note: WTI (West Texas Intermediate) oil. The latest observation is from 17 May 2005.
Source: EcoWin.

In recent years, futures prices have repeatedly underestimated the rise in oil prices. In a long-term perspective there are, however, no indications that futures prices systematically underestimate or overestimate actual developments. Empirical analysis indicate that the futures price predicts the development in oil prices better than a simple assumption that the expected future oil price is the same as the oil price today, cf. the ECB's Monthly Bulletin, December 2004, and the IMF's World Economic Outlook, April 2005.

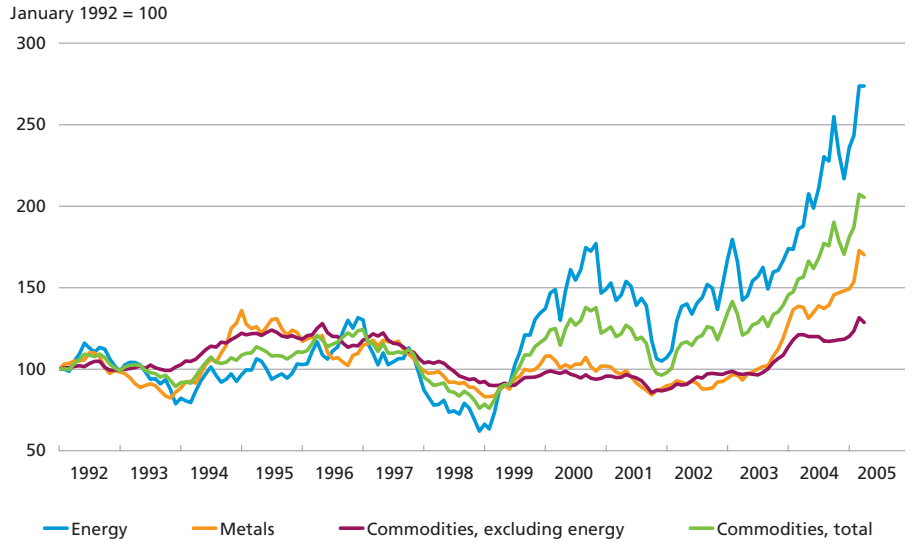
Like the US yields, the dollar was influenced by the ambiguous key indicators and shifting expectations of monetary-policy tightening.

Announcements of sound earnings in US companies had a positive impact on the US stock market, while the generally rising oil prices and uncertainty concerning the growth rate of the US economy seem to have had a negative effect on stock prices. In mid-May the US S&P 500 index was around 3 per cent lower than at the turn of the year, while the European Stoxx 600 index was just over 3 per cent higher.

International commodity markets

The rise in commodity prices that began in 2002 has continued into 2005. Particularly energy prices have gone up. At 56 dollars per barrel (Brent), oil prices reached a new record level in nominal terms in March 2005, against the background of a surge in oil consumption driven by sustained high global economic growth, cold weather in the northern hemisphere and uncertainty concerning OPEC's production plans. Subsequently the oil price has fallen, but was still at a high level in mid-May. The oil futures price indicates that market participants expect oil prices to remain high in the coming years, cf. Box 2. For commodities excluding energy the price development in metals such as copper and aluminium, which are particularly sensitive to cyclical fluctuations, has been strong, cf. Chart 3. The explanation is, *inter alia*, small stocks and high demand, particularly from China.

DEVELOPMENT IN THE DOLLAR PRICE OF COMMODITIES — Chart 3



Note: IMF's commodities index from International Financial Statistics.
Source: EcoWin.

THE INTERNATIONAL ECONOMY

USA

The robust economic growth in the USA has continued in 2005, but at a lower pace than in 2004 when GDP rose by 4.4 per cent for the full year. In the 1st quarter of 2005, GDP growth was 0.8 per cent over the preceding quarter, while it was 0.9 per cent in the 4th quarter of 2004. Growth in the 1st quarter was still driven by domestic demand, the largest contribution stemming from private consumption, while growth in investments declined somewhat. Private consumption is supported by job growth and rising housing prices, and corporate investments by sound earnings and low financing costs. Consensus expectations of GDP growth in 2005 are 3.4 per cent.

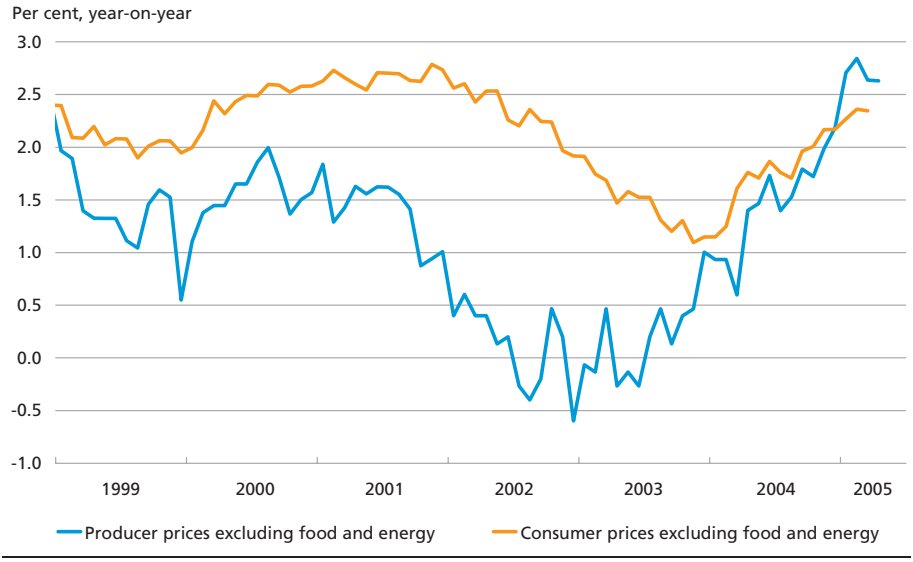
The growth in domestic demand and the high oil prices have contributed to large balance-of-trade and current-account deficits. Improved competitiveness as a result of the weakening of the dollar up to the turn of the year will not change this significantly. Even if the federal budget improves as envisaged, the external balance problems will at some point in time require an increase in private savings.

The labour market continued to pick up at the beginning of 2005. Employment rose by almost 0.8 million in the first four months, following an increase by 2.2 million in 2004. The unemployment rate was 5.2 per cent in April, compared to 5.4 per cent in December 2004. Wage growth is still subdued even though unemployment is diminishing.

Consumer price inflation has increased in 2005, pushed up by rising energy prices. In March consumer prices were 3.1 per cent higher than in the same month of 2004. Since the beginning of 2004 an upward trend has been seen in underlying inflation. Consumer prices excluding energy and food thus rose by 2.3 per cent year-on-year in March 2005, compared to approximately 1 per cent at the beginning of 2004, cf. Chart 4. The prices of goods have increased in particular, reflecting the higher oil prices and the weakening of the dollar, while the rate of increase for services has been more or less stable. Producer prices excluding energy and food are increasing at a faster rate, which could be an early indication of higher inflation. Higher capacity utilisation and falling unemployment may also contribute to inflationary pressure. The Federal Reserve has pointed out that business enterprises now seem to have a wider scope in their setting of prices. Since earnings are sound, business enterprises can to some extent offset higher costs by lowering profit margins.

In May the Federal Open Market Committee increased the Fed Funds target rate by 25 basis points for the 8th consecutive time, to 3 per cent

INFLATION DEVELOPMENT IN THE USA Chart 4



Note: The latest observation for producer prices is from April 2005. The latest observation for consumer prices is from March 2005.
Source: EcoWin.

at present. The Federal Reserve has thus continued to normalise the level of interest rates at a measured pace after a period of highly expansionary monetary policy.

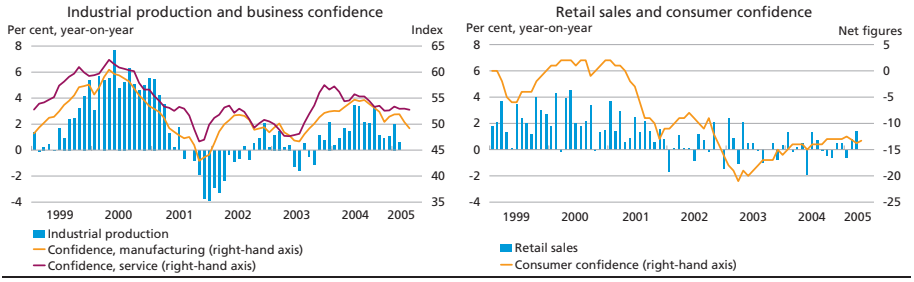
The euro area

Growth in the euro area has been disappointing in view of weak development in domestic demand. GDP growth was 2.1 per cent in 2004, but clearly declined over the year. Quarterly growth in the 4th quarter of 2004 was a modest 0.2 per cent. In the 1st quarter of 2005, quarterly growth was 0.5 per cent. The higher rate of growth in the 1st quarter of 2005 compared to the 4th quarter of 2004 is presumably to some degree attributable to a low starting point following statistical adjustments for working days in Germany in the 4th quarter of 2004.

The weak domestic demand in the euro area to a large extent reflects the situation in the largest economy in the area, Germany, where growth in private consumption has stagnated. Consumption growth has also been sluggish in Italy and the Netherlands, while there has been robust growth in France and Spain.

Consumer confidence in the euro area overall is relatively low, cf. Chart 5, and unemployment is high at almost 9 per cent. However, employment rose slightly during 2004, primarily as a result of growth in the service sector and an increase in government-subsidised jobs in

BUSINESS AND CONSUMER INDICATORS IN THE EURO AREA Chart 5



Note: Business confidence is the Reuters Purchasing Manager Index (PMI) for the manufacturing and service sectors. An index value of 50 is equivalent to unchanged production. Consumer confidence is based on the European Commission's index. Industrial production is excluding construction.

Source: EcoWin.

Germany. There is an evident need for structural reform of the German labour market and welfare system.[1] An number of labour-market reforms have been adopted with a view to reducing unemployment, but the related uncertainty may have a dampening effect on consumption.

In spite of the low level of interest rates and sound corporate earnings, which support investments, indicators of activity in the industrial and service sectors point to continued subdued growth. Confidence indicators for the industrial sector fell in March and April, cf. Chart 5.

At 1.9 per cent in January, the annual increase in the Harmonised Index of Consumer Prices (HICP) was in accordance with the ECB's intermediate target of inflation close to but below 2 per cent. However, rising energy prices subsequently pushed inflation above 2 per cent. Core inflation, i.e. inflation adjusted for energy, food, alcohol and tobacco, has been below 2 per cent for the last couple of years. Wage increases have also been subdued.

In the assessment of the ECB there are no clear indications that underlying inflationary pressure is building up in the euro area, and the ECB has not adjusted its interest rate (the minimum bid rate) since June 2003.

In March 2005 the Ecofin Council adopted a report on improving the implementation of the Stability and Growth Pact on the basis of input from, *inter alia*, the European Commission. The European Council subsequently approved the report by the Ecofin Council. The report updates and supplements the Stability and Growth Pact, comprising a resolution of the European Council and two Council regulations.[2] In connection with the actual implementation of the conclusions in the report, the

1 Cf. Niels C. Beier and Michael Sand, The German Labour Market, pages 43ff.

2 The resolution of the European Council and the two Council regulations, adopted in June and July 1997, cf. the Official Journal C 236, 2 August 1997, and the Official Journal L 209, 2 August 1997, have been in force since the introduction of the euro as the single currency in a number of EU member states from 1 January 1999.

Commission on 20 April 2005 presented a proposal to amend the two Council regulations. The proposal must subsequently be considered by the Ecofin Council.

The adjustments to the Pact make it easier to exempt member states from the prohibition against government budget deficits exceeding 3 per cent of GDP in the event of low economic growth. In addition, the time limit for correction of excessive government budget deficits is extended. At the same time, the Pact's procedures have been adjusted to include more specific requirements for consolidation of government budgets in periods of economic growth in member states where the budget is not close to balance or in surplus. This can contribute to strengthening the principle that the government budgets should be close to balance or in surplus under normal circumstances in order to prevent excessive deficits in periods of economic slowdown.

The significance of these amendments to the fiscal policies of EU member states will depend on how the revised rules are applied in practice.

The amendments to the Stability and Growth Pact will be discussed in more detail in the annual status article on the Pact in the next issue of the Monetary Review.

In the European Commission's spring forecast for the budget deficits of the EU member states, the deficits of five euro area member states – France, Germany, Greece, Italy and Portugal – are expected to exceed or be equivalent to the Treaty's limit for budget deficits of 3.0 per cent of GDP in 2005.

Asia

After disappointing economic development in 2004, when growth came to a standstill, Japan saw strong domestically driven growth in the 1st quarter of 2005, with GDP rising by 1.3 per cent on the preceding quarter.

Unemployment has fallen from around 5.5 per cent a few years ago to 4.5 per cent in March, and employment has been more or less constant in the last few years.

Consumer prices have continued to decline slightly in 2005. In March consumer prices were down by 0.2 per cent compared to the same month of 2004. The fall is partly attributable to deregulation of the electricity and telephone market.

The strong economic growth in China has continued into 2005, with GDP in the 1st quarter 9.5 per cent higher than in the same quarter of 2004.

After the lifting of restrictions on textile trade from 1 January 2005, European and US interest groups representing textile manufacturers have called for limitations on growth in imports from China. The US

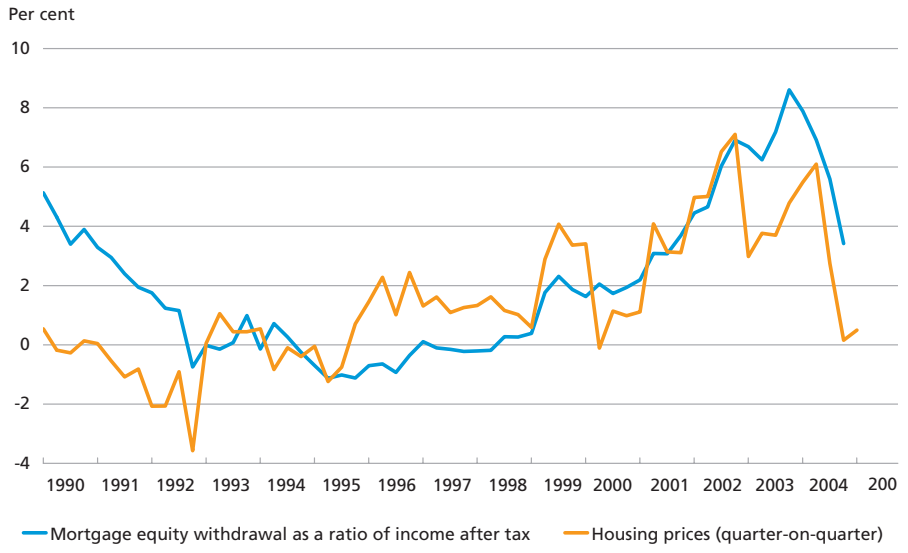
administration and the European Commission have both announced that the issues relating to textile imports from China will be investigated further. The Chinese government has introduced export duties on certain textile categories, and the Chinese textile industry has introduced minimum export prices.

UK

Following average GDP growth of 3.1 per cent in 2004 and quarterly growth of 0.7 per cent in the 4th quarter, growth in the 1st quarter of 2005 was 0.6 per cent, according to the preliminary national accounts. The development in retail sales in the 1st quarter points to a dampening of consumption, partly as a result of a flattening out of house prices since the summer of 2004. The Bank of England regularly compiles the proportion of loans secured on dwellings that is not invested in the housing market, i.e. applied to private consumption or the reduction of other financial debt. This mortgage equity withdrawal as a ratio of household income after tax showed a declining tendency in 2004, cf. Chart 6.

The labour market is tight with sustained growth in employment and sound wage increases. So far the impact of the tight labour market on inflation has been limited. Consumer prices (HICP) rose by 1.9 per cent in

INCREASE IN HOUSING PRICES AND MORTGAGE EQUITY WITHDRAWAL Chart 6



Note: Mortgage equity withdrawal indicates net borrowing secured on dwellings less the households' residential investments, net purchase of land and removal costs. The latest observation for mortgage equity withdrawal is from the 4th quarter of 2004. The latest observation for housing prices is from the 1st quarter of 2005.
Source: Bank of England and EcoWin.

April, which is close to the government's inflation target of 2 per cent. The Bank of England has not changed its base rate since August 2004, when it was raised to 4.75 per cent.

Sweden

The Swedish economy is characterised by robust growth. Quarter-on-quarter GDP growth declined to 0.3 per cent in the 4th quarter of 2004, compared to 0.7 per cent in the 3rd quarter. For the full year, growth was 3.5 per cent. Private consumption and not least investments rose in the 4th quarter. Investments are stimulated by the low level of interest rates, high capacity utilisation in the manufacturing sector and sound corporate earnings. The growth in retail sales in the first months of 2005 indicates a continued increase in private consumption. Indicators for industry seem to point to declining export growth.

Against the background of high productivity growth, employment has remained unchanged in the last year. Inflation is still low. This can be attributed to a combination of moderate wage increases, high productivity growth and lower prices for imported goods. Inflation (UND1X) was 0.5 per cent in March, which is below Sveriges Riksbank's target zone of 1-3 per cent. Official interest rates have remained unchanged since April 2004.

Norway

Economic growth is high in Norway. In mainland Norway GDP in the 4th quarter of 2004 grew by 1.3 per cent on the preceding quarter, and average growth in 2004 was 3.5 per cent. Growth is domestically driven by investments and private consumption.

As a result of increased productivity, the development in employment has been sluggish. Inflation is at a low level due to falling prices for imported consumer goods, as well as strong competition and productivity growth in a number of sectors.

Inflation is significantly below Norges Bank's target of 2.5 per cent. The official interest rate has remained unchanged at 1.75 per cent since March 2004.

DEVELOPMENT IN THE DANISH FINANCIAL MARKETS

In the period from February to mid-May the krone was stable vis-à-vis the euro at a level slightly stronger than the central rate in ERM II of 7.46038 kroner per euro. During this period Danmarks Nationalbank occasionally sold and bought foreign exchange with a view to stabilising the krone. Three new member states joined ERM II in May 2005, cf. Box 3.

THREE NEW MEMBER STATES JOIN ERM II Box 3

On 2 May 2005, Cyprus, Latvia and Malta joined the EU's exchange-rate mechanism, ERM II, as part of their preparations for euro area membership. The Table below shows the fixed central rate and the fluctuation bands of +/- 15 per cent for the new currencies. All ERM II members have fluctuation bands of +/- 15 per cent except Denmark, which has a fluctuation band of +/- 2.25 per cent.

Prior to joining ERM II, the Latvian lats was pegged to the euro with a fluctuation band of +/- 1 per cent. Latvia continues with a fluctuation band of +/- 1 per cent in relation to the central rate vis-à-vis the euro, but this is a unilateral commitment within the framework of ERM II. Before joining ERM II, the Maltese lira was pegged to a basket of currencies. After joining ERM II, Malta keeps the exchange rate of the lira at the central rate vis-à-vis the euro as a unilateral commitment.

The euro is at the core of ERM II, and the other participating currencies have central rates vis-à-vis the euro, but not against each other. The obligation to intervene if a participating currency reaches a fluctuation margin rests solely on the central bank of the relevant member state and the ECB. The other member states have no obligation to intervene.

The inclusion of the new currencies does not entail any changes in the central rate, fluctuation band and other terms for the Danish krone in ERM II.

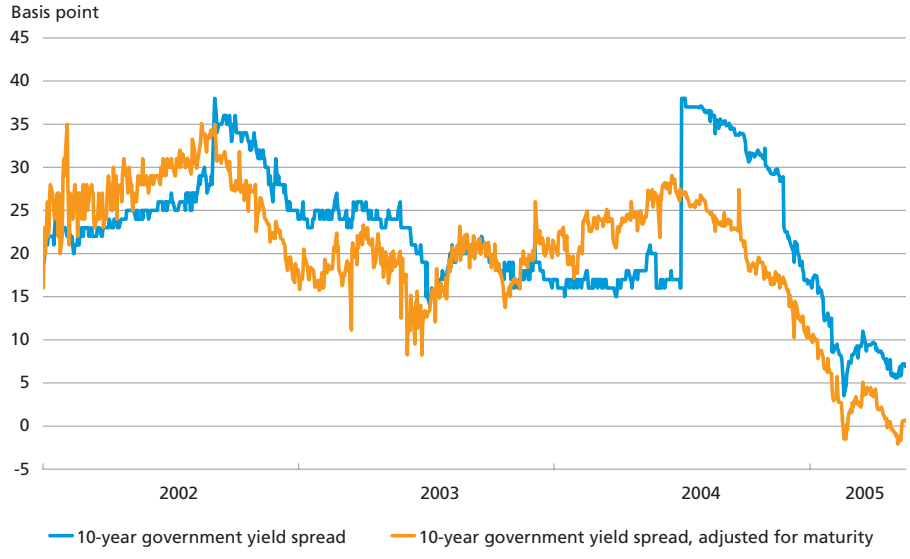
CENTRAL RATE AND FLUCTUATION BANDS IN ERM II

National currency units per euro	Upper margin	Central rate	Lower margin	Fluctuation band in per cent
Danish krone	7.62824	7.46038	7.29252	+/- 2.25
Estonian kroon	17.9936	15.6466	13.2996	+/- 15
Cypriot pound	0.673065	0.585274	0.497483	+/- 15
Latvian lats	0.808225	0.702804	0.597383	+/- 15
Lithuanian litas	3.97072	3.45280	2.93488	+/- 15
Maltese lira	0.493695	0.429300	0.364905	+/- 15
Slovenian tolar	275.586	239.640	203.694	+/- 15

Like the ECB, Danmarks Nationalbank has not changed its interest rates since June 2003. The current-account rate and the discount rate are 2 per cent, and the certificate of deposit rate is 2.15 per cent.

