



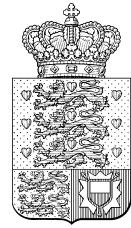
Danmarks
Nationalbank

Monetary Review
1st Quarter

2000

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Recent Monetary Trends

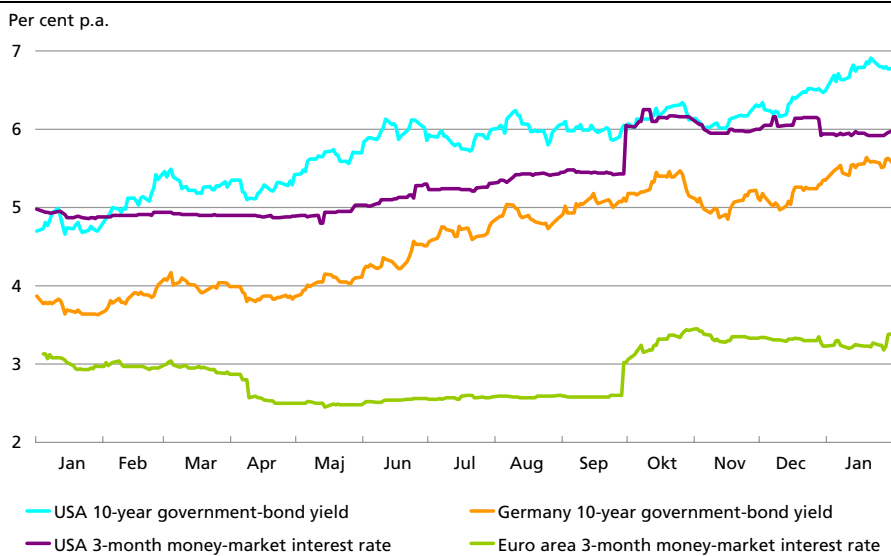
This review covers the period from November 1999 to the middle of February 2000

INTERNATIONAL ECONOMIC BACKGROUND

The general position of the US economy has not changed in any significant respect in recent months. In the 4th quarter the annualised rate of growth in the US economy was 5.8 per cent higher than in the preceding quarter. Despite a higher level of interest rates, cf. Chart 1, there are no signs of any slowdown in private consumption. The households' savings ratio decreased significantly during the boom, since consumption rose faster than disposable incomes. Together with a higher volume of investments this resulted in an increase in the current-account deficit to just under 4 per cent of GDP in 1999. A significant source of financing was non-residents' purchases of US stocks, leading to a more global distribution of the associated potential gains and risks.

LONG-TERM YIELDS AND SHORT-TERM INTEREST RATES IN THE USA AND THE EURO AREA

Chart 1



During the last year inflation has risen by 1 per cent to a year-on-year rate of 2.7 per cent in December. This is related primarily to rising energy prices. Underlying inflation is still surprisingly low, in view of the cyclical position. The rate of wage increases is rising, but at 3.5 per cent in January was still moderate considering the low level of unemployment.

On 16 November and 3 February the Federal Reserve raised its leading interest rate, the fed funds target rate, by 0.25 per cent in each case to 5.75 per cent. The interest rate has thus been raised by 1.0 per cent over the last year, which has more than redressed the interest-rate reductions at the end of 1998. From the summer to the beginning of November long-term US bond yields were approximately 6 per cent, but have since risen to around 6.6 per cent in the middle of February.

After the dollar's strengthening during the 1st half of 1999 no trend was shown by the dollar/euro exchange rate during the following 6 months, when the exchange rate fluctuated at a level slightly above par. The dollar strengthened at the end of January, pushing the euro below par, which attracted considerable attention. After strengthening during the 2nd half of 1999 the Japanese yen weakened against the US dollar at the beginning of 2000.