The 10-year yield spread between Denmark and Germany has narrowed since mid-2004 and is now close to zero, cf. Chart 7. One reason may be that the supply of Danish long-term bonds has been reduced in recent years, primarily because the proportion of short-term bonds for financing adjustable-rate loans has increased. In addition, lower interest rates have reduced the duration of callable mortgage-credit bonds. At the same time, there is a demand for long-term bonds from life-insurance companies and pension funds, which have long-term pension and guarantee commitments. The narrow yield spread should also be viewed against the background of the Danish economy, with low

10-YEAR YIELD SPREAD BETWEEN DENMARK AND GERMANY — Chart 7



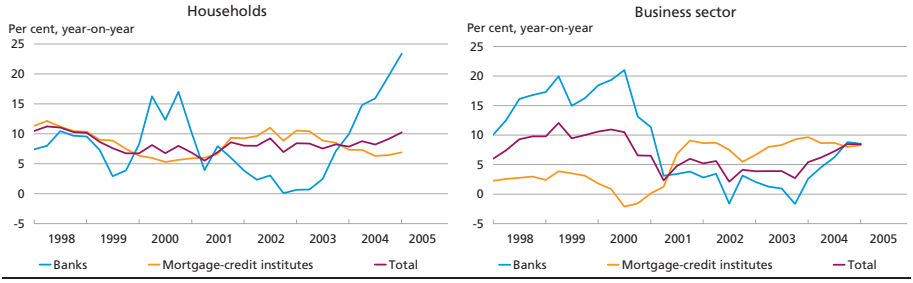
Note: The yield spread adjusted for maturity is based on yields to maturity for synthetic government bonds with a term to maturity of exactly 10 years and consequently does not leap on a switch of benchmark bond in the Danish or German bond market. The latest observation is from 17 May 2005.
Source: Bloomberg and Danmarks Nationalbank.

inflation, sound growth and the prospect of sustained government surpluses and thus lower government debt.

In March 2005, lending by banks and mortgage-credit institutes to households and the business sector was approximately 10 per cent higher than in the preceding year. Growth has been strongest in lending by banks, cf. Chart 8. In particular, the growth in bank lending for housing purposes has increased in connection with the more widespread use of bank loans against the home as collateral ("prioritetslån").

The popularity of capped adjustable-rate loans has soared since loans with a cap for up to 30 years were introduced in October 2004. The out-

BANKS' AND MORTGAGE-CREDIT INSTITUTES' LENDING GROWTH IN DENMARK — Chart 8



Note: The banks' lending includes lending by foreign units.
Source: Danmarks Nationalbank.

HOUSEHOLDS' BORROWING FROM DANISH BANKS AND MORTGAGE-CREDIT INSTITUTES

Table 1

End of	Kr. billion				Percentage of loans, total			
	Dec. 2002	Dec. 2003	Dec. 2004	Mar. 2005	Dec. 2002	Dec. 2003	Dec. 2004	Mar. 2005
Mortgage-credit loans								
Fixed-rate with amortisation	697	679	592	538	56	51	40	36
Fixed-rate without amortisation	0	3	32	43	0	0	2	3
Variable-rate with amortisation	291	334	341	379	23	25	23	25
Variable-rate without amortisation	0	56	177	209	0	4	12	14
Mortgage-credit loans, total	988	1,072	1,141	1,169	80	80	78	77
Bank loans								
For housing purposes	58	69	109	112	5	5	7	7
Other bank loans	196	203	216	232	16	15	15	15
Bank loans, total	254	272	325	343	20	20	22	23
Loans, total	1,242	1,344	1,466	1,513	100	100	100	100

Note: Households include the self-employed. The distribution of fixed-rate loans, variable-rate loans and loans with and without amortisation is partly estimated on the basis of the distribution of mortgage-credit loans by real estate category and loan type. Fixed-rate loans include index-linked loans.

Source: Danmarks Nationalbank.

standing volume of bonds for financing such loans was kr. 112 billion at the end of the 1st quarter of 2005. New types of capped adjustable-rate loans have been introduced in 2005.

There seems to be increased product competition and focus on market shares in the mortgage-credit market. In combination with the slightly lower interest rates this meant that prepayments on the April settlement date amounted to no less than kr. 120 billion. Previously, when the mortgage-credit market was dominated by fixed-rate bonds, greater interest-rate fluctuations were generally required to trigger loan conversions.

In recent years, adjustable-rate mortgage loans and variable-rate bank loans have increased the households' exposure to rising short-term interest rates, cf. Table 1. The introduction of adjustable-rate loans with a cap for up to 30 years is the latest factor contributing to a higher proportion of variable-rate loans. Compared to uncapped adjustable-rate loans, the cap does, however, shield homeowners against large increases in short-term interest rates.

THE DANISH ECONOMY

The Danish economy is in a domestically driven upswing, which set in during the summer of 2003 and is primarily fuelled by private consumption. At 4.3 per cent in 2004, growth in private consumption was the highest for 10 years. Consumption growth accelerated during the year, and in the 4th quarter consumption was 2.9 per cent higher than in the

preceding quarter. The rise in consumption is seen across the board, but especially in car purchases by households.

Gross fixed investments rose by 4.7 per cent in 2004. Growth in machinery investments was particularly high and rose over the year, reflecting the rollout of new technology. Building activity also boomed. Construction investments in a number of years up to 2004 have been revised in the national accounts.

The strong growth in demand in 2004 was directed especially at imports, which rose by 7.4 per cent, while domestic production in GDP terms increased by 2.4 per cent. The growth in output did not lead to a substantial rise in employment in 2004, but unemployment did fall, and this development has accelerated in 2005, with unemployment down from 6.1 per cent in December 2004 to 5.9 per cent in March 2005.

As is normally the case, the labour market has reacted to the development in activity with a certain time lag. The Government Platform from February lists a number of opportunities for increasing the supply of labour that can be rapidly transposed into concrete proposals. In the short term this will ensure greater harmony in the economy so that output can increase at more or less the same pace as demand. In the longer term concrete initiatives are inevitable so as to avoid a heavier tax burden or a public sector that does not match the time when the ageing of the population leads to a higher percentage of retired people.

Public consumption increased by 0.7 per cent overall in 2004, which is slightly higher than the government's target of 0.5 per cent.

Following substantial growth in the 1st half of 2004, the development in exports slowed down in the 2nd half-year. This coincided with a downturn in growth in the export markets, particularly the euro area, while the effective krone rate has fluctuated only marginally for a sustained period. External trade statistics show that the value of exports of goods was virtually unchanged in the 1st quarter of 2005 compared to the end of 2004.

The current-account surplus was kr. 37 billion in 2004, of which almost kr. 16 billion was attributable to sea transport. The surplus was thus down by kr. 9 billion compared to 2003. The surplus from trade in energy in 2004 was in the range of kr. 17 billion, but the total effect on the balance of payments is smaller. Most of the surplus after tax accrues to foreign investors, since Dansk Undergrunds Konsortium, which extracts gas and oil from the North Sea, is predominantly in foreign ownership. The current-account surplus was kr. 8 billion in the 1st quarter of 2005. A new compilation method for the current account of the balance of payments makes it difficult to compare monthly figures from 2005 with previous years, cf. Box 4.

NEW COMPILATION OF THE CURRENT ACCOUNT OF THE BALANCE OF PAYMENTS Box 4

As from 1 January 2005 the current account of the balance of payments is compiled in a new way. The changes mainly pertain to the service and investment income items. The data break means that caution should be exerted when comparing with the same month in previous years. For the 4th quarter of 2004, Statistics Denmark has compiled the current account of the balance of payments using both the new and the old method, cf. the Table below. It is seen that the two compilations differ considerably on a monthly basis, which is mainly attributable to services and wages and investment income.

OLD VERSUS NEW COMPILATION – 4TH QUARTER 2004

	October 04		November 04		December 04	
Main items, net income, kr. billion	Old	New	Old	New	Old	New
Goods	5.7	5.1	6.2	6.1	3.7	3.7
Services	1.0	1.6	0.7	1.9	0.5	3.0
Wages and investment income	-1.5	-1.2	-5.2	-1.0	-0.5	-1.0
Transfers	-2.2	-2.2	-1.6	-2.2	-2.4	-1.9
Current account, total	3.1	3.4	0.2	4.8	1.3	3.8

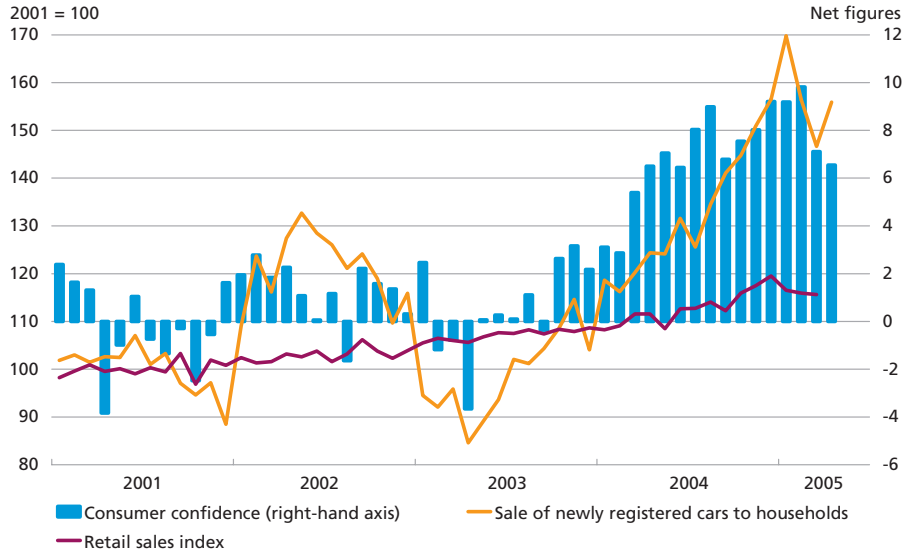
Note: The new compilation for the 4th quarter of 2004 is estimated. Due to rounding the subitems do not necessarily add up to "Current account, total".
Source: Statistics Denmark, StatBank Denmark.

External trade in services is now compiled in a new way. Previously, data was sourced from Danmarks Nationalbank's payment statistics, which ceased at the turn of the year. Instead Statistics Denmark now sends out questionnaires. Approximately 400 enterprises report on a monthly basis and approximately 1,200 on a quarterly basis. The source material on which the compilation of the Travel sub item is based has also been changed and expanded. In the longer term, the new source material will make it possible to compile external trade in services with a greater level of detail and a better geographical breakdown. As the Table above illustrates, the surplus on trade in services was higher in the 4th quarter of 2004 if the new compilation method is applied.

The treatment of investment income has shifted from a payment to an accrual principle. One of the results of the new principle is that the deficit from wages and investment income in the 4th quarter is estimated to be lower when applying the new compilation method, cf. the Table above. In the 4th quarter, interest payments to abroad were considerable, and in the old compilation this is fully reflected at the time of payment, which is not the case when the new method is applied. Investment income is now compiled on the basis of Danmarks Nationalbank's new data compilation for the financial items and the capital account. The compilations are chiefly based on a number of financial statistics, of which the MFI and securities statistics are the most important. In addition, they are based on reporting by approximately 750 enterprises that have significant financial accounts with abroad.

With regard to the remaining current-account items, i.e. trade in goods, wages and transfers, only minor adjustments have been made.

INDICATORS OF PRIVATE CONSUMPTION Chart 9



Note: Retail sales is the seasonally adjusted volume index.
Source: Statistics Denmark.

The domestic preconditions for a sustained upswing seem to be present. Interest rates are low, and disposable incomes are still rising. Another significant contribution comes from low increases in consumer prices. The robust housing market and the new loan products presumably help to increase the propensity to consume.

Consumption indicators are at a high level and point to continued robust development in consumption, although there may be signs of dampened growth compared to the high level at the end of 2004, cf. Chart 9. Dankort (debit card) transactions point in the same direction, cf. Box 5.

Housing prices have accelerated since 2003. The annual rate of price increase for single-family and terraced houses in the 1st quarter of 2005 was the highest since 1998, and prices for owner-occupied flats and summer cottages have risen even more, cf. Chart 10.

The soaring real-estate prices are undoubtedly attributable especially to increasing real income after tax in the private sector and falling long-term interest rates. In addition, the option to defer amortisation implies that real-estate purchases and savings are now less closely linked. This has presumably augmented demand and thereby prices. The limited supply of new building plots in certain areas has helped to underpin price development, e.g. in Greater Copenhagen. Finally, an upper limit on property value tax has presumably been reflected in higher prices.

The low level of enforced sales confirms that the finances of the households are generally sound.

DANKORT TRANSACTIONS AS AN INDICATOR OF RETAIL SALES Box 5

Today, a substantial proportion of Danish retail sales payments are effected using the Dankort (debit card). Approximately one week after the expiry of a month, Dankort A/S publishes the value of that month's Dankort transactions. Statistics Denmark's index of the value of retail sales is published with a slightly greater time lag (available approximately 30 days after the reference month). Consequently, Dankort transactions can be used as an early indicator of retail sales.

The left half of the Chart below shows annual growth rates in the value index for retail sales, as well as Dankort transactions. The covariation between the two series is evident – high year-on-year growth in Dankort transactions often coincides with high year-on-year growth in retail sales. The fact that Dankort transactions generally increase at a higher rate than retail sales indicates that ever more purchases of goods by households are paid for using the Dankort. The low growth in Dankort transactions in January and February 2005 reflects that during these two months many shops charged a fee of kr. 0.50 per transaction.

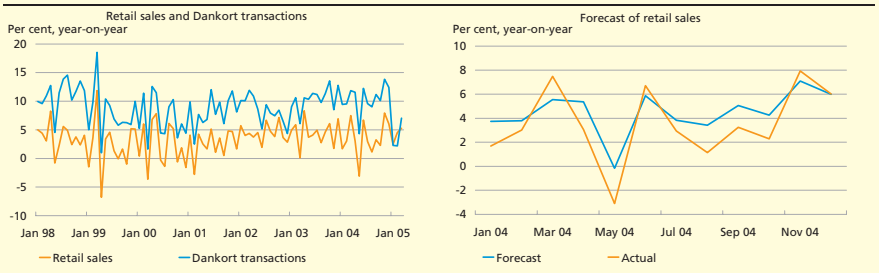
Using regression analysis it is possible to gain an impression of the merits of Dankort transactions as an indicator. If the model is estimated for data (annual growth rates) from January 1998 to December 2003, the following result is achieved (standard deviations in brackets)

$$\text{Value index for retail sales}_t = \underset{(0.06)}{0.76}\ \text{Dankort transactions}_t - \underset{(0.006)}{0.03}, \quad R^2 = 0.67$$

According to the above equation, an increase in Dankort transactions by 10 per cent indicates an increase in retail sales by 4.6 per cent (= 10 x 0.76 - 3 per cent).

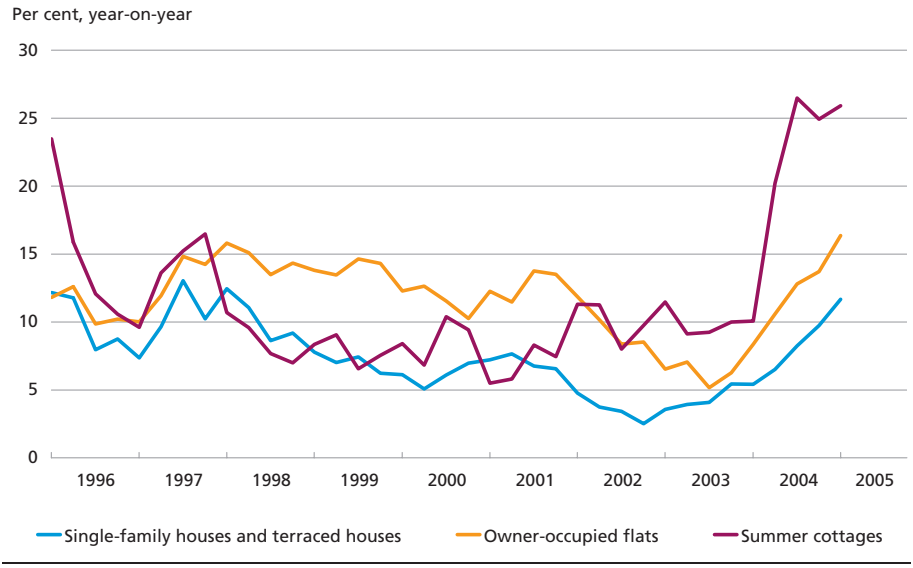
Year-on-year growth in Dankort transactions is thus a significant indicator, which confirms the impression from the left half of the Chart below. The right half of the Chart shows how the model, applying data up to December 2003, "forecasts" growth in the value of retail sales in 2004. In general, Dankort transactions are a good indicator of retail sales.

RETAIL SALES AND DANKORT TRANSACTIONS, AND FORECAST OF RETAIL SALES



Note: Retail sales is Statistics Denmark's value index for retail sales.
Source: Dankort A/S, Statistics Denmark and own calculations.

INCREASE IN HOUSING PRICES Chart 10



Source: Association of Danish Mortgage Banks.

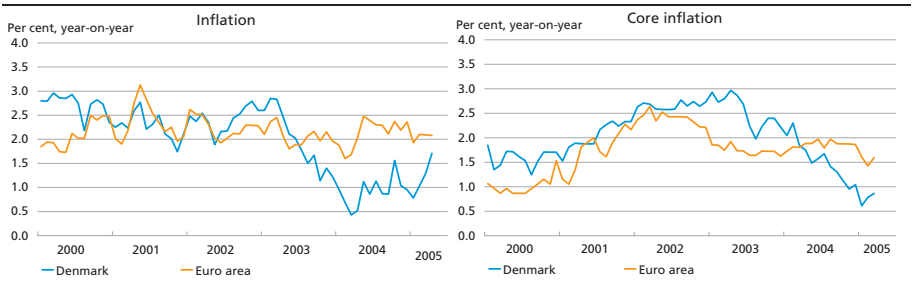
Price and wage developments

According to Statistics Denmark, wages in the private sector were 2.8 per cent higher in the 4th quarter of 2004 than in the preceding year. The rate of wage increase declined in the 2nd half of 2004, partly because a pause in the increase in pension contributions was agreed in a number of collective bargaining areas in 2004. As a result, the rate of wage increase in the industrial sector is now on a level with that of Denmark's trading partners, who have also seen a declining tendency, but less pronounced than in Denmark. However, Danish wage development still exceeds that of the euro area. Against the background of large productivity gains in Danish business enterprises for a number of years, inflation has fallen below that of the euro area.

In the public sector, a 3-year collective agreement has been concluded. Total wage increases will be 9-10 per cent over the 3-year period, in both the municipal and government sectors.

Price development remains subdued. Inflation in terms of the annual rate of increase in the EU's Harmonised Index of Consumer Prices (HICP) rose from 0.8 per cent in January to 1.7 per cent in April, cf. Chart 11. This is primarily attributable to higher energy prices. Core inflation, measured as the annual rate of increase in HIPC excluding energy, food, alcohol and tobacco, went up in February and March 2005, albeit from a modest level. Domestic market-determined inflation, IMI, remains nega-

INFLATION IN TERMS OF HICP AND CORE INFLATION Chart 11



Note: The latest observation for inflation is from April 2005. The latest observation for core inflation is from March 2005.
Source: Eurostat and Statistics Denmark.

tive, reflecting that the rise in import prices has not fully passed through to consumer prices, but has rather squeezed profit margins and supports the impression of modest domestic inflationary pressure.

Memorandum of Understanding on Financial Supervision

MEMORANDUM OF UNDERSTANDING CONCERNING FINANCIAL SUPERVISION BETWEEN DANMARKS NATIONALBANK, THE DANISH MINISTRY OF FINANCE AND THE DANISH MINISTRY OF ECONOMIC AND BUSINESS AFFAIRS (DEPARTMENT AND DANISH FINANCIAL SUPERVISORY AUTHORITY)

Objective of the Memorandum and the cooperating parties' areas of responsibility

1. The objective of the Memorandum shall be to confirm the informal and pragmatic cooperation that has existed between the parties for many years.

The objective of the Memorandum shall also be to contribute to increased transparency regarding the division of work between the parties, as well as their cooperation.

2. In order to promote financial stability, Danmarks Nationalbank, the Danish Ministry of Finance and the Danish Ministry of Economic and Business Affairs (Department and Danish Financial Supervisory Authority) shall cooperate on the basis of and with all due respect for their own areas of responsibility.

3. This Memorandum shall not override the parties' respective areas of responsibility and competence; nor shall it limit their access to making independent decisions within their respective areas of responsibility.

4. Financial stability is a key condition for economic growth. The parties agree that their cooperation should also contribute to strengthening efficiency within financial enterprises and in the financial markets.

At the same time, their aim is to prevent the risk of duplicated work, including unnecessary administrative burdens on the financial sector.

Scope of the cooperation

5. The cooperation shall be aimed at maintaining financial stability and coordinating the handling of financial crises by the parties as appropriate.

Good framework conditions for financial enterprises and markets are essential in relation to financial stability. The framework conditions for financial activities, including regulation and supervision, shall therefore contribute to supporting financial stability.

In their ongoing cooperation, the parties shall pay special attention to:
- Collection of information
- Exchange of information
- Consultation on amendment of relevant rules or principles
- Cooperation within relevant committees
- Cooperation on international issues
- Exchange of services

6. Responsibility for the cooperation shall be anchored in a Coordination Committee on Financial Stability made up of representatives of Danmarks Nationalbank, the Danish Ministry of Finance and the Danish Ministry of Economic and Business Affairs (Department and Danish Financial Supervisory Authority). The Permanent Secretary of the Danish Ministry of Economic and Business Affairs shall chair the Committee.

The Coordination Committee shall meet at least every six months and otherwise as required, including in connection with events of significant importance to financial stability.

Fixed items on the agenda of the Committee shall be:
- the situation and development in the financial sector
- relevant development trends in the international markets
- the development in international cooperation on financial regulation, particularly within the EU

The Department of the Danish Ministry of Economic and Business Affairs shall handle secretariat functions. Individual cases shall be prepared with due observance of applicable confidentiality requirements, including rules on the special confidentiality obligations of the Danish Financial Supervisory Authority.

Procedures and instruments for crisis management

7. If the financial situation within a financial enterprise or in a financial market is deemed to entail significant risks to financial stability, the issue shall be discussed by the Coordination Committee on Financial Stability as soon as possible.

The solution to the relevant problem shall depend on the specific circumstances. With a view to supporting future financial stability, the

four parties to the agreement shall seek to find solutions whereby owners of base capital and the board and management themselves bear the responsibility to the greatest possible extent.

The parties shall regularly maintain a list of contacts to ensure that the Committee can meet at short notice.

The parties to the agreement may conduct crisis management exercises.

8. In connection with the collapse of financial enterprises or markets, or after situations with an imminent risk of such a collapse, the Coordination Committee on Financial Stability shall subsequently perform an assessment of whether the situation has revealed shortcomings or inexpediencies in the framework conditions for financial activities.

If this is found to be the case, the competent authority shall be responsible for initiating the necessary changes.

9. If, in exceptional cases, a solution requires public financial commitments, e.g. guarantees with a view to providing emergency financing, the parties agree that they shall then promote the procedures enabling the fastest possible cost-effective solution with a view to the continuity of financial activities. Where such public commitments are made, they shall be authorised by the competent authority. In this regard too, Danmarks Nationalbank shall independently make any decision concerning its own participation.

Such issues shall be coordinated, as required, with other responsible institutions, including in particular the Guarantee Fund for Depositors and Investors and the Guarantee Fund for Non-Life Insurance Companies.

Separate cooperation between Danmarks Nationalbank and the Danish Financial Supervisory Authority

10. Danmarks Nationalbank and the Danish Financial Supervisory Authority are regularly faced with operational tasks in relation to financial stability and have therefore concluded a separate cooperation agreement comprising, *inter alia*¸ the stability of the financial system. Where relevant, issues discussed in this context are presented to the Coordination Committee on Financial Stability.

Respect for international cooperation

11. The cooperation takes place with due respect for relevant international agreements.

Involvement of other authorities

12. The Coordination Committee on Financial Stability may invite other relevant authorities to participate in discussions, e.g. Statistics Denmark concerning collection of information.

Decision-making and amendments to the Memorandum

13. The Coordination Committee on Financial Stability shall solely perform tasks of an advisory and coordinating nature.

14. The present Memorandum shall be assessed at least every two years, or at the request of one of the parties with a view to its possible revision.

Capital Flows and the Exchange Rate of the Krone

Jakob Lage Hansen, Market Operations and Peter Ejler Storgaard, Economics

INTRODUCTION AND SUMMARY

Capital flows across national borders have increased in volume in recent years, both to and from Denmark as well as internationally. At the same time, the economic literature has turned more attention to the relationship between capital flows and exchange rates.

Conventional exchange-rate models have sought to explain exchange rates in terms of the development in different macroeconomic variables such as the money stock, interest rates and inflation. These models have had limited empirical success, however. More recent research has introduced microeconomic explanations instead, e.g. foreign-exchange dealers' inventory management. The underlying intuition is that foreign-exchange dealers normally adjust their bid and offer prices to and from their inventories to match purchase and sales orders in the foreign-exchange market. In this way foreign-exchange dealers ensure that their inventories are not undesirably large or small. An overweight of purchase orders pushes prices up, while they are reduced if there is an overweight of sales orders. To the extent that capital flows trigger purchase or sales orders in the foreign-exchange market, they may therefore influence the exchange rate.

This article considers the short-term relationship between capital flows to and from Denmark and the development in the krone vis-à-vis the euro in the period 1999-2004.

Initially it is demonstrated that while there is a significant relation between the krone rate and capital flows from portfolio investments on a monthly basis, it is not possible to identify an impact on the krone rate from capital flows from direct investments and other capital imports.

Consequently, the rest of the analysis concentrates on portfolio investments. Portfolio investments during this period can be compiled on a weekly basis, and it is thus possible to operate with a higher frequency than in other studies, which apply monthly or quarterly data.

A significant relationship is found between weekly changes in the krone rate and capital flows related to portfolio investments. On aver-

age, capital imports of kr. 10 billion strengthen the krone by kr. 0.12 per 100 euro (e.g. from kr. 746.00 to kr. 745.88 per 100 euro).

Subsequently, various breakdowns of portfolio investments by instruments, sectors and counterparty countries are examined. Among other things, the results indicate that Danish residents' trade in foreign equities has a greater impact on the krone rate than equivalent trade in foreign bonds. The reason may be that the exchange-rate risk on bond investments is hedged to a larger extent than the exchange-rate risk on equity investments.

The insurance and pension sector's trade in both foreign equities and bonds contributes significantly to explaining changes in the krone rate. The significance of this sector to the krone rate appears to have increased in recent years.

Portfolio investments to and from the euro area have a greater impact on the krone rate than equivalent portfolio investments to and from the rest of the world. The explanation could be that market participants are less inclined to hedge the exchange-rate risk on investments to and from the euro area due to Denmark's fixed-exchange-rate policy vis-à-vis the euro.

The overall results are robust to the inclusion of further variables (Danmarks Nationalbank's intervention in the foreign-exchange market and the interest-rate spread between Denmark and the euro area) to explain the development in the krone rate.

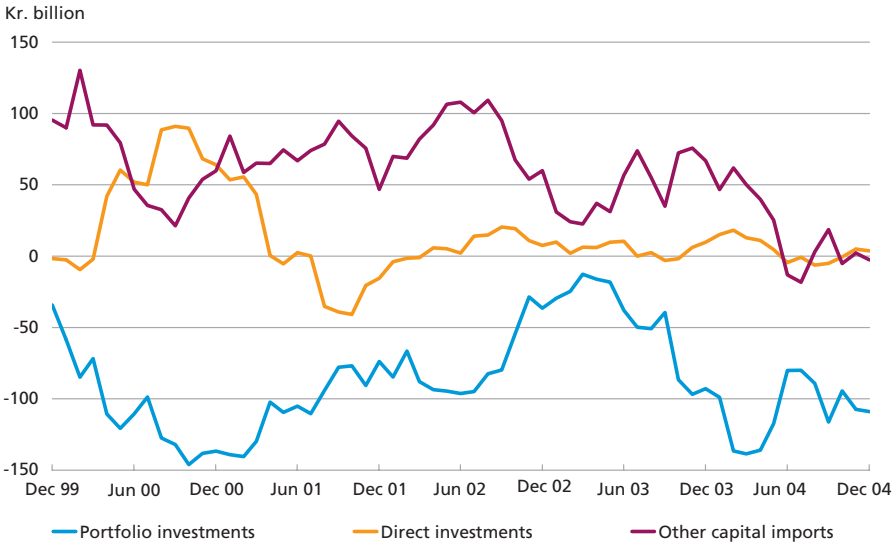
CAPITAL FLOWS AND THE KRONE RATE

Danmarks Nationalbank compiles capital flows to and from Denmark on a monthly basis. Chart 1 shows the capital flows broken down as portfolio investments, direct investments and other capital imports. Throughout most of the period 1999-2004, portfolio investments resulted in net capital exports, and the fluctuations from month to month were considerable. At the beginning of the period, direct investments led to an inflow of capital to Denmark, but since then direct investments have balanced overall, and the fluctuations have been smaller than for portfolio investments.

In the period 1999-2004, portfolio investments were reported to Danmarks Nationalbank's payment statistics on a daily basis, and consequently they can be compiled with a higher frequency than other capital flows.[1] However, at the start of 2005 the payment statistics were restruc-

[1] However, some elements of the portfolio investments were only compiled on a monthly basis, cf. Tryde (1999). The data and method are described in more detail in the Appendix.

CAPITAL FLOWS Chart 1



Note: Monthly observations. Capital flows are stated as net capital imports and shown as a current sum over 12 months. Other capital imports include e.g. bank deposits and loans.
Source: Danmarks Nationalbank.

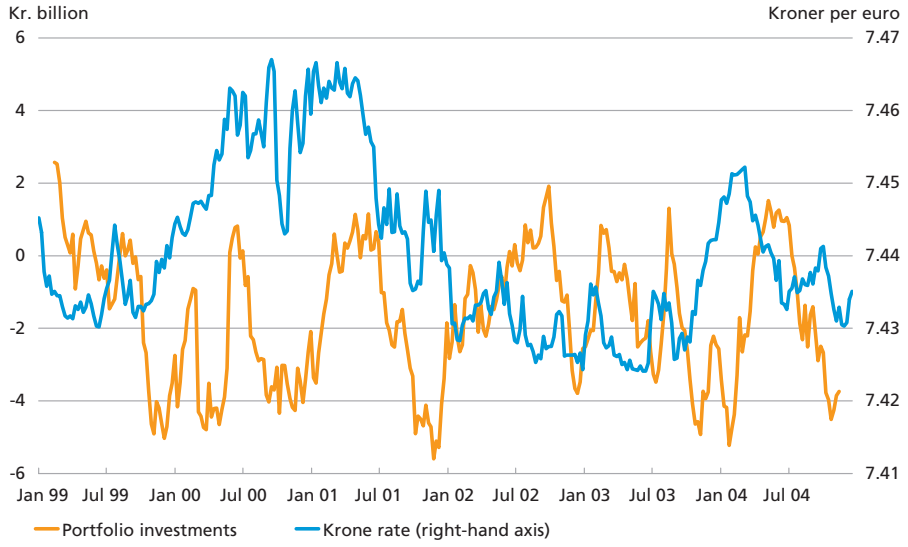
tured so that in future portfolio investments are also reported on a monthly basis, cf. Danmarks Nationalbank (2005).[1]

Chart 2 shows a 12-week moving average of portfolio investments together with the krone rate (kroner per euro).[2] The Chart gives a first-hand impression of the relationship between portfolio investments and the krone rate in recent years. While it is possible to e.g. identify periods in which a capital outflow from Denmark (net capital imports relating to portfolio investments) has coincided with a weakening of the krone (an increase in the price of euro in kroner), it is also evident that other factors have also had an impact on the krone rate.

In the analysis of the relationship between portfolio investments and the krone rate, the following sections set up a number of regression models for the period 1999-2004. These models are applied to test the article's basic hypothesis, i.e. that an inflow of capital to Denmark leads to a strengthening of the krone. On the basis of the models it is also possible to calculate the extent to which changes in the krone rate may be attributed to capital flows related to portfolio investments. Chart 3 shows the actual weekly krone-rate changes and the predicted weekly krone-rate change implied by one of the models. Again, it

[1] The reporting structure has been changed in order to achieve a more robust data basis for future compilation and also to reduce the reporting burden on the corporate sector significantly.
[2] The fixed-exchange-rate policy vis-à-vis the euro entails that the rate of the krone against other currencies is primarily driven by the fluctuations in the euro vis-à-vis other currencies.

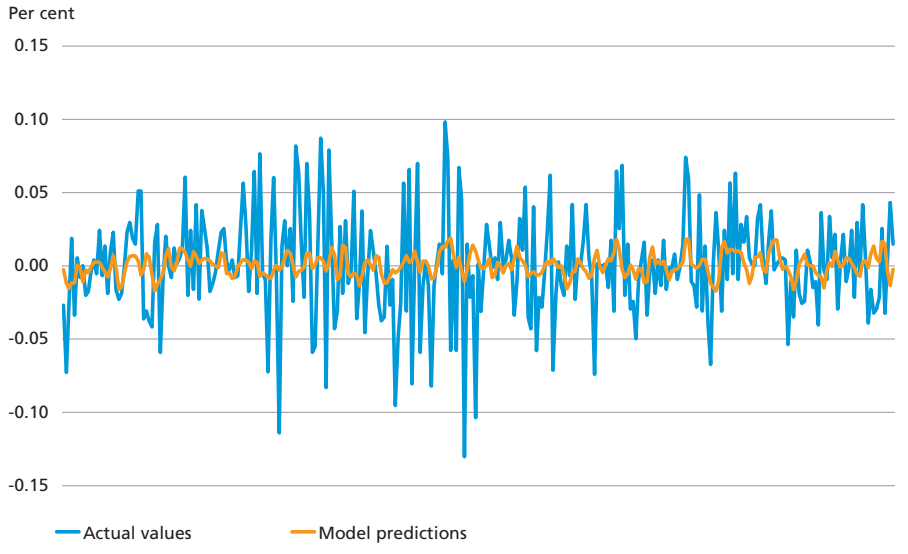
WEEKLY PORTFOLIO INVESTMENTS AND THE KRONE RATE — Chart 2



Note: Weekly observations. Portfolio investments are stated as net capital imports and shown as a centred moving average over 12 weeks.
Source: Danmarks Nationalbank.

is clearly seen that the krone rate is not determined solely by portfolio flows to and from Denmark.

WEEKLY PERCENTAGE CHANGES IN THE KRONE RATE: ACTUAL VALUES AND MODEL PREDICTIONS — Chart 3



Note: Positive values indicate weakening of the krone vis-à-vis the euro. Model estimates are fitted values based on the model in Table 2.

LITERATURE ON EXCHANGE RATES AND CAPITAL FLOWS

Conventional exchange-rate models have been poor at explaining the development in exchange rates, in the short term at least.[1] However, recent economic literature includes several examples of how capital flows have been included in exchange-rate models in an attempt to improve the models' ability to explain the development in exchange rates.

Brooks, Edison, Kumar and Sløk (2001) examine, *inter alia*, whether capital flows related to portfolio investments and direct investments can contribute to explaining the development in the dollar vis-à-vis the euro and the yen. The empirical analysis is based on quarterly data from 1988 to 2000. Using regression analysis it is found that capital flows related to portfolio investments between the USA and the euro area had a significant impact on the euro/dollar exchange rate, while the impact of capital flows related to direct investments was not significant. For the yen/dollar rate, however, only an impact from the long-term yield spread was registered.

Hau and Rey (2002) argue that investors' portfolio restructuring will lead to order flows in the foreign-exchange market. Given the findings of the "microstructure" literature[2], i.e. that order flows are significantly related to exchange-rate changes, their hypothesis is that there is also a relationship between portfolio investment flows and exchange rates. Using monthly data from 1980 to 2001, Hau and Rey test whether there was a relationship between the inflow of portfolio investments in equity and the exchange rate. In the period from 1990 the correlation is found to have been positive and significant for the 17 OECD countries taken as one vis-à-vis the USA.

Siourounis (2003) also contains an empirical analysis of the relationship between capital flows and exchange rates. The data set is monthly data from 1988 to 2000 for the USA vis-à-vis the UK, Germany, Japan and Switzerland. Siourounis finds that net inflows of portfolio investments in equity to the USA from the UK, Germany or Switzerland led to significant appreciation of the dollar in accordance with Hau and Rey's (2002) theoretical model, while portfolio investment flows in bonds do not have any impact on the dollar. Siourounis also reports that a model that includes portfolio flows in equities for some of the currencies and during some periods is better at predicting the exchange rates than a "random walk" model.

1 Cf. Meese and Rogoff (1983).
2 Cf. e.g. Lyons (2001).

THE KRONE RATE EXPLAINED BY NET CAPITAL IMPORTS BY TYPE Table 1

Explanatory variable	Coefficient estimate
Portfolio investments	- 0.00180 **
Direct investments	- 0.00096
Other capital imports	- 0.00074
Constant term	- 0.00237

Number of observations: 66 Coefficient of determination (R^2): 0.11 F test: 2.667 *

Note: OLS estimation. Monthly data. One, two or three asterisks indicate significance at, respectively, 10, 5 or 1-per-cent level. The explained variable is monthly changes in the krone rate in per cent. Capital flows are stated in billion kroner. A negative coefficient estimate means that an inflow of capital to Denmark strengthens the krone vis-à-vis the euro. As described in the Appendix, some observations have been omitted in the estimation. The F test is a test of the null hypothesis that all explanatory variables except the constant term have a coefficient of zero.

CAPITAL FLOWS AND THE KRONE RATE ON A MONTHLY BASIS

Table 1 shows a simple model for the relationship between capital flows and the krone rate, estimated on monthly data. Like most of the subsequent models, the model is estimated using ordinary least squares (OLS), as in e.g. Brooks et al. (2001). Castrén (2004) applies GMM estimation, arguing that causality also goes from exchange rates to portfolio investments. In the present analysis it is assumed that the low volatility of the krone means that decisions concerning portfolio investments do not depend on the development in the krone rate.

Net capital imports are broken down into three types, cf. Chart 1: portfolio investments, direct investments and other capital imports. Capital flows in connection with portfolio investments have a significant impact on the krone rate, and the sign of the estimated coefficient is as expected – an inflow of capital to Denmark leads to strengthening of the krone. The regression shows that on average net capital imports in the form of portfolio investments of kr. 10 billion strengthen the krone by 10*0.0018 = 0.018 per cent, corresponding to kr. 0.13 per 100 euro. The two asterisks after the coefficient estimate indicate that the coefficient is significantly different from zero at a 5-per-cent level.

On the other hand, capital flows connected to direct investments and other capital imports have not had any significant impact on the krone rate in the period under review, but the signs are as expected. As regards direct investments, the reason why there is no significant effect could be that mergers and acquisitions often involve exchange of equity rather than cash settlement.[1] On some days, market participants report that exchange-rate changes are attributable to rumours of acquisitions, implying that the exchange rate is influenced before payment has been

[1] Cf. e.g. Brooks et al. (2001).

effected. In addition, direct investments in some months are dominated by large transactions, which may contribute to increasing the uncertainty of the estimated impact on the krone rate.

Capital flows explain 11 per cent of the changes in the krone rate, which is low but not unusual compared with similar analyses of other countries.

If the insignificant variables (direct investments and other capital imports) are omitted from the model, the estimate of the krone-rate impact from portfolio investments changes from -0.00180 to -0.00111 and the coefficient of determination falls slightly to 10 per cent.

WEEKLY PORTFOLIO FLOWS AND THE KRONE RATE

The initial analysis on the basis of monthly data indicated that capital flows relating to portfolio investments could contribute to explaining the development in the krone rate, while there was no significant relationship between the krone rate and, respectively, direct investments and other capital imports. The following section therefore focuses on portfolio investments, which are available on a weekly basis for the period 1999-2004, as described above.

Total net inflow of portfolio investments

First, a model is estimated in which it is sought to explain the weekly changes in the krone rate by the total net inflow of portfolio investments to Denmark.[1] The regression results are shown in Table 2.

Inflow of capital related to portfolio investments has a significant impact on the krone rate in the same week and the subsequent week.[2] In the period under review, if a week has seen a net inflow of portfolio investments for kr. 10 billion, the krone has on average strengthened by kr. 0.06 per 100 euro in the same week and by a further kr. 0.06 per 100 euro in the subsequent week. The overall impact is thus estimated at kr. 0.12 per 100 euro, which is slightly higher than in the model estimated on monthly data (kr. 0.08 per 100 euro).[3]

The model explains 5 per cent of the weekly changes in the krone rate. As far as is known, there are no other studies of the relationship

1 To ensure a well-specified dynamic structure in the models, one lag is included for each explanatory variable as a starting point. Subsequently, the model is tested down to a more simple structure via iterative elimination of variables whose parameters are insignificant at a 10-per-cent level.

2 Including the change in the krone rate in the preceding week as an explanatory variable does not change this: the associated coefficient is not significantly different from zero, and the other parameter estimates and the coefficient of determination are virtually unchanged.

3 Compared with the above monthly model, in which the insignificant explanatory variables (direct investments and other capital imports) have been eliminated.

THE KRONE RATE EXPLAINED BY THE NET INFLOW OF PORTFOLIO INVESTMENTS Table 2

Explanatory variable	Coefficient estimate
Total portfolio flow	- 0.00075 **
Total portfolio flow (-1)	- 0.00086 **
Constant term	- 0.00184

Number of observations: 301 Coefficient of determination (R^2): 0.05 F test: 7.184 ***

Note: OLS estimation. Weekly data. One, two or three asterisks indicate significance at, respectively, 10, 5 or 1-per-cent level. "(-1)" after the variable name indicates that the variable is lagged by one week. The explained variable is weekly changes in the krone rate in per cent. Portfolio flows are stated in billion kroner. A negative coefficient estimate means that the inflow of capital to Denmark strengthens the krone vis-à-vis the euro. As described in the Appendix, some observations have been omitted in the estimation. The F test is a test of the null hypothesis that all explanatory variables except the constant term have a coefficient of zero.

between capital flows and exchange rates on a weekly basis that can be used to assess the coefficient of determination.

There may be several reasons why the portfolio flow in the preceding week also contributes significantly to explaining the krone rate. Firstly, as stated in the Appendix, the dating of the variables in the model is not completely synchronised. Due to the approximation used to change the date of the portfolio investments from the settlement date to the transaction date, an impact that is, in fact, simultaneous may appear as a delayed impact in the model. Another possible explanation is that the banks do not always hedge a given customer transaction in the foreign-exchange market immediately, but take a foreign-exchange position themselves instead. In that case the impact on the exchange rate may be delayed. More generally, investors do not necessarily trade foreign exchange on the same day as they trade equities and bonds.

It is interesting to compare the estimated impact of capital imports related to portfolio investments with existing estimates of the impact on the krone rate from Danmarks Nationalbank's interventions in the foreign-exchange market. Andersen (2005) analyses Danmarks Nationalbank's interventions in the period January 1999 – September 2004 and finds that an intervention purchase of kroner for kr. 10 billion strengthens the krone by kr. 0.14 per 100 euro on average.[1]

The estimates of the krone-rate impact of intervention and capital flows related to portfolio investments are not fully comparable as they are based on different models and estimation methods. With this reservation, the concordance between the results indicates that Danmarks Nationalbank's purchase and sale of foreign exchange in the market in recent years has not had a significantly different impact on the

[1] The estimate is subject to the intervention meeting the "direction criterion", i.e. that the krone actually strengthens after intervention to buy kroner, cf. Andersen (2005).