The surprising feature of the US economy throughout the 1990s has been the high growth rate without any actual inflationary pressure. In recent years this can be attributed to such factors as a considerable increase in productivity, which again has been attributed to huge investments in IT technology. However, a characteristic feature of the 1990s taken as one is that the development in productivity in the USA was no stronger than in the EU and Denmark. Table 1 shows a breakdown of growth on the three explanatory factors: population growth, participation rate and development in productivity, cf. the Box. It appears that a considerable proportion of the growth in the USA can be attributed to a relatively strong increase in the active age classes of the population throughout the 1990s. At the same time, there was a significant increase in the proportion of the population in employment. This corresponds to

BREAKDOWN OF GROWTH FOR USA, EU AND DENMARK, 1990-99			Table 1
Rate of growth, per cent p.a.	USA	EU	Denmark
Population aged 15-64 years	0.9	0.3	0.3
Participation rate.....	0.4	-0.1	0.1
Productivity	1.8	1.7	2.1
1990-95	1.4	2.0	3.1
1995-99	2.3	1.3	0.9
Growth, total	3.1	1.9	2.5

Note: Annual rate of growth from first year to final year.

BREAKDOWN OF ECONOMIC GROWTH

Box

The breakdown of economic growth into the three factors of population growth, change in participation rate and productivity is based on the following defining relation:

$GDP = \text{population} * \text{participation rate} * \text{productivity}$ where

GDP = gross domestic product in constant prices

Population = number of citizens aged 15-64 years

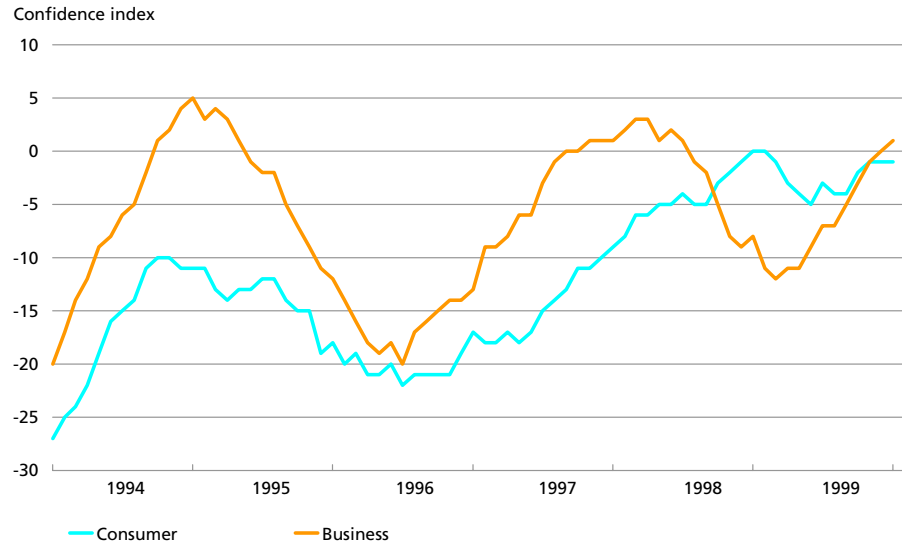
Participation rate = number of employed/population

Productivity = GDP/number of employed

the drop in the unemployment rate. On the other hand, in the first part of the decade the development in productivity was low. This perhaps explains how productivity could be increased significantly in recent years, even though normally productivity tends to decline towards the end of a boom. In Denmark productivity increased at the beginning of the upswing, i.e. from 1993 to 1995, while in the last 5 years the rate of increase has been low. EU productivity exceeded the US level in the first half of the 1990s, but with less job creation, so that growth was virtually without any creation of new jobs.

During the last six months the cyclical outlook for the euro area has improved. The national accounts for the 3rd quarter showed an annualised growth rate of more than 4 per cent compared to the 2nd quarter. The improvement was broad-based since it was supported by both domestic demand and external trade. The growth pattern varies considerably within the euro area, but it is characteristic that the upswing was sluggish in the largest member state, Germany, while several of the smaller euro area member states saw stronger growth. This brought a considerable decline in unemployment in the euro area to 9.6 per cent in December. The consumer and business surveys for the 4th quarter indicate greater optimism, cf. Chart 2.