THE KRONE RATE EXPLAINED BY THE NET INFLOW OF PORTFOLIO INVESTMENTS BY INSTRUMENTS — Table 3

Explanatory variable	Coefficient estimate
Danish bonds (-1)	- 0.00097 **
Foreign equities	- 0.00465 ***
Foreign bonds	- 0.00261 ***
Constant term	- 0.00501 **

Number of observations: 301 Coefficient of determination (R^2): 0.07 F test: 7.412 ***

Note: See the note to Table 2.

krone rate to that of foreign-exchange transactions of an equivalent size by other market participants.

The similar krone-rate impacts of intervention by Danmarks Nationalbank and overall portfolio flows to and from Denmark are consistent with the theoretical results in Lyons (2001, Chapter 8). Within the framework of an economic model, Lyons argues that central banks' *sterilised* interventions in the foreign-exchange market should have the same exchange-rate impact as private capital flows if the interventions do not contain signals about future monetary policy. Most of Danmarks Nationalbank's interventions in the foreign-exchange market in recent years are best described as sterilised, as they have taken place in periods when the foreign-exchange market has been stable and they have not had any impact on the short-term interest rate. Abildgren (2005) discusses the difference between sterilised and non-sterilised intervention.

Equities and bonds

Previous studies have shown a greater exchange-rate impact from capital flows related to portfolio investments in equities than from flows related to investments in bonds.[1] This section examines whether this also applies to the relationship between the krone rate and portfolio investments to and from Denmark.

Table 3 shows the estimation results for a model in which portfolio investments are broken down into four instruments: non-residents' trading in Danish equities and bonds, and residents' trading in foreign equities and bonds. It is not possible to identify any significant impact on the krone rate from capital flows related to investments in Danish equities, but flows related to the other three instruments have significant impacts, with the expected sign. In addition, the coefficient of determination has increased slightly compared to the model with the total portfolio flow.

[1] Cf. e.g. Siourounis (2003).

THE KRONE RATE EXPLAINED BY THE NET INFLOW OF PORTFOLIO INVESTMENTS BY INSTRUMENTS AND DOMESTIC SECTORS Table 4

Explanatory variable	Coefficient estimate
Danish bonds (-1)	- 0.00095 **
Foreign equities – insurance and pension	- 0.00466 **
Foreign bonds – insurance and pension	- 0.00344 ***
Foreign equities – other sectors	- 0.00530 **
Constant term	- 0.00445 *
Number of observations: 301 Coefficient of determination (R^2): 0.07	F test: 5.759 ***

Note: See the note to Table 2.

The point estimate of the impact from capital flows attributable to portfolio investments in foreign equities is considerably larger in numerical terms than the corresponding estimate for foreign bonds, and a statistical test shows that the equity coefficient is numerically significantly larger than the bond coefficient.[1] A possible explanation for this result is that the exchange-rate risk on equity purchases is hedged to a lesser extent than the risk on bond purchases (Brooks et al., 2001).[2] However, the result is not also seen for flows related to Danish securities since there is no significant impact on the krone rate from capital flows related to portfolio investments in Danish equities in the period under review.

The Danish insurance and pension sector[3]

Market participants mention the foreign-exchange transactions of domestic insurance and pension companies as being of importance to the development in the krone rate. To gain an impression of whether the insurance and pension sector differs from other sectors of the economy, a model is estimated in which the total Danish portfolio investments in foreign equities and bonds are broken down on the insurance and pension sector and other sectors, respectively.

The insurance and pension sector's trade in foreign securities is a significant factor in explaining the krone rate, cf. Table 4. For other domestic sectors taken as one, only flows related to investments in foreign equities are significant in the model. There is no significant difference between the equity and bond coefficients within the insurance and pension sector, nor between the equity coefficients for the insurance and pension sector and other sectors.

1 The P value is 8 per cent (one-sided test).
2 Rangvid (2004) discusses hedging of exchange-rate risk on investment in international securities.
3 In this context, the pension and insurance sector includes social pension funds (e.g. ATP – the Labour Market Supplementary Pension Fund).

An investigation of the model's stability properties shows signs of a structural break in the second half of 2000. Estimations of models for two subperiods – before and after the referendum on Denmark's adoption of the euro in the autumn of 2000 – yield rather different results.[1] In the period before the referendum, flows in connection with other sectors' purchases of foreign equities are significant with the expected sign, while no significant impact on the krone rate is identified from flows related to the insurance and pension sector's purchase of foreign securities. After the referendum, the result is generally the opposite: the insurance and pension sector's purchase of both foreign equities and bonds is significant with the expected sign[2], while the variables related to other sectors' portfolio investments abroad are not significant. The change in the composition of significant explanatory variables from the first to the second subperiod indicates that the insurance and pension sector has become more important to the development in the krone rate over time.[3]

The euro area

As a result of the fixed-exchange-rate policy, the krone has been stable vis-à-vis the euro in the period under review, while against other currencies the krone has fluctuated in step with the fluctuations of these currencies vis-à-vis the euro. A hypothesis is that this difference in exchange-rate volatility has been reflected in differences in investors' hedging of exchange-rate risks. More specifically, the hypothesis is that Danish investors hedge the exchange-rate risk on purchase of euro-denominated assets to a lesser extent than on purchase of assets denominated in other currencies, while investors from the euro area hedge purchases of Danish assets to a lesser extent than investors from the rest of the world. If that is the case, flows in connection with portfolio investments to and from the euro area can be expected to have a greater impact on the krone rate than flows to and from the rest of the world.

First a model is estimated in which the capital flows related to portfolio investments are broken down by whether they relate to the euro area or the rest of the world. The result is that flows to and from the euro area have a numerically significantly greater impact on the krone rate. If the flows are also broken down by instrument, the model is as shown in Table 5.

---

1 The exact choice of time of break is partly arbitrary.

2 For the insurance and pension sector, the equity coefficient is numerically greater than the bond coefficient at a significance level of 8 per cent.

3 A possible explanation is portfolio restructuring in connection with regulatory changes within the insurance and pension sector.

THE KRONE RATE EXPLAINED BY THE NET INFLOW OF PORTFOLIO INVESTMENTS BY INSTRUMENTS AND COUNTERPARTY COUNTRIES Table 5

Explanatory variable	Coefficient estimate
Danish bonds – euro area (-1)	- 0.00171 **
Foreign equities – euro area	- 0.01091 ***
Foreign bonds – euro area	- 0.00212 *
Foreign bonds – rest of world (-1)	- 0.00356 **
Constant term	- 0.00461 *
Number of observations: 301 Coefficient of determination (R^2): 0.08	F test: 6.071 ***

Note: See the note to Table 2.

Capital flows from euro area investors' purchase and sale of Danish bonds have a significant impact on the krone rate, as do flows from Danish residents' trade in both equities and bonds from the euro area. The strongest impact on the krone rate comes from flows related to Danish residents' trade in euro area equities, and this impact is numerically significantly greater than the impact of Danish residents' trade in euro area bonds.[1]

In general the results are in accordance with the hypothesis put forward, i.e. that portfolio investments to and from the euro area are hedged to a lesser extent than investments to and from the rest of the world.

THE ROBUSTNESS OF THE RESULTS TO THE INTRODUCTION OF OTHER EXPLANATORY VARIABLES

So far the models have focused on the significance of portfolio investments to the weekly changes in the krone rate. However, as discussed above, other factors also have an impact. Consequently, the following section examines whether the results change when the impact of two other explanatory variables is taken into account: Danmarks Nationalbank's interventions, and changes in the short-term interest-rate spread between Denmark and the euro area.[2]

First, Danmarks Nationalbank's interventions to purchase foreign exchange are included in the simple model shown in Table 2. Unlike the portfolio flows, Danmarks Nationalbank's intervention cannot, however, be taken to be exogenous and not affected by changes in the krone rate. Consequently, instrumental variable (IV) estimation must be applied instead of ordinary least squares. The instruments used are

[1] There is no significant difference between the coefficients for Danish residents' trade in foreign bonds from, respectively, the euro area and the rest of the world.

[2] Omission of relevant explanatory variables is a problem since it gives biased coefficient estimates.

THE KRONE RATE EXPLAINED BY THE NET INFLOW OF PORTFOLIO INVESTMENTS AND DANMARKS NATIONALBANK'S INTERVENTIONS Table 6

Explanatory variable	Coefficient estimate
Danmarks Nationalbank's interventions to buy foreign exchange (endogenous)	0.00252
Total portfolio flow	- 0.00076 **
Total portfolio flow (-1)	- 0.00100 ***
Constant term	- 0.00240
Number of observations: 299 Number of instruments: 3	Chi^2 test: 12.745 ***

Note: IV estimation. Weekly data. "(-1)" after the variable name indicates that the variable is lagged by one week. The explained variable is weekly changes in the krone rate in per cent. Danmarks Nationalbank's interventions and portfolio flows are stated in billion kroner. For Danmarks Nationalbank's interventions, a positive coefficient means that interventions to purchase foreign exchange weaken the krone vis-à-vis the euro. For portfolio flows, a negative coefficient estimate means that the inflow of capital to Denmark strengthens the krone vis-à-vis the euro. As described in the Appendix, some observations have been omitted in the estimation. The Chi^2 test is a test of the null hypothesis that all explanatory variables except the constant term have a coefficient of zero.

intervention in the preceding week and changes in the krone rate in previous weeks.

The regression results are shown in Table 6. Portfolio flows in the current and preceding week are significant, as in the model without intervention, and the coefficient estimates are virtually unchanged compared to Table 2. In this model, the intervention variable is not significant[1], but the point estimate has the correct sign (purchase of foreign exchange by Danmarks Nationalbank entails weakening of the krone), and its magnitude is in line with the results in Andersen (2005).

Another potentially important explanatory variable is the interest-rate spread to the euro area since changes in this spread are normally assumed to affect the krone rate vis-à-vis the euro. On the other hand, changes in the krone rate vis-à-vis the euro may also influence the short-term interest-rate spread between Denmark and the euro area, e.g. via an expected or actual unilateral change in the Danish monetary-policy interest rates. Consequently, the interest-rate spread cannot be seen as an exogenous variable in relation to the krone rate, and once again IV estimation must be applied.

If the change in the short-term interest-rate spread (measured as the weekly change in the spread between 3-month Cibor and Euribor) is included in the basic model, the coefficients for the portfolio flows remain virtually unchanged. The change in the interest-rate spread is not significant, but the sign is as expected – widening of the interest-rate spread to the euro area makes the krone appreciate vis-à-vis the euro.

[1] The reason for the non-significance of the intervention in the regression in Table 6 may be that regression analysis is not the best method for analysing the relationship between intervention and exchange-rate changes, cf. Fatum and Hutchison (2003). Using event analysis, Andersen (2005) finds that Danmarks Nationalbank's interventions have had a strongly significant impact on the krone rate in the period 1999-2004.

THE KRONE RATE EXPLAINED BY THE BANKS' CUSTOMER TRANSACTIONS Table 7

Explanatory variable	Coefficient estimate
Bank customers' purchases of kroner against foreign exchange	- 0.00230 **
Constant term	0.00353 **

Number of observations: 88 Coefficient of determination (R^2): 0.05

Note: OLS estimation. Daily data. Two asterisks indicate significance at a 5-per-cent level. The explained variable is daily changes in the krone rate in per cent. Customer transactions are in billion kroner and are the sum of the reporting banks' net trading with domestic and foreign customers, and with foreign-exchange dealers from abroad. A negative coefficient estimate means that customers' purchase of kroner against foreign exchange strengthens the krone vis-à-vis the euro.

Overall, the inclusion of Danmarks Nationalbank's intervention and the short-term interest-rate spread as explanatory variables does not lead to substantial changes in the results.

SOURCES FOR DANMARKS NATIONALBANK'S FUTURE ANALYSIS OF THE FOREIGN-EXCHANGE MARKET

The analysis has shown that portfolio investments can contribute to explaining weekly changes in the krone rate, and the statistics have been used by Danmarks Nationalbank on an ongoing basis to analyse the foreign-exchange market for Danish kroner. With the introduction of new payment statistics at the beginning of 2005, it is no longer possible to compile portfolio investments on a weekly basis.

Danmarks Nationalbank operates with a number of sources to analyse developments in the Danish foreign-exchange market, including daily reporting of foreign-exchange positions and turnover by a number of banks, cf. Krabbe and Pedersen (1998). The reporting structure was revised as from 1 December 2004 with a view to improving the information content.

It is an implicit assumption of the above analysis of portfolio investments that these have an impact on order flows and thus on the krone rate. Among other things, the daily reporting by the banks allows for direct calculation of order flows from customers (customers' trade in kroner against foreign exchange with the banks).

Table 7 shows the result of an estimation in which daily changes in the krone rate in the period 1 December 2004 to 8 April 2005 are explained by customer transactions. The latter have a significant impact on the krone rate and explain 5 per cent of the daily exchange-rate changes. The coefficient estimate indicates that on average a bank customer's purchase of kr. 10 billion against foreign currency strength-

ens the krone by 10*0.0023 = 0.023 per cent, i.e. kr. 0.17 per 100 euro. This impact is similar to that found in connection with portfolio investments (kr. 0.12). The slightly greater coefficient may reflect that customer transactions are a more direct indicator of order flows in the foreign-exchange market than capital flows related to portfolio investments.

Initial experience with the revised statistics is generally positive and indicates that in future the statistics can support Danmarks Nationalbank's analysis of the foreign-exchange market.

LITERATURE

Abildgren, Kim P. (2005), Sterilised and Non-Sterilised Intervention in the Foreign-Exchange Market, Danmarks Nationalbank, *Monetary Review*, 1st Quarter.

Andersen, Allan B. (2005), Exchange-Rate Impact of Danmarks Nationalbank's Interventions in the Foreign-Exchange Market, Danmarks Nationalbank, *Monetary Review*, 1st Quarter.

Brooks, Robin, Hali Edison, Manmohan S. Kumar and Torsten Sløk (2001), Exchange Rates and Capital Flows, *IMF Working Paper,* 01/190.

Castrén, Olli (2004), Do financial market variables show (symmetric) indicator properties relative to exchange rate returns?, *ECB Working Paper,* 379.

Danmarks Nationalbank (2005), Balance of payments – Financial account, Financial Statistics, "Nyt", January.

Fatum, Rasmus and Michael M. Hutchison (2003), Is Sterilised Foreign Exchange Intervention Effective After All? An Event Study Approach, *The Economic Journal*, 113 (April).

Hau, Harald and Hélène Rey (2002), Exchange Rate, Equity Prices and Capital Flows, *NBER Working Paper,* 9398.

Krabbe, Henrik S. and Lisbeth S. Pedersen (1998), The Danish Foreign-Exchange Market, Danmarks Nationalbank, *Monetary Review*, 1st Quarter.

Lyons, Richard K. (2001), The Microstructure Approach to Exchange Rates, MIT Press.

Meese, Richard A. and Kenneth Rogoff (1983), Empirical exchange rate models of the seventies: Do they fit out of sample?, *Journal of International Economics*, 14.

Rangvid, Jesper (2004), Hedging of exchange-rate risk in the portfolio (in Danish), *Finans/Invest,* 1/04.

Siourounis, Gregorios (2003), Capital Flows and Exchange Rates: An Empirical Analysis, working paper, London Business School.

Tryde, Lasse (1999), The Nationalbank's New Reporting System for Payments Statistics, Danmarks Nationalbank, *Monetary Review,* 2nd Quarter.

APPENDIX – DATA AND METHOD

The krone rate applied is Danmarks Nationalbank's exchange rate vis-à-vis the euro on a daily basis. The percentage changes in the krone rate are calculated as the change in the natural logarithm of the krone rate.

Data for capital flows to and from Denmark stems from Danmarks Nationalbank's external financial payments statistics, for which portfolio investments in the period under review were reported on a daily basis. However, some elements of the portfolio investments, including the banks' trading for their own account, can only be compiled on a monthly basis, cf. Tryde (1999), and are therefore not included in the weekly analysis. Capital flows are stated as net capital imports in billion kroner.

Since portfolio investments are reported by settlement date, the securities transaction takes place 1-3 days before registration in the statistics. In Denmark, among other countries, securities are traded three days prior to settlement. Consequently, it is sought to explain the change in the krone rate from e.g. Wednesday in calendar week x-1 to Wednesday in calendar week x by portfolio investments settled in calendar week x.

A few observations have been removed from the data set. In the weeks before and after 28 September 2000, the krone rate was greatly influenced by the special circumstances relating to the referendum on Denmark's adoption of the euro. Since this article focuses on analysing the relationship between the krone rate and capital flows under more normal market conditions, the weeks before and after the euro referendum have not been included. In addition, a few observations have been omitted since reclassification of the capital flows in the statistics (typically as a result of mergers and acquisitions) gives a misleading picture of the underlying capital flows in relation to this analysis.

The German Labour Market

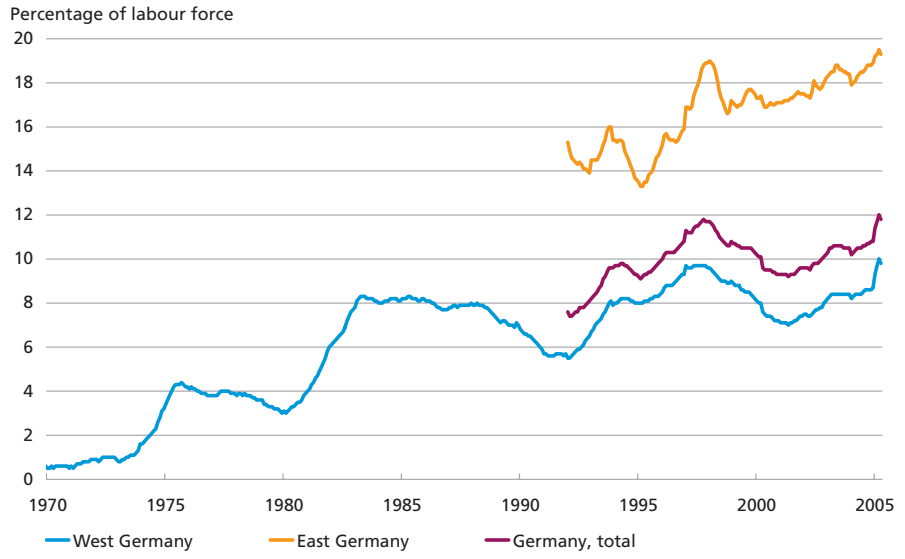
Niels C. Beier and Michael Sand, Economics

INTRODUCTION AND BACKGROUND

It is indisputable that there are problems in the German economy. This is particularly evident in the labour market, where unemployment has been an ever-increasing burden since the 1970s, cf. Chart 1. During periods of recession unemployment has risen, and subsequent upswings have not brought it down to former levels. This is a clear indication that the German labour market is not functioning well. This article presents some of the major problems in relation to the German labour-market structure.

The difficulties are to some extent attributable to the reunification of Germany. Merging East and West has proved to be a lengthy process. After reunification, West German rules, welfare benefits and structures were by and large extended to all of the new Germany. Competitiveness in the East did not catch up, which is still reflected in substantially higher

UNEMPLOYMENT IN GERMANY — Chart 1

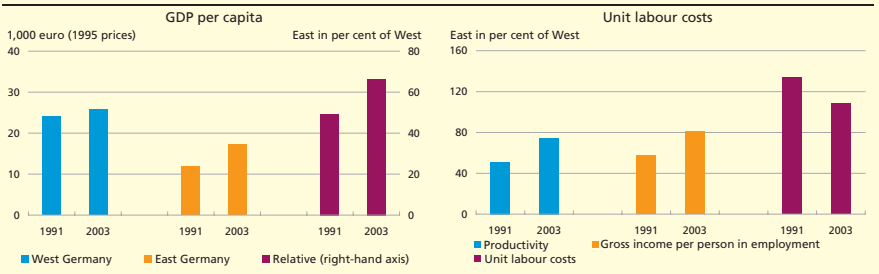


Note: Registered unemployment. National definition. The most recent observation is from April 2005. The increase at the turn of the year 2004-05 is primarily of a technical nature resulting from amended rules and definitions in the unemployment statistics (Hartz IV).
Source: EcoWin.

DIFFERENCES BETWEEN WEST AND EAST GERMANY Box 1

The economy in the former East Germany is still not on a level with that of the West, although more than 4 per cent of West German GDP is transferred to East Germany every year (OECD, 2001). However, the gap has narrowed since the final reunification in 1991. In 2003, GDP per East German was around 2/3 of the West German level, compared to half in 1991, cf. Chart 2. This heterogeneity should be borne in mind when performing an economic analysis of the structural problems in Germany.

MACROECONOMIC KEY RATIOS FOR WEST AND EAST GERMANY Chart 2



Note: East Germany includes Berlin. Unit labour costs in the right-hand chart are not calculated on the basis of the productivity and gross income figures shown.
Source: Federal Ministry of Transport, Building and Housing (2004).

The difference between East and West is most significant in the labour market, cf. Chart 1 in the main article. Unemployment is substantially higher in the former East Germany than in the former West Germany. This is particularly true of long-term unemployment, which points to major adjustment problems in the East German labour market (German Council of Economic Experts, 2004). The challenges in reorienting the labour force from planned economy to market economy have been considerable. The question is whether the East German labour force, which has good qualifications on paper, actually has the skills required in a modern market economy.

Another reason for the excess unemployment in the East is that productivity is lower. Absolute East German unit labour costs, which take account of developments in both productivity and wages, were 34 per cent above the level in West Germany in 1991, cf. Chart 2, and in the period just after reunification massive wage increases in East Germany squeezed competitiveness further. By 2003, the gap had narrowed to just over 8 per cent, so competitiveness is still weaker in the East – particularly in the construction sector. Since 1991, total employment in East and West Germany has, respectively, declined and risen.

In recent years the convergence process between East and West has slowed down. The economic gap narrowed primarily in the years 1991-97, when large government subsidies led to massive investments in infrastructure, buildings and machinery in East Germany. The subsidies contributed to distorting economic decisions and consequently some of the investments led to highly capital-intensive production, but limited employment. Since then subsidies have been phased out, and the economy has increasingly had to compete on market terms. This led to a substantial decrease in investments. Another problem has been the decline in construction activity, which has resulted in substantial overcapacity in the building and construction sector and requires a high degree of adaptability. In 1995 the building and construction sector accounted for 17 per cent of employment in East Germany. This figure had declined to 13 per cent in 2000, but was only 6 per cent in the West in the same year.

unemployment, cf. Chart 1. The differences between East and West are briefly outlined in Box 1.

The labour market is by no means solely a reunification issue, however, as the steadily rising unemployment in the West shows, see Chart 1. It is widely accepted that the structures of the labour market generally impact on unemployment, cf. the Danish Ministry of Finance (2004), Nickell et al. (2005) and the Danish Welfare Commission (2005a). The present article points to a number of factors that have contributed to the high level of unemployment in Germany. These include generous unemployment benefits, extensive employment protection, the limited success of the active labour-market policies and a high level of wage costs.

However, the German problems should be viewed against the background of the extensive structural reforms of the last couple of years, the full impact of which has not been seen yet. A number of measures have been implemented in the labour market, notably the "Hartz reforms". In particular, the unemployment benefit system has been tightened, and employment service routines simplified. The key elements of the Hartz reforms are outlined in Appendix 1.

Overall, the current situation is a result of the lack of reforms in e.g. the 1990s when the economy was booming in the wake of reunification. These reforms must now be implemented in a weak economy. It is hazardous to refrain from introducing reforms for sustained periods, even though the economy appears to be sound.

The rest of the article is structured as follows: the relevant German labour-market structures are reviewed item by item and then put into perspective. The review is based on a comparison with conditions in the OECD countries in general and in Denmark in the period since around 1990. Denmark serves as a yardstick since the increasing unemployment in Denmark in the 1970s and 1980s was reversed in the 1990s when the economy was flourishing and a number of labour-market reforms were introduced. For other analyses of the German labour market, see Deutsche Bundesbank (2004), IMF (2004a) and OECD (2004a).

GERMAN LABOUR-MARKET STRUCTURES

Unemployment benefits

Comparing unemployment benefit structures in different countries is a complex task. The compensation received by an unemployed German in relation to his or her previous income depends on a number of factors, including family type, entitlement to other social benefits and duration of the period of unemployment. In addition, this comparison is compli-

UNEMPLOYMENT COMPENSATION AS A PERCENTAGE OF FORMER INCOME (2002) Table 1

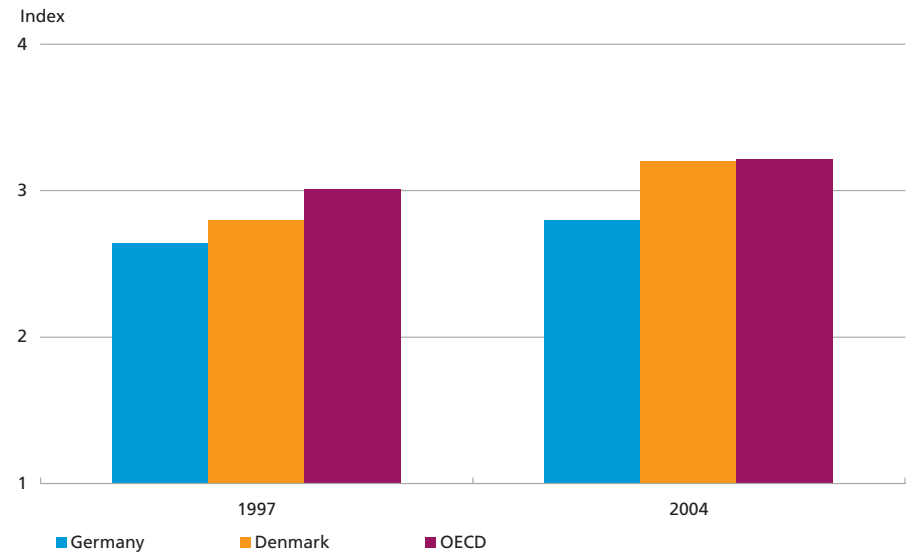
	Low income	Average income	High income
Short-term unemployed:			
Germany	81	76	72
Denmark	92	72	58
OECD	75	67	57
Long-term unemployed:			
Germany	83	70	62
Denmark	75	65	52
OECD	64	51	39

Note: Net compensation rates. The figures are averages for 6 different family types. "Short-term unemployed" is the initial unemployment compensation after any waiting period. "Long-term unemployed" is unemployment compensation and welfare benefits, etc. after 60 months' unemployment. "Average income" is equivalent to the average income of a worker in manufacturing industry; "Low income" and "High income" are, respectively, 67 and 150 per cent of the "Average income". "OECD" includes all 30 OECD countries except Mexico and Turkey.
Source: OECD (2004b) and own calculations.

cated by the significant changes implemented in Germany as from 1 January 2005, known as Hartz IV. As a consequence, the compensation for the long-term unemployed has been reduced substantially, while it remains unchanged for the short-term unemployed.

Prior to this amendment, German unemployment compensation is seen to have been high, cf. Table 1. For the short-term unemployed it

AVAILABILITY INDICATOR Chart 3



Note: The availability indicator, which primarily measures formal availability requirements, is based on 8 questions. Each reply is assigned a value from 1 to 5, with 5 indicating maximum stringency in availability requirements. OECD is calculated as a simple average of the 16 member states participating in both surveys: Australia, Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Iceland, Ireland, Netherlands, Norway, Portugal, Sweden, UK and USA.
Source: Danish Ministry of Finance (1998) and Hasselpflug (2005) based on the Ministry's own questionnaire surveys.

has been particularly favourable for those in the high income brackets, while e.g. the Danish system is relatively generous to the low income brackets. For the long-term unemployed, German unemployment benefits have so far been relatively generous across income brackets.

Viewed in isolation, a generous unemployment benefit system increases unemployment since the gap between earned income and unemployment benefits is small. The response is usually to set a number of requirements for entitlement to unemployment benefits, in particular availability for work. In practice it is difficult to measure whether the conditions are lenient or not. However, the figures available indicate that the formal German availability requirements – including any sanctions – have been fairly mild, cf. Chart 3. The German rules were tightened slightly from 1997 to 2004, but the gap to the OECD has widened marginally. The opposite is the case in Denmark, where unemployment benefits are also generous, but there has been a firmer attitude towards the availability of the unemployed.

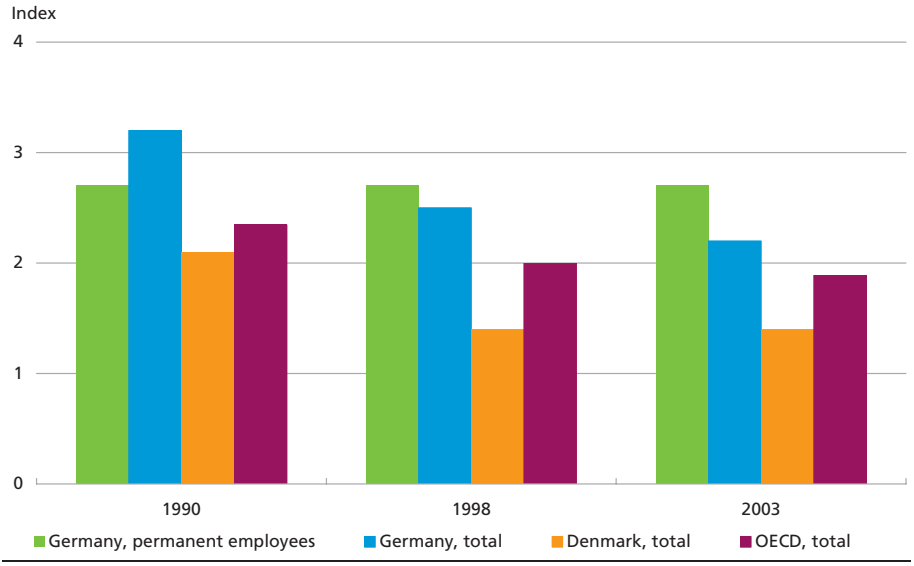
The combination of high unemployment benefits and relatively low availability requirements has undoubtedly contributed to a sustained high level of unemployment in Germany. The Hartz reforms aim to counter this, partly by reducing unemployment benefits for the long-term unemployed, and partly by tightening the formal availability requirements, which has already been reflected in far more stringent enforcement (OECD, 2004a).

Employment protection

Compared to other countries, it is difficult for German business enterprises to lay off staff. Employment protection is extensive, although the rules have been diluted somewhat in the last 10-15 years, cf. Chart 4. This relaxation solely concerns the rules applying to temporary employees, while those for permanent employees have remained unchanged at a relatively high level. Presumably business enterprises have indirectly sought to increase flexibility by taking on additional temporary employees. In the early 1990s, temporary employees accounted for approximately 10 per cent of the labour force; by 2002 this figure had risen to approximately 12 per cent.

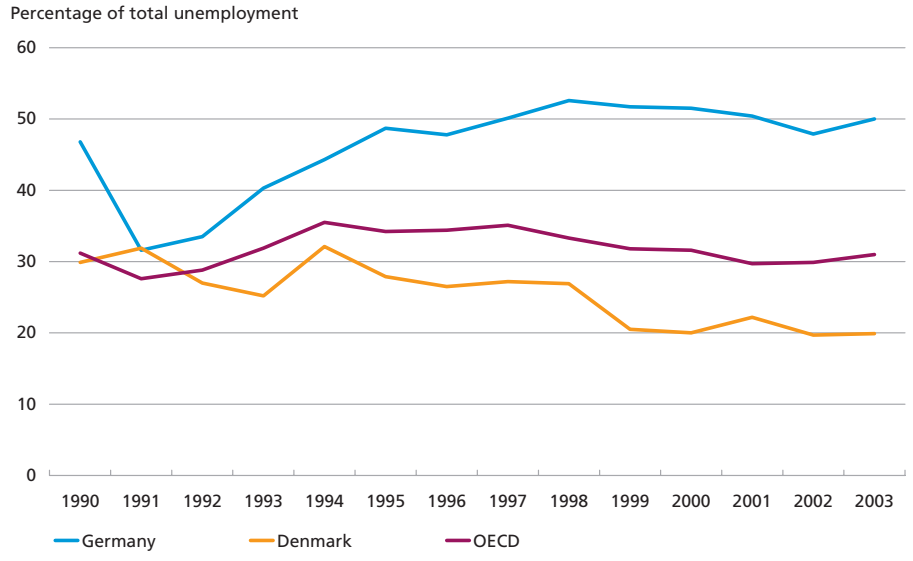
It has proved to be difficult to establish a clear linkage between employment protection and unemployment (OECD, 2004c). There are two opposite effects. On the one hand, restrictive rules protect existing jobs, but on the other hand business enterprises are more cautious towards taking on new (permanent) employees, and investigations reach different conclusions. However, the OECD believes that more restrictive employment protection lengthens the spells of unemployment. As Chart 5

EMPLOYMENT PROTECTION Chart 4



Note: The employment protection measure can assume values from 0 to 6. The higher the value, the more restrictive the provisions. "Total" comprises rules for both permanent and temporary employees. "OECD" is calculated as a simple average of the 20 OECD countries for which database values are available for all three years: Australia, Austria, Belgium, Canada, Denmark, Finland, France, Greece, Ireland, Italy, Japan, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, Germany, UK and USA.
Source: OECD, *Labour Market Indicators*, database.

LONG-TERM UNEMPLOYMENT Chart 5



Note: Percentage of the unemployed who have been out of a job for more than 1 year. Calculated on the basis of standardised ILO rates of unemployment. "OECD" includes all OECD countries.
Source: OECD, *Labour Market Data*, database.

shows, long-term unemployment in Germany is substantially higher than in e.g. Denmark, where business enterprises can relatively easily adjust their workforce, cf. Chart 4. Job turnover is also lower in Germany. For certain groups in Germany, the degree of employment protection is determined by age and seniority, which lowers the incentive to change jobs, and thereby the adaptability of the workforce.

Several factors indicate that the restrictive German rules may have had a negative impact on the labour market in recent years.

Firstly, the labour market may have split into two parts, with the *insiders* (permanently employed) using the high degree of job security to push wages, etc. upwards at the expense of the *outsiders* (the unemployed and temporarily employed). Secondly, surveys indicate that stringent employment protection has an impact on the rate at which unemployment can decline (Nickell et al., 2005). The reason is presumably that in a situation with high unemployment business enterprises are cautious towards taking on new staff even if the economy is picking up, since they may later find it difficult to reduce their workforce again. Finally, the costs of employment protection may have increased. Adaptability has presumably become more important in step with globalisation and the general need for structural adjustment of the German economy in response to e.g. reunification.

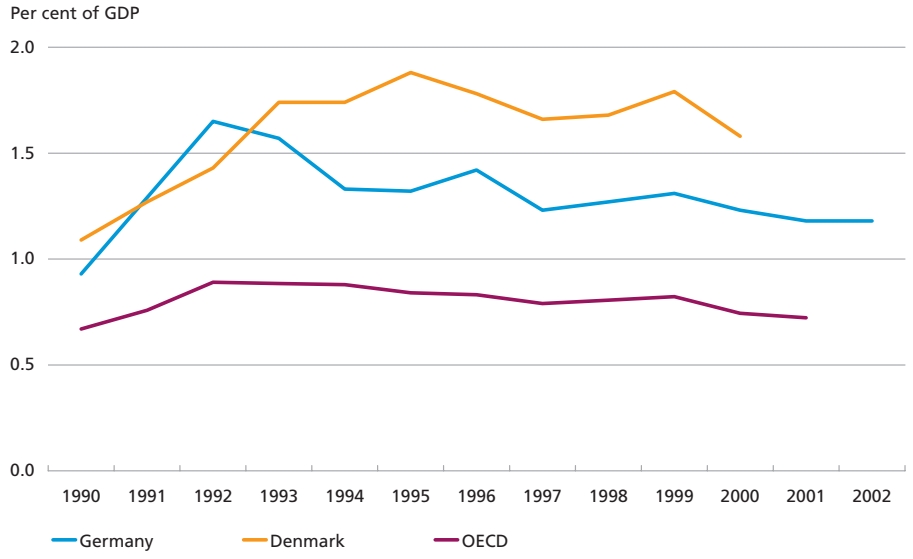
Active labour-market policies

Labour-market policies can be divided into active and passive measures. Active measures include activation programmes to get the unemployed back into jobs via upgrading of qualifications, education, job training, etc. Passive measures are typically unemployment and cash benefits, paid out on the condition that the recipient is available for work.

Active labour-market measures may have both a positive and a negative impact on unemployment. In addition to the positive direct impact of upgrading qualifications, etc., the prospect – or threat – of an activation offer may also motivate some of the unemployed to search for a job sooner than they would otherwise do. It is also tested whether the unemployed person is in fact available for work. This is an objective in itself when the unemployment benefit system is so generous that there could be people who receive unemployment benefits without actually wanting a job. On the negative side, activation may contribute to sustaining unemployment if those being activated are away from the labour market for too long and the quality of the activation schemes is poor.

Germany spends less on active labour-market policies than Denmark, but more than the OECD average, cf. Chart 6. However, the difference is accentuated by the fact that there are far more unemployed in

COSTS OF ACTIVE LABOUR-MARKET POLICIES Chart 6



Note: OECD is calculated as a simple average of the 18 countries for which data is available for all years in the period 1990-2001: Australia, Austria, Belgium, Canada, Finland, France, Germany, Japan, Korea, Mexico, Netherlands, New Zealand, Norway, Spain, Sweden, Switzerland, UK and USA. The 1996 observation is partly estimated since no Swedish figures are available for this year. Data for Denmark is only available up to and including 2000. The sum of the costs within the following categories has been applied: 1) *Public employment services and administration*, 2) *Labour market training*, 3) *Youth measures*, 4) *Subsidised employment* and 5) *Measures for the disabled*.
Source: OECD, *Labour Market Indicators*, database.

Germany. Expenditure per unemployed person is considerably lower than in Denmark, where active measures were given higher priority in the 1990s, cf. Chart 6.[1] High expenditure on activation is not necessarily a target in itself since output quality should match input, but it is seen that increased emphasis on this area coincided with a decline in unemployment in Denmark.

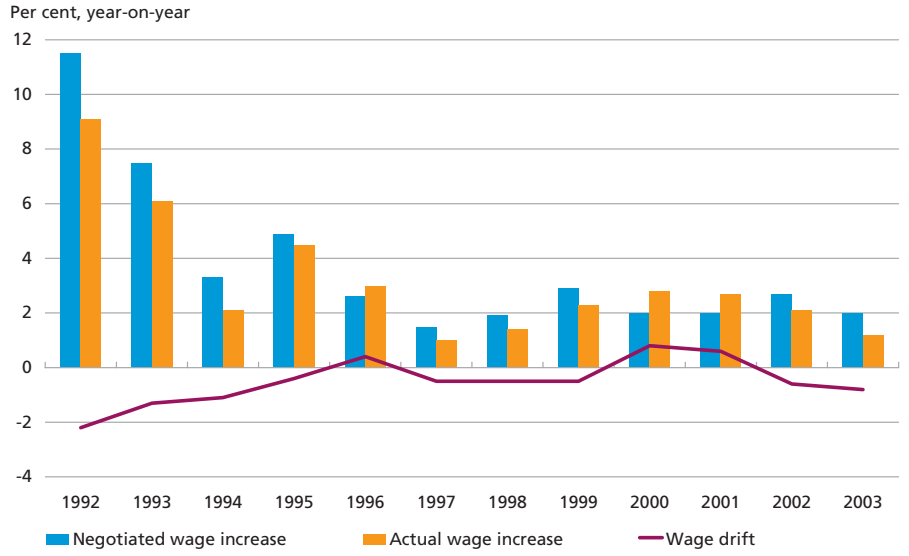
Apparently the quality of some of the German activation measures is doubtful. Much of the effort has been concentrated in the former East Germany, where unemployment and the need for retraining have been particularly evident. However, surveys indicate that the measures have primarily kept the unemployed out of work, thereby aggravating the situation (OECD, 2001). On the other hand, there are indications of positive effects in the former West Germany (Lechner et al., 2005).

Wage costs

The level of German wage costs is high. Total hourly wage costs in the manufacturing industry were in the range of kr. 200 in 2004, compared

[1] For a description of Denmark's experience, see e.g. the Danish Ministry of Labour (2000), the Danish Ministry of Finance (2004), Gaard and Kieler (2004), Jespersen et al. (2004), Rosholm and Svarer (2004) and the Danish Welfare Commission (2005a).

WAGE DRIFT IN GERMANY Chart 7



Note: Hourly wages. Wage drift is the difference between actual and negotiated wage increases. The high wage increases in the early 1990s should be viewed against the background of the wish to harmonise East German wages with the level in West Germany.
Source: Deutsche Bundesbank (2004).

to approximately kr. 130 in the OECD overall.[1] One reason for the high level in Germany is that a number of welfare programmes, e.g. pensions and health insurance, are partly financed via social contributions split equally between the business enterprise and the employee. If the social contributions are deducted, direct German wage costs are still relatively high, but somewhat closer to the OECD average.

In step with the growing demand for welfare benefits, the social contributions have generally gone up over time and currently amount to almost 42 per cent of wages.[2] Viewed in isolation, this development undermines business competitiveness.[3] As part of its reform plans the German government has now set a target to reduce this contribution, but so far almost no progress has been made in this area, and the demand for welfare benefits is not likely to fall in the future.

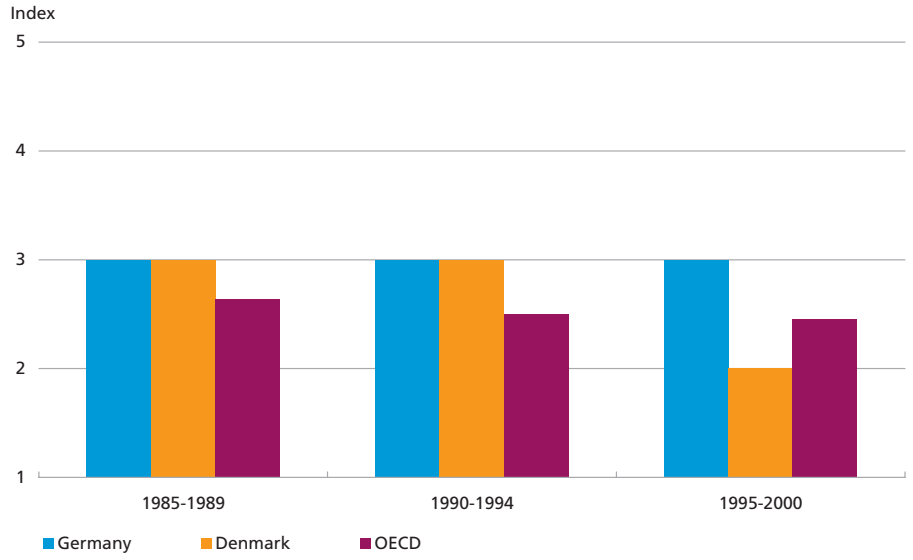
Overall, there seems to be a need for adjustment of costs in Germany. This is also indicated by the wage drift, which has mainly been negative in recent years, cf. Chart 7. This reflects that enterprises have agreed

1 Based on data from the US Department of Labor. At present, however, there is uncertainty concerning the exact figures since the latest publication includes substantial revisions of the historical figures that are not accounted for.

2 The social contribution of 41.9 per cent of wages comprises retirement insurance (19.5 per cent), health insurance (14.2 per cent), unemployment insurance (6.5 per cent) and long-term care insurance (1.7 per cent).

3 So far German industrial exports have fared well, however, due to an attractive product mix, among other factors.

CENTRALISATION OF WAGE FORMATION Chart 8



Note: The degree of centralisation rises with the size of the index, so that 1 is the lowest degree of centralisation and 5 the highest. "OECD" is the average of the 21 countries for which data is available for all three periods: Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Ireland, Italy, Japan, Korea, Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, UK and USA.
Source: OECD (2004c).