Despite a higher rate of increase attributable to energy prices inflation in the euro area is moderate, with growth in HICP for the 11 member states of 1.7 per cent in December. Excluding energy and foodstuffs the increase was as low as approximately 1 per cent, which was its level for the past year. The course taken by energy prices implies stronger growth in the first months of this year. In several euro area member states, including Ireland and Spain, inflation is already clearly above the upper limit of 2 per cent p.a. in the ECB's definition of price stability.



No euro area member state exceeds the general government budget deficit criterion of 3 per cent of GDP. Most member states' deficits are in the range of 1-2 per cent of GDP. Ireland and Finland have significant budget surpluses, due to their strong cyclical positions.

On 3 February the European Central Bank (ECB) raised its interest rates by 0.25 per cent. The rate of interest for main refinancing operations thus reached 3.25 per cent. The background to the decision was an assessment of the inflation risk in the medium term. Prior to the interest-rate increase the rate of growth in the money stock and in credit expansion had indicated continued ample liquidity. At the same time growth in prices and costs was stronger and more sustained than anticipated. The weakening of the effective euro rate contributed to the rising inflation, not only in terms of upward pressure on commodity prices in national currencies, but also with regard to import prices in general, with the risk of a consequential impact on wage and price formation accentuated by the improved cyclical prospects.

On 5 January the ECB carried out an extraordinary liquidity-absorbing market operation with settlement on 12 January, the date of the first main refinancing operation after the turn of the year. The purpose of the extraordinary market operation was to absorb a proportion of the extra liquidity which had been supplied around the turn of the year, cf. the section on the turn of the year 1999/2000. The extraordinary liquidity expansion at the beginning of the year was also attributable to a

number of other factors. Liquidity totalling euro 14 billion was absorbed within the stipulated maximum interest rate of 3 per cent. It was the first market operation of this kind in the lifetime of the euro.

Since mid-November Germany's 10-year government bond yield has been increasing in line with the US bond yield, and reached 5.6 per cent in mid-February. The slope of the German yield curve is steeper than the US curve, cf. Chart 1. The market interest rates thus reflect expectations of rising short-term euro interest rates.

Growth in the first quarters of 1999 indicated that Japan was finally on its way out of the recession, but negative growth in the 3rd quarter showed that this progress is still faltering. Domestic demand, including private consumption, was particularly disappointing. Exports, on the other hand, took a more favourable course, even though the Japanese yen has appreciated by more than 10 per cent against the euro and the dollar over the past year, leading to a decrease in competitiveness. Short-term and long-term interest rates are very low, which rules out stimulating the economy further by further reduction of interest rates. Fiscal policy has so far also proved unable to give the economy a decisive boost, despite repeated packages of measures to stimulate the economy which together with the weak cyclical position led to a budget deficit of more than 7 per cent of GDP in 1999.

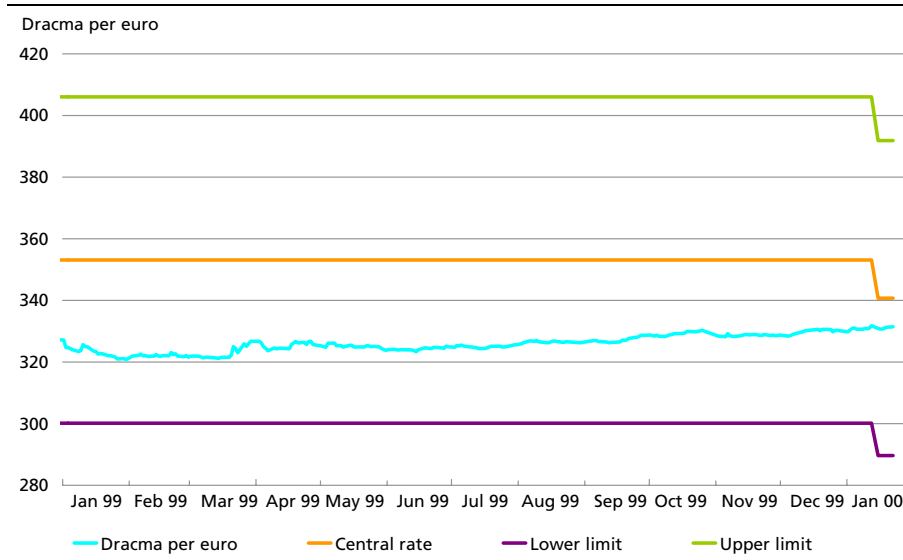
After slowing down to a degree at the beginning of 1999 most UK indicators point to renewed growth. In contrast to the preceding quarters growth in the 3rd and 4th quarters was also driven by net exports, whereas previously the economy had been buoyed up solely by domestic demand.