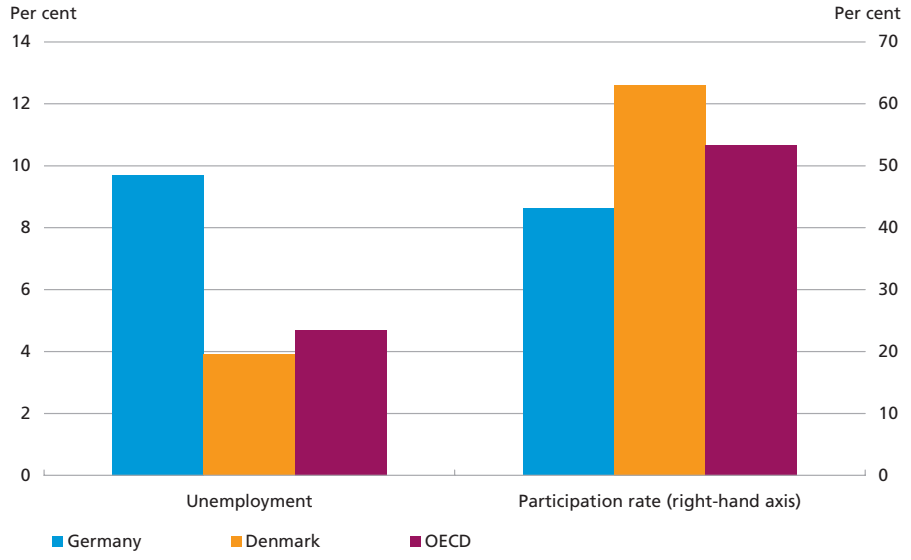
lower wage increases at local level than agreed in the collective bargaining. In addition, enterprises are increasingly hiring staff in subsidised jobs (mini and midi jobs) that entail lower social contributions.

Wage formation

During the last few years wage formation has become less centralised. The social partners have permitted opt-out clauses in collective agreements, which allows for the introduction of enterprise-specific supplementary agreements. In 2004, a number of large, export-oriented enterprises concluded agreements entailing longer working hours without equivalent wage increases.[1] Historically, wage formation in Germany has been more centralised than in the OECD countries on average, cf. Chart 8. In view of the relatively high level of costs in Germany, it seems that for a number of years the centralised negotiation framework has not resulted in wage increases that reflect the sluggish labour market and the underlying productivity trends. The trade unions may possibly have focused excessively on the interests of the permanently employed *(insiders)* rather than those of the unemployed or temporarily employed *(outsiders)*.

[1] The average working hours per employee in Germany are considerably below the OECD average, but at the same level as in Denmark.

UNEMPLOYMENT AND PARTICIPATION RATE FOR THE 55-64-YEAR-OLDS (2003) Chart 9



Note: Standardised ILO rates of unemployment, which are not immediately comparable with the rates of unemployment in Chart 1. "OECD" includes all OECD countries except France, Iceland and Luxembourg.
Source: OECD (2004c).

The greater decentralisation of wage negotiations in the last few years reflects a high level of costs and increased need to diversify wages, cf. Chart 7, to match levels that the individual enterprises can afford.[1] The need for wage differentiation is also reflected in a declining coverage level for collective agreements. In eastern Germany, which has a less favourable ratio between productivity and wages than western Germany, the coverage is particularly low (Deutsche Bundesbank, 2004).

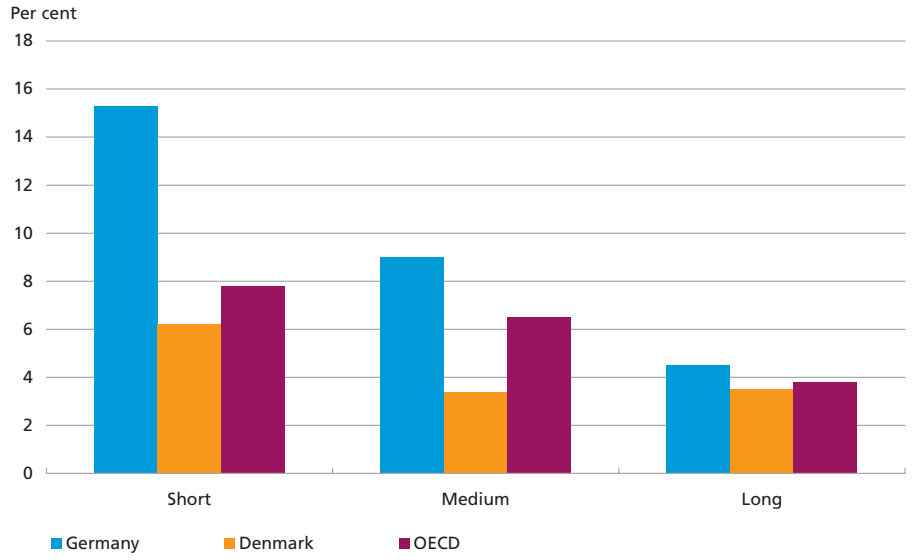
Unemployment among older people

The German labour market appears to be functioning particularly poorly for the older people in the labour force. Not only is unemployment higher than in a number of other countries, but the participation rate is also considerably lower, cf. Chart 9. The main explanations are the unemployment benefit system and the opportunity to take early retirement.

Unemployment benefits are far more generous for the 55-64-year-olds, who are eligible for the highest rate for 32 months, compared to e.g. 12 months for the unemployed below the age of 45. In addition, the job-search requirements are less stringent for older people. Like Denmark, Germany also offers a number of early retirement options. For instance, the unemployed can retire at the age of 60. The low rate of

[1] Increasing decentralisation is also seen in Denmark, where the wage level is also high. For a sustained period of time wage increases have been higher than in Germany, reflecting a tighter labour market. See Beier and Pedersen (2005) for an analysis of wages and competitiveness in Denmark.

UNEMPLOYMENT AND LEVEL OF EDUCATION (2002) Chart 10



Note: Standardised ILO rates of unemployment, which are not immediately comparable with the rates of unemployment in Chart 1. "Short" covers *less than upper secondary education*. "Medium" covers *upper secondary education*. "Long" covers *tertiary education*. "OECD" includes all OECD countries.
Source: OECD (2004c).

employment and high rate of unemployment among the over 55s illustrate that the problems cannot be solved by reducing the labour supply via retirement schemes.

The conditions for the older unemployed are one target area of the current reforms. From 2006, the rules will be tightened so that the highest unemployment benefits are only available for 18 months. In addition, more stringent job-search requirements will be introduced, as well as a gradual increase in the early retirement age to 63 by 2008.

Education and training

There are indications that education and training contribute to a mismatch between the demand for and supply of different types of labour. Unemployment is generally higher for the less educated. This is particularly true in Germany, cf. Chart 10, and should be linked to the fact that Germany does not perform too well in international educational surveys, e.g. the PISA Survey. Relatively few people go on to higher education, and the completion time is among the longest in the OECD (OECD, 2004a). In addition, the number of people completing higher education declined in the mid-1990s. At the same time, the demand for highly educated labour rose.[1] This discrepancy between the supply of and the

[1] In Denmark a similar increase in the demand for educated labour was seen in the 1990s, but unlike in Germany the supply also rose, cf. the Danish Welfare Commission (2005b).

demand for labour should be viewed against the background of a relatively rigid wage structure across qualification levels (Prasad, 2004). This means that the excess demand for highly educated employees did not entail any noticeable rise in their relative wages, and vice versa for those with less education. The challenges of matching supply and demand are also reflected in the fact that for a given level of unemployment the number of vacancies has risen in Germany.

CONCLUSION AND PERSPECTIVE

The problems in the German labour market are complex and can only be solved by considering the interaction between a number of conditions. The article points to e.g. reunification, low job flexibility, the use of labour-market policies, a high level of wage costs and a generous unemployment benefit system, which was previously coupled with very lenient availability requirements.

With the "Hartz reforms" the German government has introduced a number of necessary labour-market reforms, the full impact of which has not been seen yet. Against the background of sustained low growth and high unemployment the government presented a 20-point action plan in March 2005, involving e.g. new initiatives relating to better earnings opportunities for the long-term unemployed, lower corporate tax, less bureaucracy and special measures for the marginal age groups among the unemployed. The opposition has commended the plan, but also argues for measures to counteract the limited job flexibility and the high level of wage costs. Previously, the lack of broad political agreement has obstructed the introduction of structural reforms. This is partly attributable to the two-chamber system, under which economic policy decisions must often be passed by both chambers (see e.g. IMF, 2004b).

Overall, the high unemployment rate is the result of inadequate measures in the labour market for a number of years, which has contributed to the current low growth. Because the reform process was not initiated in due time, Germany has been compelled to introduce radical changes in the labour market within the last couple of years. This illustrates the importance of ongoing structural adjustments – even if the short-term economic prospects are favourable.

It is essential to emphasise that the challenges faced by the German economy are not limited to the labour market. For instance, a number of welfare programmes are under pressure, and reforms of the health and pension sectors, among others, have been launched in parallel with the Hartz reforms. The necessary modernisation of the German economy has thus begun in a wide range of areas.

LITERATURE

Beier, Niels C. & Erik Haller Pedersen (2005), Wages, Competitiveness and the Balance of Payments, Danmarks Nationalbank, *Monetary Review*, 1st Quarter.

Danish Ministry of Finance (1998), Availability criteria in selected OECD-countries, *Working Paper* No. 6, November.

Danish Ministry of Finance (2004), *Finansredegørelse 2004* (Medium Term Economic Survey), (in Danish only).

Danish Ministry of Labour (2000), Effects of Danish Employability Enhancement Programmes.

Danish Welfare Commission (2005a), Future welfare – what other countries are doing (in Danish only), *Analysis report*, March.

Danish Welfare Commission (2005b), Future welfare and globalisation (in Danish only), *Analysis report*, March.

Deutsche Bundesbank (2004), *Monthly Report*, September.

Federal Ministry of Transport, Building and Housing (2004), *Jahresbericht der Bundesregierung zum Stand der Deutschen Einheit*.

Gaard, Søren and Mads Kieler (2004), Two decades of structural reform in Denmark: a review, manuscript.

German Council of Economic Experts (Sachverständigenrat) (2004), *Annual Report 2004/05*.

Hasselpflug, Søren (2005), Availability criteria in 25 countries, Danish Ministry of Finance, *Working Paper* No. 12.

IMF (2004a), *Germany – Selected Issues*.

IMF (2004b), Germany has scope to make its Federal system more competitive, *IMF Survey*, vol. 33, no. 22.

Jespersen, Svend, Jakob Roland Munch and Lars Skipper (2004), Costs and benefits of Danish active labour market programmes, University of Copenhagen, manuscript.

Lechner, Michael, Ruth Miquel and Conny Wunsch (2005), Long-run effects of public sector sponsored training in West Germany, Swiss Institute for International Economics and Applied Economic Research, manuscript.

Nickell, Stephen, Luca Nunziata and Wolfgang Ochel (2005), Unemployment in the OECD since the 1960s. What do we know? *The Economic Journal*, 115.

OECD (2001), *OECD Economic Surveys*, Germany.

OECD (2004a), *OECD Economic Surveys*, Germany.

OECD (2004b), *Benefits and Wages – OECD Indicators.*

OECD (2004c), *Employment Outlook 2004*.

Prasad, Eswar S. (2004), The unbearable stability of the German wage structure: evidence and interpretation, *IMF Staff Papers*, Vol. 51, No. 2.

Rosholm, Michael and Michael Svarer (2004), Estimating the threat effect of active labour market programmes, University of Aarhus, Department of Economics, *Working Paper*, No. 2004-06.

APPENDIX 1: LABOUR-MARKET LEGISLATION, NOTABLY HARTZ I-IV

During the 1990s and up to 2002 limited amendments were made to German labour-market legislation, including a minor relaxation of the employment protection rules, enhanced measures to combat long-term unemployment and tightening of the availability and unemployment benefit rules. On taking office in 1998, the Schröder government repealed several of the acts introduced by the previous government, e.g. the relaxation of the employment protection rules and some of the measures to tighten availability rules.

In March 2002, the German government set up the "Hartz Commission", headed by Dr. Peter Hartz, Director of Personnel at VW. In August 2002 the Commission presented its report with recommendations for improvement of labour-market policies. Many of these recommendations have subsequently been transposed into legislation, called the Hartz reforms. The highlights of the most recent labour-market reforms are presented below.

Hartz I (2002)
- Creation of special agencies to provide the unemployed with temporary jobs as stepping stones to the primary labour market.
- Increased focus on speed and quality in job placement services.

Hartz II (2002)
- Lower taxes and social contributions for subsidised jobs (mini and midi jobs) – in order to create a flexible low-wage market.
- Support for unemployed setting up their own enterprise (Ich-AGs).

Hartz III (2003)
- Organisational reform of job centres.

Hartz IV (2004)
- Merging of social welfare and unemployment benefits into one means tested benefit, unemployment benefit II, payable after 12 months' unemployment – aimed at reducing long-term unemployment.
- Tightening of the availability rules and possible sanctions.

In addition, a reduction of the maximum period in which older people are eligible for unemployment benefits has been adopted, as well as a minor relaxation of the employment protection rules, creation of "1-euro jobs", tightening of the older unemployed's right to reject jobs, and a raising of the minimum age for early retirement.

Speech by Bodil Nyboe Andersen at the Annual Meeting of the Association of Danish Mortgage Banks on 28 April 2005

The global economy is generally in a period of strong growth – at a rate of 5.1 per cent in 2004. This may not completely match the picture painted by the media. The reason is that the figure conceals very strong variation between growth rates in various parts of the world.

After a slowdown in 2001 and the beginning of 2002, the USA has achieved annual growth of 3-4 per cent. This growth has been driven particularly by strong private consumption, stimulated by tax reductions and very low interest rates. However, the downside in the USA has been a high and growing current-account deficit and a considerable government finance deficit. Both of these deficits are often mentioned as the reason for the dollar's weakening against the euro. However, the USA has not faced difficulties in financing its current-account deficit and selling its government bonds. The demand for dollar assets is still high, especially from the Asian countries.

Even though financing has not presented problems for the USA, this does not change the fact that the USA is becoming increasingly indebted to the rest of the world. This course does not appear sustainable, but it is naturally hard to predict how long it can continue.

Asia, apart from Japan, has even higher annual growth rates, at 6-9 per cent. This reflects strong growth in exports to especially the USA, as well as growing domestic demand, including rising private consumption.

This American-Asian growth is driving the global economy.

Growth in the euro area, on the other hand, is currently very weak. Once again, private consumption is part of the explanation. Especially in Germany, households are reluctant to increase their consumption demand. More fundamentally, Germany has a clear need for structural reforms of its labour market and welfare system. The reforms are being addressed, but as long as the changes are still ongoing and even more are expected, general uncertainty will prevail. This contributes to the caution towards increasing private consumption.

Structural reforms are also needed elsewhere in the euro area. For the euro area overall, the weak development in consumption is a key factor behind the moderate growth.

In Denmark, however, we are good consumers! At least in the sense that we are currently spending a lot of money. Private consumption rose by more than 4 per cent in 2004, the largest increase in 10 years. The Danes have great faith in their own future finances, and they show no hesitance in taking advantage of recent years' tax cuts, lower interest rates and deferred-amortisation loans in what could almost be called a consumption bonanza.

As is the rule for such upswings, the impact on Danish employment has materialised with a certain time lag. Moreover, part of the consumption increase has naturally enough been directed at imported goods and services, including foreign travel. This does, of course, create jobs, but in other countries. This development in imports has contributed to reducing the current account surplus by almost kr. 10 billion, albeit from a very high level exceeding kr. 45 billion in 2003. It is important to note, however, that stronger growth in demand in Denmark than abroad traditionally has a strong impact on the trade figures.

Some of us are old enough to remember how in the 1970s and 1980s the balance of payments was the key problem in the Danish economy for a period of more than 20 years. We can certainly confirm that the Danes were also good consumers then.

Solving the sustained Danish current-account problem required a number of structural economic reforms in e.g. the labour-market and taxation areas. This entailed some difficult years of adjustment in the 1980s and 1990s. But these reforms made a vital contribution to the strength of the Danish economy from the late 1990s right up to the present day. Unlike then, we cannot say today that overall we are living beyond our means. Having said that, we should also remember that we currently have very substantial export revenues from oil and shipping, and these sectors are highly sensitive to cyclical developments.

In this perspective the current rising consumption does not pose balance problems for the economy. But in the slightly longer term the economic upswing ought to be more balanced so that overall production can keep up with growth in demand.

Unemployment has been falling during the past year and is now at the level of the spring of 1998 when the government of the day introduced the Whitsun package of economic measures in order to dampen consumption and increase the supply of labour. The Government Platform of February 2005 sets out a number of means to achieve a permanent increase in employment. Recent developments show the importance of immediate concrete initiatives to increase the supply of labour. Otherwise there is a risk of a situation with pressure on the labour market.

The traditional basis for Danish mortgage credit was that homeowners could borrow on capital-market terms. The bonds were callable, so that borrowers could take advantage of falling interest rates, but were not affected by interest-rate increases.

The terms offered by the various mortgage-credit institutes were virtually identical, and bonds issued by the various institutes were perceived as almost perfect substitutes, called "uniform bonds" or "enhedsobligationer".

The mortgage-credit market has also traditionally been closely regulated in terms of maturities, mortgageable limits and types of loans. The limitations on access to lending, designed to steer cyclical development, were gradually removed so that legislation was based solely on the security aspects. Up to the mid-1990s this system by and large reigned supreme.

But then the development of new mortgage-credit products began to take off.

Today there is a choice between not only fixed and adjustable interest rates, but also mixes such as adjustable interest rates with a ceiling and deferred amortisation for fixed periods, while commercial banks have also joined the market to offer mortgage loans. Loan conversions are the order of the day, and the average borrower keeps loans unchanged for a shorter period than was the case just a few years ago.

Homeowners are bombarded with offers of loan conversion, and the products offered are becoming ever more complex. Institutions compete intensely to be the first to introduce new products in order to win market shares. The only parameter that does not seem to be subject to competition is the contribution fees for loans for owner-occupied homes and summer cottages.

The mortgage-credit sector should perhaps consider whether the many new products will lead to bond series that are so small that they adversely affect the very favourable interest terms traditionally characterising Danish mortgage-credit bonds.

The rising indebtedness, greater use of adjustable interest rates and the opportunity for deferred-amortisation loans have brought up the issue of the vulnerability of households in the event of a significant increase in interest rates.

On the basis of data made available by Nykredit, Danmarks Nationalbank has analysed the sensitivity of homeowners to changes in interest rates. The analysis will be published in our annual publication "Financial Stability", which will be issued on 12 May. The analysis exclusively considers effects on interest costs without incorporating the mortgageable values.

The higher the homeowners' incomes, the lower their interest burden, i.e. interest expenses as a ratio of gross income. On the other hand, the groups with the highest incomes have a larger proportion of adjustable-rate loans.

Despite the variations in the debt composition of the different groups, the calculations show that the interest-rate exposure is more or less identical for all income groups. Interest-rate exposure indicates the increase in the average interest burden on the group on an increase in the short-term interest rate. The latter is expressed as the interest rate on an adjustable-rate loan, irrespective of maturity.

The analysis shows that if the short-term interest rate increases by 1 percentage point, homeowners' interest expenses will on average increase by approximately 1 per cent of their gross income. Note that this is an average consideration. There is considerable variation in the figures both within the individual groups and with regard to other criteria, e.g. geographical location. For example, households in Greater Copenhagen and Århus have a higher mortgage debt than in the rest of the country.

Is this a large or small degree of vulnerability? This cannot be assessed from a single partial analysis of the debt composition.

Firstly, as mentioned, the figures are subject to considerable variation. Even if the average homeowner does not face considerable difficulties in paying a higher interest rate, there is a significant group of households that are far more vulnerable because their interest-rate exposure is more than twice as high.

Secondly, vulnerability depends on whether the household has other loans at adjustable interest rates, whether it has a buffer to meet any higher interest expenses and whether it can easily reduce its consumption in the event of an interest-rate increase. Unfortunately, the analysis does not include data that would shed light on this aspect. Considerations of this nature should be central elements of the advice provided when loans are raised.

Analysing homeowners' vulnerability is naturally relevant because for many years development has been in one particular direction. House prices have risen and risen while the interest rate has been very low and it has become easier to borrow. The option of deferred-amortisation loans has been taken up more than most people had expected. Therefore the question is now being raised of whether there is a property-market bubble, and if there is, when the bubble will burst. Nobody can give a clear answer to that.

Bubbles are extremely interesting for economists to analyse, but unfortunately experience shows that bubbles can neither be predicted nor identified when they exist. Bubbles are only apparent in hindsight.

In mortgage-credit circles – and in the media in general – falling interest rates and low interest rates are considered to be positive while high interest rates have a negative image. This is the typical viewpoint of the borrower.

However, there is also a creditor side to the story, even though it plays a far smaller role in the debate. Perhaps this is because many people's assets are mainly placed collectively in pension schemes, so that the relationship between interest-rate level and yield is less apparent to the individual.

We nonetheless see increasing focus on yields and concern about the low bond yield. Many investors still remember the far higher bond yield ten years ago, and the low interest rate has undoubtedly stimulated interest in shares and real assets.

Today a 10-year government bond yields 3.5 per cent interest. With inflation below 1.5 per cent this is still a positive real rate of return. But for tax-liable investors the real bond yield after tax will seem very low.

Almost 25 years in the financial sector have taught me that it is vital to emphasise the relationship between yield and risk. Apart from utilising asymmetrical tax rules, a borrower or financial investor does not have much opportunity to make a profit without assuming a risk. Nobody knows how exchange rates, share prices, interest rates or even house prices will develop. But many do have a firm opinion on this.

So we currently see a growing interest in various more exotic investment products with yields based on exchange rates, share prices, etc. We have had products of these types for many years, but the new aspect is that they are now also marketed to private individuals with relatively modest investment portfolios and no particular financial insight.

Investors may naturally speculate if they wish to, but it is important that they are aware that this is what they are doing.

From time to time tales of disaster in the financial press serve to demonstrate that investors have not always understood that in today's markets an annual yield of 10-12 per cent is unattainable without taking on a large risk.

It is therefore essential that professional advisers take great pains to point out the risks and the opportunities to diversify risk by not putting all one's eggs in the same basket.

Press Releases

ON 29 MARCH: SEVEN NEW CURRENCIES ADDED TO THE LIST OF EXCHANGE RATES PUBLISHED BY DANMARKS NATIONALBANK ON A DAILY BASIS

As from 1 April 2005, seven new currencies are added to the list of exchange rates published by Danmarks Nationalbank, and the number of significant figures for Icelandic kronur (ISK), Hungarian forints (HUF) and Slovenian tolar (SIT) is increased from three to four.

The seven new currencies on the list are:

- Croatian kuna (HRK)
- Russian roubles (RUB)
- Thai baht (THB)
- Malaysian ringgit (MYR)
- Philippine pesos (PHP)
- Indonesian rupiah (IDR)
- Chinese yuan renminbi (CNY)

This brings the number of currencies on the list published by Danmarks Nationalbank to 36.

Danmarks Nationalbank's exchange rates are normally listed daily at 2.15 p.m. on the basis of information from a number of central banks. The exchange rates are published for information only. Currency cannot be bought from or sold to Danmarks Nationalbank at the published exchange rates.

ON 4 APRIL: RULING IN THE HIMMERLANDSBANKEN CASE

The Himmerlandsbanken winding-up estate today lost the "bond case" at the Danish Supreme Court. The ruling means that subscribers to subordinate capital are ranked alongside with other creditors.

After the Supreme Court's ruling, Danmarks Nationalbank will take the necessary steps to ensure that legitimate claims under the guarantee provided by the Guarantee Consortium are met as soon as possible.

ON 2 MAY: CYPRUS, LATVIA AND MALTA JOIN ERM II

With effect from Monday, 2 May 2005, Cyprus, Latvia and Malta have joined the EU's exchange rate mechanism, ERM II.

Danmarks Nationalbank welcomes the new participants in ERM II.

The central rates and fluctuation bands of the three currencies have been fixed vis-à-vis the euro and are stated in press releases from the EU and the ECB.

The entry of the new member states will not entail any changes in the central rate, fluctuation band and other terms and conditions for the Danish krone in ERM II.

Tables

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: 16 June 2005.

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 1-14, 16-18 and 23-24, 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 15 and 19-22. The calculations in Tables 20 and 24 have been made by Danmarks Nationalbank on the basis of data from Statistics Denmark and OECD.

INTEREST RATES AND SHARE-PRICE INDEX Table 1

Effective end-of-year/ from	The Nationalbank's interest rates: Discount rate	The Nationalbank's interest rates: Lending and certificates of deposit	The Nationalbank's interest rates: The ECB's minimum bid rate	End of period	Inter-bank interest rate, 3-months uncollateralized	Bond yields: 10-year central-government bond	Bond yields: 30-year mortgage-credit bond	The Copenhagen Stock Exchange share-price index KFX
	Per cent per annum				Per cent per annum			3.7.89 =100
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
2003	2.00	2.15	2.00	2003	2.16	4.46	5.45	244.35
2004	2.00	2.15	2.00	2004	2.16	3.87	5.07	286.66
2002 6 Dec	2.75	2.95	2.75	Nov 04	2.16	4.02	5.14	282.88
				Dec 04	2.16	3.87	5.07	286.66
2003 7 Mar	2.50	2.70	2.50	Jan 05	2.15	3.67	4.45	291.02
23 May	2.50	2.65	2.50	Feb 05	2.13	3.77	4.47	311.96
6 Jun	2.00	2.15	2.00	Mar 05	2.14	3.74	4.46	316.66
	|	|	|	Apr 05	2.13	3.45	4.34	306.25
2005 16 Jun	2.00	2.15	2.00	May 05	2.12	3.31	4.25	327.18

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
	Kr. billion						
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
2003	224.2	49.7	44.0	157.3	12.9	48.0	122.2
2004	217.6	52.0	60.8	160.4	6.9	72.6	94.6
Dec 04	217.7	52.0	58.0	160.4	7.1	72.6	94.8
Jan 05	223.6	50.8	65.8	163.6	13.9	84.3	93.2
Feb 05	224.1	50.7	50.6	187.2	9.6	87.6	109.3
Mar 05	235.1	51.6	80.7	177.7	5.6	93.3	90.0
Apr 05	226.8	52.0	80.3	163.4	4.5	86.8	81.1
May 05	233.1	52.5	81.6	172.7	13.8	98.7	87.8

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-govern-ment securities	Liquidity effect				Change in net position	End of period
	Kr. billion							
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
2003	99.7	94.1	5.6	31.0	-1.0	-3.1	32.5	122.2
2004	75.5	92.6	-17.1	-6.4	-2.6	-1.2	-27.3	94.6
Dec 04	24.0	6.0	18.0	0.1	-0.7	-0.3	17.0	94.8
Jan 05	3.0	10.8	-7.7	6.0	-0.2	0.3	-1.6	93.2
Feb 05	11.7	-3.5	15.2	0.4	0.8	-0.2	16.1	109.3
Mar 05	-7.0	10.3	-17.3	-1.8	-1.9	1.8	-19.2	90.0
Apr 05	9.5	12.6	-3.1	-4.8	0.4	-1.4	-8.9	81.1
May 05	-3.1	-1.9	-1.2	6.3	1.7	-0.1	6.7	87.8

SELECTED ITEMS FROM THE CONSOLIDATED BALANCE SHEET OF THE MFI SECTOR

Table 4

End of period	Total balance	Assets				Liabilities		Foreign assets, net[1]
		Domestic lending		Domestic securities				
		Public sector	Private sector	Bonds, etc.	Shares, etc.	Domestic deposits	Bonds, etc. issued	
	Kr. billion							
2000	2,806.8	68.1	1,690.6	114.2	43.1	649.2	1,019.2	46.3
2001	2,932.1	75.0	1,850.9	133.1	37.0	686.3	1,048.7	-57.0
2002	3,201.5	79.9	1,944.6	142.8	36.5	723.3	1,125.9	-63.9
2003	3,359.0	89.6	2,062.0	123.3	43.3	754.7	1,157.9	-70.7
2004	3,683.4	97.5	2,246.2	100.8	46.3	848.9	1,222.1	-66.9
Nov 04	3,716.9	93.3	2,230.0	107.8	46.2	895.5	1,182.2	-73.6
Dec 04	3,683.4	97.5	2,246.2	100.8	46.3	848.9	1,222.1	-66.9
Jan 05	3,712.9	99.5	2,275.2	102.9	49.1	889.6	1,223.1	-83.3
Feb 05	3,797.7	95.4	2,303.0	108.7	48.0	870.4	1,238.6	-122.2
Mar 05	3,861.2	95.7	2,336.5	109.5	47.2	897.9	1,259.1	-107.3
Apr 05	3,879.0	97.6	2,353.3	98.7	46.8	949.7	1,214.5	-142.2
	Change compared with previous year, per cent							
2000	...	14.5	11.5	-9.2	-5.7	0.1	0.1	...
2001	...	10.2	9.5	16.6	-14.0	5.7	2.9	...
2002	...	6.6	5.1	7.3	-1.4	5.4	7.4	...
2003	...	12.1	6.0	-13.7	18.6	4.3	2.8	...
2004	...	8.8	8.9	-18.2	7.0	12.5	5.5	...
Nov 04	...	6.5	9.2	-11.7	9.2	13.9	6.4	...
Dec 04	...	8.8	8.9	-18.2	7.0	12.5	5.5	...
Jan 05	...	11.4	9.9	-18.6	12.0	9.5	6.4	...
Feb 05	...	9.3	10.8	-12.4	7.2	8.4	6.9	...
Mar 05	...	5.1	10.0	-18.8	6.4	6.1	6.6	...
Apr 05	...	6.8	9.7	-29.2	5.4	6.6	5.4	...

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

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

MONEY STOCK Table 5

End of period	Bank-notes and coin in circula-tion	Deposits on demand	M1	Time deposits with original maturity =<2 years	Deposits at notice with original maturity =< 3 months	M2	Repur-chase agree-ments	Bonds, etc. issued with orginal maturity =< 2 years	M3
	Kr. billion								
2000	37.4	349.2	386.6	101.7	6.9	495.2	3.3	8.6	507.1
2001	39.2	375.6	414.9	102.7	9.9	527.4	4.0	15.0	546.4
2002	39.0	392.1	431.0	105.0	15.8	551.8	7.1	45.8	604.7
2003	41.0	428.2	469.2	112.2	19.2	600.5	2.7	77.3	680.6
2004	43.7	492.8	536.6	119.2	21.0	676.7	2.0	20.2	699.0
Nov 04	42.6	496.9	539.5	144.7	22.3	706.6	4.5	76.4	787.5
Dec 04	43.7	492.8	536.6	119.2	21.0	676.7	2.0	20.2	699.0
Jan 05	43.2	502.0	545.2	135.1	21.3	701.6	4.9	6.7	713.1
Feb 05	43.0	500.4	543.5	134.8	21.3	699.6	6.3	0.5	706.5
Mar 05	43.1	508.1	551.2	128.3	18.3	697.8	2.8	2.4	703.0
Apr 05	44.4	550.1	594.5	133.4	18.8	746.7	6.0	2.0	754.8
	Change compared with previous year, per cent								
2000	...	...	2.3	…	…	-1.3	…	…	-3.1
2001	...	...	7.3	...	...	6.5	...	...	7.7
2002	...	...	3.9	...	...	4.6	...	...	10.7
2003	...	...	8.8	...	...	8.8	...	...	12.5
2004	...	...	14.4	...	...	12.7	...	...	2.7
Nov 04	...	...	12.0	...	...	12.5	...	...	9.5
Dec 04	...	...	14.4	...	...	12.7	...	...	2.7
Jan 05	...	...	13.5	...	...	9.5	...	...	-6.1
Feb 05	...	...	13.8	...	...	10.3	...	...	-6.8
Mar 05	...	...	15.6	...	...	9.5	...	...	-7.7
Apr 05	...	...	17.7	...	...	11.3	...	...	-6.0

SELECTED ITEMS FROM THE BALANCE SHEET OF THE BANKS — Table 6

End of period	Total balance	Assets					Liabilities	
		Lending to MFIs	Domestic lending			Holdings of securities	Loans from MFIs	Deposits
			Total	of which:				
				Households, etc.	Non-financial companies			
	Kr. billion							
2000	1,685.8	427.8	526.2	239.0	186.4	456.1	579.9	684.3
2001	1,798.8	353.0	588.0	253.3	228.8	579.3	627.5	718.0
2002	2,040.1	419.8	599.2	253.5	231.3	620.9	685.6	764.7
2003	2,204.4	468.7	663.0	271.6	285.7	764.4	823.8	795.2
2004	2,418.3	495.6	754.8	324.8	309.6	780.3	823.1	908.0
Nov 04	2,436.3	510.8	738.6	306.1	310.8	789.2	802.0	947.9
Dec 04	2,418.3	495.6	754.8	324.8	309.6	780.3	823.1	908.0
Jan 05	2,465.4	510.4	774.2	321.8	316.1	830.9	867.0	935.9
Feb 05	2,567.6	502.7	782.6	329.0	319.9	895.6	952.6	936.1
Mar 05	2,642.8	562.2	799.5	343.5	324.7	906.8	1,024.6	933.0
Apr 05	2,608.6	527.7	808.4	340.6	331.8	896.1	924.7	989.2
	Change compared with previous year, per cent							
2000	...	10.1	31.6	17.0	59.0	6.6	24.5	0.9
2001	...	-17.5	11.7	6.0	22.8	27.0	8.2	4.9
2002	...	18.9	1.9	0.1	1.1	7.2	9.3	6.5
2003	...	10.7	2.5	7.1	3.1	21.8	18.8	3.9
2004	...	5.7	13.8	19.6	8.4	2.1	-0.1	14.2
Nov 04	...	22.4	14.1	19.2	12.2	2.1	8.6	17.7
Dec 04	...	5.7	13.8	19.6	8.4	2.1	-0.1	14.2
Jan 05	...	12.8	17.0	21.3	12.9	9.9	16.3	11.8
Feb 05	...	12.2	19.0	23.5	14.2	15.6	27.0	11.8
Mar 05	...	13.9	15.6	23.4	9.3	14.6	22.7	10.2
Apr 05	...	16.9	14.6	22.5	7.5	8.3	12.0	13.8

Note: Excluding Danish banks' units abroad. As from 2003 the lending is affected by an addition to the group of banks. The calculation of the rate of increase has been amended accordingly.

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

Table 7

End of period	Total balance	Assets					Liabilities	
		Lending to MFIs	Domestic lending			Holdings of securities	Loans from MFIs	Bonds, etc. issued
			Total	of which:				
				Households, etc.	Non-financial companies			
	Kr. billion							
2000	1,341.1	53.7	1,095.9	830.2	225.6	163.7	36.2	1,212.9
2001	1,579.5	88.3	1,191.8	907.6	246.8	280.7	55.3	1,421.3
2002	1,721.8	77.3	1,285.1	988.0	259.2	338.5	58.9	1,584.2
2003	1,863.8	100.9	1,394.6	1,072.1	284.4	342.6	32.6	1,729.0
2004	2,097.4	91.2	1,489.9	1,141.3	307.9	481.2	26.1	1,952.5
Nov 04	1,760.6	57.5	1,487.2	1,137.5	309.1	176.1	42.7	1,623.7
Dec 04	2,097.4	91.2	1,489.9	1,141.3	307.9	481.2	26.1	1,952.5
Jan 05	1,713.1	68.9	1,499.7	1,147.7	311.1	117.4	17.3	1,618.9
Feb 05	1,780.1	97.7	1,514.7	1,158.4	315.4	136.3	27.0	1,670.9
Mar 05	1,855.8	143.4	1,529.6	1,169.2	318.6	153.8	24.4	1,736.8
Apr 05	1,765.2	70.2	1,538.7	1,174.7	318.6	126.4	22.7	1,667.2
	Change compared with previous year, per cent							
2000	...	10.5	4.2	5.6	1.2	38.8	63.8	8.7
2001	...	64.6	8.8	9.3	9.4	71.5	52.6	17.2
2002	...	-12.5	7.8	8.9	5.0	20.6	6.7	11.5
2003	...	30.6	8.5	8.5	9.7	1.2	-44.8	9.1
2004	...	-9.6	6.8	6.5	8.3	40.4	-19.9	12.9
Nov 04	...	2.9	7.1	6.4	9.2	39.3	217.4	8.9
Dec 04	...	-9.6	6.8	6.5	8.3	40.4	-19.9	12.9
Jan 05	...	40.2	6.8	6.1	9.1	22.9	5.6	8.8
Feb 05	...	93.3	7.2	6.9	8.1	28.6	45.6	9.9
Mar 05	...	74.8	7.2	6.9	8.5	18.4	-9.6	10.8
Apr 05	...	32.9	7.4	6.9	7.5	10.1	0.5	8.4

LENDING TO RESIDENTS BY THE BANKS AND THE MORTGAGE-CREDIT INSTITUTES Table 8

End of period	Total lending			The banks' lending			The mortgage-credit institutes' lending		
	Total	Households, etc.	Business	Total	Households, etc.	Business	Total	Households, etc.	Business
	Kr. billion								
2000	1,688.3	1,069.2	561.0	592.4	239.0	329.7	1,095.9	830.2	231.4
2001	1,814.4	1,161.0	594.7	622.6	253.3	342.3	1,191.8	907.6	252.4
2002	1,917.0	1,241.6	619.2	631.8	253.5	353.0	1,285.1	988.0	266.2
2003	2,087.7	1,343.7	683.1	693.2	271.6	392.3	1,394.6	1,072.1	290.9
2004	2,276.0	1,466.1	741.0	786.0	324.8	426.8	1,489.9	1,141.3	314.2
Nov 04	2,257.0	1,443.6	748.7	769.8	306.1	433.4	1,487.2	1,137.5	315.2
Dec 04	2,276.0	1,466.1	741.0	786.0	324.8	426.8	1,489.9	1,141.3	314.2
Jan 05	2,305.1	1,469.5	765.4	805.4	321.8	448.1	1,499.7	1,147.7	317.3
Feb 05	2,328.6	1,487.4	773.0	813.9	329.0	451.4	1,514.7	1,158.4	321.6
Mar 05	2,360.3	1,512.7	779.0	830.7	343.5	454.2	1,529.6	1,169.2	324.8
Apr 05	2,378.4	1,515.3	788.9	839.6	340.6	464.1	1,538.7	1,174.7	324.8
	Change compared with previous year, per cent								
2000	7.3	8.0	6.6	13.3	17.0	13.1	4.3	5.6	-1.6
2001	7.5	8.6	6.0	5.1	6.0	3.8	8.8	9.3	9.1
2002	5.7	6.9	4.1	1.5	0.1	3.1	7.8	8.9	5.5
2003	6.1	8.2	2.7	1.5	7.1	-1.7	8.5	8.5	9.3
2004	9.0	9.1	8.5	13.4	19.6	8.8	6.8	6.5	8.0
Nov 04	9.2	8.8	9.7	13.6	19.2	10.3	7.1	6.4	8.8
Dec 04	9.0	9.1	8.5	13.4	19.6	8.8	6.8	6.5	8.0
Jan 05	9.9	9.1	11.0	16.2	21.3	12.4	6.8	6.1	8.9
Feb 05	10.7	10.2	11.3	18.0	23.5	13.8	7.2	6.9	7.9
Mar 05	9.8	10.2	8.4	14.8	23.4	8.5	7.2	6.9	8.3
Apr 05	9.6	10.0	7.6	14.1	22.5	7.7	7.4	6.9	7.4

Note: Including lending in Danish banks' units abroad. As from 2003 the banks' lending is affected by an addition to the group of banks. The calculation of the rate of increase has been amended accordingly.

THE MORTGAGE-CREDIT INSTITUTES' LENDING BROKEN DOWN BY TYPE — Table 9

End of period	Index-linked lending	Fixed-rate lending	Adjustable-rate lending		Total	of which:	
			Total	of which =<1 year		Lending in foreign currency	Instalment-free lending[1]
	Kr. billion						
2000	113.1	882.4	99.8	79.0	1,095.4	15.5	...
2001	109.6	836.5	245.7	151.5	1,191.8	54.5	...
2002	103.6	816.0	365.0	200.4	1,284.6	82.5	...
2003	99.5	795.0	499.0	250.0	1,393.5	85.7	44.4
2004	94.6	737.6	656.1	378.4	1,488.4	84.9	170.5
Nov 04	97.3	744.8	644.0	361.7	1,486.1	87.2	...
Dec 04	94.6	737.6	656.1	378.4	1,488.4	84.9	170.5
Jan 05	94.8	724.8	677.8	424.7	1,497.3	85.2	...
Feb 05	95.0	720.1	698.6	443.0	1,513.7	86.9	...
Mar 05	95.1	695.3	738.3	508.5	1,528.8	88.0	206.5
Apr 05	95.3	690.1	751.9	522.4	1,537.3	87.9	...