The pound sterling has strengthened by approximately 5 per cent against the euro over the last half-year. As an element of its very active monetary policy the Bank of England raised the interest rate on several occasions during the last 6 months. These interest-rate increases must be viewed against the background of high capacity utilisation in the British economy in a period of accelerating activity. The UK's monetary policy is managed according to an inflation target set by the government at 2.5 per cent in the RPIX index, i.e. the consumer-price index excluding housing. Inflation is currently slightly below this target, and the Bank of England does not expect it to rise until well into 2000.

The Swedish economy is undergoing an upswing borne up by private consumption and exports. Inflation has risen, but is still low. Underlying inflation, which is of significance to Sveriges Riksbank's planning of monetary policy, is around 1.5 per cent, but is expected to rise. Against this background, with effect from 9 February Sveriges Riksbank raised the repo rate by 0.5 per cent to 3.75 per cent. The Swedish krona ap-

GREEK DRACHMA VIS-À-VIS EURO AND FLUCTUATION BAND IN ERM II

Chart 3



preciated against the euro throughout 1999 and into 2000, to a level equivalent to kr. 0.87-0.88 per krona in mid-February 2000.

Norway experienced a short period of low growth, and Norges Bank lowered its leading interest rate significantly throughout 1999. However, the downturn in the economy can soon be reversed by the upswing in oil prices.

With effect from 17 January the Greek drachma was revalued by 3.5 per cent against the euro. The new central rate is GRD 340.75 per euro, while the fluctuation band is unchanged at +/- 15 per cent around the central rate. The market rate was not affected by the revaluation, cf. Chart 3. The revaluation has no impact on the ERM II agreement for Denmark.

For a prolonged period the Greek drachma has been stronger than its central rate within ERM II in order to support the downward convergence of the rate of inflation in Greece towards the EU average. Up to the revaluation in January 2000 the drachma was almost 7 per cent above its central rate. The adoption of the euro at the previous central rate would thus impose a significant inflation risk on the Greek economy at a time of already high growth.

The prospects for the Greek economy have improved significantly in recent years with convergence in almost all areas towards the rest of the EU. Greece has announced its intention to apply in March for EMU membership with effect from 1 January 2001. An important barrier was

removed in November when the ECOFIN Council decided to lift its previous decision that an excessive budget deficit existed in Greece. In 1999 the budget deficit was less than 2 per cent of GDP, and is expected to decline further in the coming years.

Convergence has also been achieved in respect of inflation and interest rates, so that Greece can be realistically expected to meet these criteria in the convergence assessment in the spring of 2000.

DEVELOPMENT IN INTEREST AND EXCHANGE RATES IN DENMARK

Against the background of the ECB's raising of interest rates Danmarks Nationalbank with effect from 4 February raised the discount rate and the current-account rate by 0.25 per cent to 3.25 per cent. The lending rate and the rate of interest for certificates of deposit were raised by 0.30 per cent to 3.60 per cent. This was the first adjustment of interest rates since they were raised at the beginning of November.

The 3-month money-market interest rate rose by just over 0.5 per cent during the month up to the raising of interest rates in November, and fluctuated at around 3.7 per cent until the beginning of February, after which it rose with the official interest rates. The differential vis-à-vis the euro interest rate narrowed slightly to 35 basis points in mid-February.