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

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

THE BANKS' EFFECTIVE INTEREST RATES — Table 10

	Lending				Deposits			
	All sectors	Households, etc.	Non-financial companies	Financial companies	All sectors	Households, etc.	Non-financial companies	Financial companies
	Per cent, per annum							
Q1 03	5.8	8.2	5.8	3.4	2.2	1.7	2.4	2.7
Q2 03	5.8	8.1	5.6	3.2	2.0	1.6	2.1	2.5
Q3 03	5.4	7.6	5.2	2.8	1.5	1.1	1.7	2.1
Q4 03	5.4	7.5	5.0	2.9	1.5	1.1	1.7	2.1
Q1 04	5.3	7.3	4.9	2.9	1.6	1.1	1.7	2.1
Q2 04	5.2	7.2	4.8	2.9	1.6	1.1	1.7	2.1
Q3 04	5.2	7.1	4.8	2.8	1.5	1.2	1.7	2.0
Q4 04	5.1	6.9	4.8	2.8	1.6	1.2	1.7	2.1
Q1 05	5.1	6.7	4.8	2.8	1.7	1.3	1.7	2.1
Nov 04	5.1	6.9	4.8	2.8	1.6	1.2	1.7	2.1
Dec 04	5.1	6.8	4.8	2.8	1.6	1.2	1.7	2.1
Jan 05	5.1	6.8	4.7	2.8	1.6	1.3	1.7	2.1
Feb 05	5.1	6.8	4.8	2.8	1.7	1.3	1.7	2.1
Mar 05	5.0	6.7	4.7	2.7	1.7	1.3	1.7	2.2
Apr 05	5.0	6.6	4.7	2.7	1.7	1.3	1.7	2.1

SELECTED ITEMS FROM THE BALANCE SHEET OF THE INVESTMENT ASSOCIATIONS

Table 11

End of period	Total balance	Assets: Holdings of securities: Bonds, etc.	Assets: Holdings of securities: Shares, etc.	Liabilities: Certificates issued by investment associations by owner: Households, etc.	Liabilities: Certificates issued by investment associations by owner: Insurance companies and pension funds	Liabilities: Certificates issued by investment associations by owner: Other residents	Liabilities: Certificates issued by investment associations by owner: Abroad
	Kr. billion						
2000	258.1	100.5	147.3	140.8	56.8	49.0	10.4
2001	282.8	135.4	137.1	143.4	62.2	66.9	9.6
2002	288.9	180.8	89.5	153.6	68.9	52.7	8.9
2003	367.1	237.2	108.7	188.2	103.2	60.4	12.3
2004	574.2	326.5	164.6	213.1	163.4	180.1	15.3
Q1 04	481.3	282.9	135.3	199.5	120.7	145.0	12.9
Q2 04	478.5	277.5	138.8	199.6	120.8	143.4	12.8
Q3 04	497.4	292.1	139.4	205.6	125.6	150.2	13.5
Q4 04	574.2	326.5	164.6	213.1	163.4	180.1	15.3
Q1 05	607.5	343.4	181.2	224.6	193.5	169.3	16.1
		Quarterly transactions, kr. billion					
Q1 04	...	40.0	17.1	7.5	12.6	80.0	0.6
Q2 04	...	1.2	5.1	5.1	2.8	0.0	0.1
Q3 04	...	10.0	1.9	4.0	2.5	3.9	0.3
Q4 04	...	36.3	19.2	3.1	31.1	24.6	1.5
Q1 05	...	15.7	10.0	6.5	7.5	5.0	0.6

SECURITIES ISSUED BY RESIDENTS BY OWNER'S HOME COUNTRY Table 12

End of period	Bonds, etc.						Shares	
	Total		of which:					
			Central-government securities		Mortgage-credit bonds			
	Denmark	Abroad	Denmark	Abroad	Denmark	Abroad	Denmark	Abroad
	Market value, kr. billion							
2000	1,659.5	336.8	455.1	214.6	1,090.3	118.2	634.0	255.2
2001	1,787.7	414.6	443.7	217.1	1,231.8	194.5	480.5	231.1
2002	1,999.8	414.7	479.8	222.9	1,411.6	189.6	384.3	162.3
2003	2,124.2	419.6	488.2	210.0	1,523.9	207.9	488.1	208.6
2004	2,370.0	452.2	496.7	224.7	1,759.8	224.8	592.1	244.5
Dec 04	2,370.0	452.2	496.7	224.7	1,759.8	224.8	592.1	244.5
Jan 05	2,007.8	446.5	514.4	210.4	1,382.7	233.5	610.7	238.0
Feb 05	2,056.4	434.4	515.5	196.0	1,429.0	235.7	648.4	250.9
Mar 05	2,108.5	460.2	511.1	215.8	1,485.8	241.7	650.4	259.3
Apr 05	2,057.2	448.2	529.0	212.4	1,415.6	233.0	633.5	251.7
May 05	2,113.5	454.3	523.6	216.4	1,475.1	235.0	688.8	257.1

HOUSEHOLDS' FINANCIAL ASSETS AND LIABILITIES — Table 13

End of period	Assets					Liabilities		
	Currency and bank deposits, etc.	Bonds, etc.	Shares and certificates issued by investment associations, etc.	Life-insurance and pension-scheme savings, etc.	Total	Loans, etc.	Net financial assets	Total
	Kr. billion							
2000	528	214	307	865	1,913	1,226	687	1,913
2001	551	199	286	890	1,927	1,316	611	1,927
2002	580	191	285	931	1,987	1,403	584	1,987
2003	618	181	361	1,002	2,162	1,506	656	2,161
2004	672	180	426	1,074	2,353	1,667	686	2,353
Q4 03	618	181	361	1,002	2,162	1,505	656	2,161
Q1 04	617	176	381	1,042	2,216	1,493	724	2,217
Q2 04	659	166	386	1,043	2,255	1,554	701	2,255
Q3 04	667	164	401	1,045	2,278	1,571	707	2,278
Q4 04	672	180	426	1,074	2,353	1,667	686	2,353

COMPANIES' FINANCIAL ASSETS AND LIABILITIES — Table 14

End of period	Assets				Liabilities				
					Debt				
	Currency, bank deposits, and granted credits, etc.	Bonds, etc.	Shares and certificates issued by investment associations, etc.	Total	Loans, etc.	Bonds, etc. issued	Shares, etc. issued	Net financial assets	Total
	Kr. billion								
2000	468	152	662	1,282	1,032	79	1,122	-951	1,282
2001	516	139	703	1,358	1,141	95	1,032	-910	1,359
2002	529	139	628	1,296	1,111	114	909	-838	1,296
2003	626	138	627	1,393	1,128	125	1,080	-939	1,392
2004	634	164	734	1,532	1,172	170	1,153	-963	1,532
Q4 03	626	138	627	1,393	1,128	125	1,080	-939	1,392
Q1 04	601	140	654	1,396	1,126	138	1,121	-989	1,396
Q2 04	550	142	653	1,345	1,160	136	1,067	-1,018	1,345
Q3 04	545	144	681	1,371	1,156	144	1,094	-1,023	1,371
Q4 04	634	164	734	1,532	1,172	170	1,153	-963	1,532

Note: Companies are defined as non-financial companies.

CURRENT ACCOUNT OF THE BALANCE OF PAYMENTS (NET REVENUES) Table 15

	Goods (fob)	Services	Goods and services	Wages and property income	Current transfers	Total current account
	Kr. billion					
2000	54.1	22.1	76.2	-32.8	-24.8	18.6
2001	61.7	25.0	86.7	-25.0	-21.6	40.1
2002	60.7	17.6	78.3	-24.6	-23.3	30.3
2003	63.9	22.4	86.2	-17.1	-23.0	46.1
2004	57.0	17.6	74.6	-13.7	-25.0	35.9
May 03 - Apr 04	63.2	24.1	87.4	-15.5	-23.5	48.3
May 04 - Apr 05	51.6	20.4	72.0	-14.6	-19.4	38.0
Nov 04	6.1	0.7	6.7	-5.2	-1.6	-0.1
Dec 04	3.3	0.3	3.6	-0.5	-2.4	0.7
Jan 05	2.0	2.2	4.3	-0.6	-1.8	1.9
Feb 05	4.6	1.0	5.6	-0.7	3.7	8.6
Mar 05	4.0	2.2	6.2	-4.9	-1.0	0.3
Apr 05	3.3	3.3	6.6	-1.6	-1.2	3.8

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

PRINCIPAL ITEMS OF THE BALANCE OF PAYMENTS
(NET PAYMENTS FROM ABROAD) Table 16

	Current account	Capital import				Other[1]	Increase in the foreign-exchange reserve
		Direct investments		Portfolio investments	Other capital import		
		Danish abroad	Foreign in Denmark				
	Kr. billion						
2000	18.6	-202.7	266.8	-145.8	64.3	-44.2	-43.0
2001	40.1	-107.9	92.5	-35.3	7.8	30.2	27.5
2002	30.3	-44.9	52.3	1.2	21.3	-14.9	45.4
2003	46.1	-8.0	17.8	-98.3	72.5	0.7	30.8
2004	35.9	62.1	-62.6	-87.1	-22.5	68.0	-6.2
May 03 - Apr 04	48.3	6.8	3.6	-125.0	46.8	44.1	24.6
May 04 - Apr 05	38.0	36.7	-60.2	-100.7	70.9	19.1	3.8
Nov 04	-0.1	0.5	7.4	-15.1	6.4	-2.6	-3.5
Dec 04	0.7	1.1	1.6	14.8	-25.9	7.8	0.1
Jan 05	1.9	-2.6	-2.7	-24.8	28.0	6.2	6.0
Feb 05	8.6	-13.3	-0.7	-31.7	51.4	-13.9	0.4
Mar 05	0.3	-1.7	3.5	42.5	-27.4	-6.2	11.0
Apr 05	3.8	-3.0	-2.2	-27.8	25.2	-4.3	-8.3

[1] Including capital account, errors and omissions and until end-December 2004 unrecorded trade credits.

PORTFOLIO INVESTMENTS OF THE BALANCE OF PAYMENTS
(NET PAYMENTS FROM ABROAD) Table 17

	Danish securities			Foreign securities		Total
	Krone-denominated bonds, etc.	Foreign currency denominated bonds, etc.	Shares	Bonds, etc.	Shares	
	Kr. billion					
2000	-21.3	47.7	19.3	-78.7	-112.8	-145.8
2001	-17.7	97.7	6.6	-86.2	-35.8	-35.3
2002	8.5	24.0	4.9	-34.8	-1.4	1.2
2003	-30.3	66.3	9.1	-121.5	-21.9	-98.3
2004	-6.2	56.9	9.7	-104.4	-43.0	-87.1
Nov 04	-6.2	15.1	0.9	-22.4	-2.4	-15.1
Dec 04	18.2	14.8	-1.0	-4.5	-12.6	14.8
Jan 05	10.8	0.6	-1.9	-26.6	-7.7	-24.8
Feb 05	-4.2	-1.7	0.9	-20.6	-6.2	-31.7
Mar 05	9.7	33.9	3.0	-2.5	-1.5	42.5
Apr 05	-13.2	8.5	2.6	-13.4	-12.2	-27.8

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

DENMARK'S INTERNATIONAL INVESTMENT POSITION — Table 18

End of period	Direct investments		Portfolio investments		Other investment	The foreign-exchange reserve	Total
	Danish abroad	Foreign in Denmark	Shares, etc.	Bonds, etc.			
	Kr. billion						
Assets							
2000	557	29	454	229	667	121	2,056
2001	624	35	403	317	598	152	2,130
2002	585	30	254	359	758	197	2,182
2003	579	32	310	446	747	228	2,342
2004	512	32	358	522	884	219	2,527
Q4 03	579	32	310	446	747	228	2,342
Q1 04	573	32	349	465	781	219	2,419
Q2 04	515	32	352	470	767	229	2,364
Q3 04	511	32	343	508	812	228	2,433
Q4 04	512	32	358	522	884	219	2,527
Liabilities							
2000	26	564	218	646	816	3	2,274
2001	33	602	201	749	766	4	2,355
2002	34	553	146	758	913	4	2,408
2003	42	555	186	770	964	3	2,520
2004	42	495	224	857	1,073	2	2,693
Q4 03	42	555	186	770	964	3	2,520
Q1 04	42	550	202	828	963	1	2,586
Q2 04	42	481	208	851	947	1	2,529
Q3 04	42	478	220	839	1,023	2	2,603
Q4 04	42	495	224	857	1,073	2	2,693
Net assets							
2000	531	-535	236	-418	-150	117	-218
2001	591	-567	203	-432	-168	148	-224
2002	551	-523	107	-400	-155	193	-227
2003	537	-524	124	-323	-217	224	-178
2004	471	-463	134	-336	-189	217	-166
Q4 03	537	-524	124	-323	-217	224	-178
Q1 04	532	-519	146	-363	-182	218	-168
Q2 04	474	-449	144	-381	-180	228	-165
Q3 04	469	-446	123	-331	-211	226	-170
Q4 04	471	-463	134	-336	-189	217	-166

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

GDP BY TYPE OF EXPENDITURE Table 19

	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							
2000	1,279.0	610.5	323.4	258.1	10.9	1,202.8	563.4	487.2
2001	1,323.0	624.5	343.3	268.4	1.3	1,237.4	591.5	506.0
2002	1,350.8	641.9	358.5	272.8	0.7	1,273.9	602.7	525.8
2003	1,390.5	659.3	371.8	274.4	-1.0	1,304.4	594.8	508.7
2004	1,446.5	695.3	385.6	287.5	4.1	1,372.6	629.3	555.4
Q1 04	347.2	167.7	93.6	65.8	2.6	329.6	146.5	128.9
Q2 04	362.9	171.5	96.5	72.3	0.5	340.8	158.9	136.7
Q3 04	358.3	170.3	96.0	70.9	3.4	340.6	159.9	142.1
Q4 04	378.0	185.8	99.5	78.6	-2.3	361.6	164.0	147.7
Q1 05	357.8	176.5	97.2	68.6	-0.4	342.0	156.8	141.1
	Real growth compared with previous year, per cent							
2000	2.8	-0.7	0.9	6.9	...	2.4	13.5	13.5
2001	1.3	-0.2	2.7	3.8	...	0.8	4.4	3.5
2002	0.5	0.6	2.1	2.3	...	1.4	4.8	7.3
2003	0.7	0.9	1.0	1.5	...	0.9	-1.6	-1.4
2004	2.4	4.3	0.7	4.7	...	3.9	4.0	7.4
Q1 04	1.3	3.2	1.2	-0.6	...	1.8	0.6	1.6
Q2 04	2.9	4.1	0.8	8.4	...	3.8	6.5	8.8
Q3 04	2.4	4.2	0.1	6.5	...	5.7	4.0	11.4
Q4 04	2.9	5.6	0.8	4.8	...	4.3	4.7	8.0
Q1 05	0.8	3.9	1.0	0.9	...	1.4	2.7	4.1
	Real growth compared with previous quarter (seasonally adjusted), per cent							
Q1 04	1.2	0.7	0.3	-3.0	...	-0.3	1.3	1.0
Q2 04	0.8	1.0	0.4	4.1	...	1.6	5.2	4.6
Q3 04	0.1	1.0	-0.5	1.8	...	0.8	-2.2	2.7
Q4 04	0.9	2.9	0.7	1.9	...	2.1	0.7	-0.5
Q1 05	0.1	-0.5	0.8	-4.3	...	-1.1	1.7	-1.1

DEVELOPMENT IN CONSUMER PRICES AND NET RETAIL PRICES Table 20

	Consumer-price index		Index of net retail prices	Energy	Imports	Domestic prices				
						Total	Food stuffs	Rent	Public services	IMI
			Weights							
	HICP	CPI	1.000	0.080	0.157	0.764	0.128	0.232	0.034	0.370
	Year-on-year growth, per cent									
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	0.4	3.0	2.0	2.9	4.5	3.2
2003	2.0	2.1	2.3	1.8	0.4	2.6	1.8	2.7	7.9	2.2
2004	0.9	1.2	1.4	5.0	0.8	1.2	-0.6	2.2	4.4	0.6
Q1 02	2.5	2.5	2.7	-0.7	0.1	3.4	3.4	3.1	3.9	3.6
Q2 02	2.1	2.3	2.3	-0.3	0.5	2.8	1.6	3.1	4.5	2.9
Q3 02	2.4	2.3	2.5	-0.2	0.5	3.0	1.4	2.8	4.2	3.6
Q4 02	2.7	2.6	2.6	5.1	0.8	2.7	1.5	2.6	5.1	2.9
Q1 03	2.8	2.8	2.8	10.9	1.3	2.4	1.6	2.7	8.1	1.8
Q2 03	2.2	2.3	2.4	-0.4	0.8	2.9	1.7	2.7	8.6	2.7
Q3 03	1.6	1.8	2.0	-0.8	0.0	2.5	1.8	2.7	8.3	1.9
Q4 03	1.3	1.5	1.9	-2.3	-0.6	2.7	2.2	2.7	6.8	2.3
Q1 04	0.7	0.9	1.2	-5.8	-0.3	2.1	0.2	2.4	4.5	2.2
Q2 04	0.8	1.1	1.4	5.2	0.0	1.4	-0.3	2.2	4.0	1.0
Q3 04	1.0	1.2	1.5	9.3	1.2	0.9	-0.8	2.2	3.9	0.3
Q4 04	1.2	1.4	1.4	12.5	2.6	0.3	-1.6	2.2	5.0	-0.9
Q1 05	1.0	1.2	1.4	9.0	2.8	0.6	-0.3	2.5	4.7	-0.9

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.

SELECTED MONTHLY ECONOMIC INDICATORS — Table 21

	Unemployment	Quantity index		Forced sales of real property	New passenger car registrations	Consumer confidence indicator	Composite cyclical indicator for		
		Manufacturing industry[1]	Retail trade				Manufacturing industry	Building and construction	Service
	Per cent of labour force	2000=100	2000=100	Number		Balance per cent			
2000	5.4	100.0	100.0	2,584	113,634	2	5	-1	2
2001	5.2	101.9	100.6	2,682	96,114	0	-3	-11	5
2002	5.2	102.9	103.6	3,041	111,598	1	-4	-14	5
2003	6.2	102.5	107.8	3,039	96,502	1	-6	-18	-2
2004	6.4	102.1	113.4	2,640	122,543	7	3	-5	13
Seasonally adjusted									
Dec 04	6.1	103.3	120.0	175	11,715	9	1	3	13
Jan 05	6.1	101.4	117.3	169	12,095	9	3	2	10
Feb 05	5.9	99.0	116.8	167	11,336	10	4	2	17
Mar 05	5.9	102.0	117.1	166	11,098	7	2	3	22
Apr 05	5.9	100.8	121.4	178	12,591	6	-9	4	19
May 05	...	...	...	185	10,896	6	-1	7	18

[1] Excluding shipbuilding.

SELECTED QUARTERLY ECONOMIC INDICATORS — Table 22

	Employment		Hourly earnings			Property prices (purchase sum, one-family dwellings)
	Total	Private	All sectors in Denmark, total	Manufacturing industry in Denmark	Manufacturing industry abroad	As a percentage of property value 1995
	1,000 persons		1996=100			
2000	2,784	1,941	118.7	118.4	113.9	153.1
2001	2,792	1,945	123.7	123.5	117.3	162.0
2002	2,782	1,926	128.5	128.5	120.7	168.0
2003	2,757	1,901	133.3	133.8	124.3	173.2
2004	2,759	1,901	137.4	138.0	127.6	188.3
			Seasonally adjusted			
Q1 04	2,748	1,888	136.0	136.5	126.4	179.7
Q2 04	2,765	1,903	136.4	137.4	127.4	186.9
Q3 04	2,766	1,912	138.2	138.5	127.8	191.7
Q4 04	2,754	1,901	139.0	139.2	128.8	194.8
Q1 05	2,769	1,909	140.2	140.4	130.4	...
			Change compared with previous year, per cent			
2000	0.3	0.7	3.6	3.5	3.5	6.5
2001	0.3	0.2	4.2	4.3	3.0	5.8
2002	-0.4	-1.0	3.9	4.0	2.9	3.7
2003	-0.9	-1.3	3.7	4.2	3.0	3.1
2004	0.1	0.0	3.1	3.1	2.7	8.7
Q1 04	-0.7	-1.3	3.3	3.5	2.7	6.0
Q2 04	0.4	0.2	3.1	3.4	2.9	8.0
Q3 04	0.6	0.9	2.9	3.1	2.5	9.5
Q4 04	0.0	0.3	2.9	2.6	2.6	11.3
Q1 05	0.8	1.1	3.1	2.9	3.2	...

EXCHANGE RATES — Table 23

	EUR	GBP	SEK	NOK	USD	JPY	CHF
	Kroner per 100 units						
	Average						
2000	745.37	1,223.33	88.26	91.89	809.03	7.5081	478.68
2001	745.21	1,197.74	80.58	92.60	831.88	6.8522	493.47
2002	743.04	1,182.10	81.12	99.03	788.12	6.2969	506.47
2003	743.07	1,074.99	81.45	93.03	658.99	5.6840	488.88
2004	743.98	1,096.69	81.54	88.90	598.93	5.5366	481.96
Dec 04	743.32	1,070.97	82.80	90.46	555.13	5.3456	484.06
Jan 05	744.05	1,065.01	82.24	90.60	567.20	5.4866	481.00
Feb 05	744.27	1,079.16	81.92	89.46	571.96	5.4512	480.15
Mar 05	744.64	1,075.75	81.94	90.95	563.71	5.3623	480.68
Apr 05	744.99	1,090.89	81.27	91.11	576.15	5.3666	481.37
May 05	744.44	1,088.37	80.98	92.16	586.97	5.4995	481.89

EFFECTIVE KRONE RATE — Table 24

Average	Nominal effective krone rate	Consumer-price indices: Denmark	Consumer-price indices: Abroad	Real effective krone rate based on consumer prices	Real effective krone rate based on hourly earnings	Consumer-price index in the euro area
	1980=100					1996=100
2000	95.6	219.3	210.8	99.4	98.7	106.0
2001	96.9	224.4	215.8	100.8	101.2	108.5
2002	97.7	229.9	219.5	102.4	103.3	110.9
2003	101.2	234.7	223.3	106.4	108.2	113.2
2004	102.2	237.4	227.1	106.8	109.7	115.7
Dec 04	103.2	237.7	228.8	106.9	110.1	116.9
Jan 05	102.8	237.0	228.4	106.4	...	116.2
Feb 05	102.5	239.4	229.1	106.9	...	116.6
Mar 05	102.7	240.7	230.1	107.2	109.5	117.4
Apr 05	102.4	242.1	230.8	107.2	...	117.9
May 05	102.0	241.8	...	...	...	...
	Change compared with previous year, per cent					
2000	-4.1	2.9	2.2	-3.4	-4.0	2.1
2001	1.3	2.4	2.3	1.3	2.6	2.3
2002	0.9	2.4	1.7	1.6	2.0	2.2
2003	3.6	2.1	1.7	3.9	4.8	2.1
2004	1.0	1.2	1.7	0.4	1.4	2.1
Dec 04	1.0	1.2	2.0	0.0	0.8	2.4
Jan 05	0.2	1.0	1.7	-0.8	...	1.9
Feb 05	-0.1	1.3	1.8	-0.8	...	2.1
Mar 05	0.6	1.4	1.9	-0.1	-0.3	2.1
Apr 05	0.9	1.8	1.9	0.7	...	2.1
May 05	0.3	1.5	...	...	...	...

Note: The nominal effective krone rate index is a geometric weighting of the development in the Danish krone rate against currencies of Denmark's 27 most important trading partners. However, only 25 countries are included in the calculation of consumer prices abroad and the real effective krone rate based on consumer prices and hourly earnings, respectively.
The weights are based on trade in manufactured goods in 2002.
An increase in the index reflects a nominal or a real appreciation of the krone.

Danmarks Nationalbank's Statistical Publications

Periodical publications (electronic publications)
Upon compilation of financial statistics, Danmarks Nationalbank releases these to the public in electronic publications. The publication of new statistics on a specific topic comprises 3 elements:

- **E-mail** with a brief summary, including selected key figures and links to the below-mentioned publications on the Nationalbank's website.
- **"Nyt" (News)** with text and charts to illustrate key development trends, as well as a 1-2 page tables section. The contents of the "Nyt" publications will also include in-depth commentary in order to give users greater scope to interpret and apply the statistics.
- **Tabeltillæg (Tables Supplement)** containing tables with detailed specifications and descriptions of the sources and methodologies applied in the compilation of the statistics.

The text of all tables and charts as well as the descriptions of the sources and methodologies are translated into English.

Statistics database
A statistics database supplements the above statistical publications, and comprises all time series included in the financial statistics. When a topic is published the corresponding time series are updated, and they include data as far back in time as possible.

Special Reports
In Special Reports are published statistics of a thematic character that are not prepared on a regular basis.

Release calendar
A release calendar for the statistical publications, covering the current month and the following quarter, is shown on the website.