The Danish 10-year government-bond yield has followed the trend on the international markets and increased in recent months to around 5.9 per cent in mid-February. The yield differential to Germany narrowed slightly to 35 basis points in mid-February, which is close to its historical low.

The average spread between government-bond and mortgage-credit bond yields has been stable during the last 6 months. The slope of the yield curve continues to be rather steep. This has resulted in higher demand for adjustable-rate mortgage loans which are subject to full or partial adjustment of the interest rate for every year of the maturity of the loan. These loans are an alternative to the usual long-term fixed-rate mortgage-credit loans. Adjustable-rate mortgage loans now constitute a considerable proportion of new lending. However, adjustable-rate loans are still only approximately 6 per cent of total outstanding loans.

The krone is still slightly stronger than its central rate in ERM II. Towards the end of 1999 and in the first part of January there was an underlying tendency for the krone to weaken. As a countermeasure, in January the Nationalbank intervened for just over kr. 12 billion in order to dampen the fluctuations in the krone/euro exchange rate, which has been stable at around kr. 7.44 per euro. The currencies of a number of Denmark's largest trading partners have strengthened against the krone

and in mid-February the effective krone rate was at its lowest level since 1993.

TURN OF THE YEAR 1999/2000

The transition to 2000 was smooth and the much-feared computer-related problems did not occur in either Denmark or abroad. Concern about Y2K problems had given rise to extra high risk premiums on money-market transactions expiring immediately after the turn of the year. Up to the turn of the year both the ECB and the Federal Reserve supplied liquidity to the market as an extraordinary measure. Denmark's Nationalbank had given extraordinary access to both purchase and sale of certificates of deposit in order to prevent liquidity problems and excessive interest-rate fluctuations. Furthermore, the participants in the Danish money market had agreed beforehand to set the value date for transactions concluded just after New Year at 10 January. Since all systems operated satisfactorily, however, on 4 January it was already possible to revert to the usual practice of setting the value date as the following trading day.

The uncertainty up to the turn of the year was also apparent in the bond market. Non-residents' interest in Danish bonds was considerable from the end of 1998 up to the last months of 1999. Then the pattern reversed, however, to considerable resales in connection with large drawings of central-government securities. This is normal for the end of the year, but the year 2000 problem may have reduced the reinvestment volume. Stocks were not affected to the same degree, just as resident investors were less cautious and displayed a great interest in foreign securities up to and after the turn of the year.

DOMESTIC ACTIVITY AND THE BALANCE OF PAYMENTS

The growth in the Danish economy shifted to a lower gear in 1999. The underlying factor is reduced domestic demand, while growth on export markets improved. The dampening reduced the pressure on capacity, and the Danish economy is therefore apparently preparing for a soft landing after a number of years of strong growth and a significant increase in real wages. As there is a surplus on both general-government finances and the balance of payments the picture of a well-balanced economy is spoiled first and foremost by the rate of inflation.

The preliminary national accounts for the 3rd quarter of 1999 showed growth in the gross domestic product (GDP) of 0.8 per cent against the previous quarter, and a year-on-year growth rate of 1.0 per cent. The

growth in relation to the 2nd quarter was driven by domestic demand, including private consumption, which fell in the two preceding quarters. Despite the downward pressure from the Whitsun package of economic measures and rising long-term interest rates the growth in private consumption has by no means come to a halt. Government consumption also rose in the 3rd quarter.

The increase in employment has stopped. After a surprisingly strong increase in seasonally-adjusted ATP-registered (Labour Market Supplementary Pension Scheme) employment in the 3rd quarter, the statistics showed an even stronger decline in the 4th quarter of 1999. Since unemployment continued to fall up to the end of the year, the decline in employment in the 4th quarter may be due to a statistical aberration.

After years of continued increase almost without interruption, house prices fell by just over 3 per cent in the 4th quarter of 1999 against the 3rd quarter, according to the statistics for the average price per square metre compiled by the Association of Danish Mortgage Banks. Turnover also declined significantly in the 4th quarter. The dampening of house prices was expected in view of the reduction of the tax deductibility of interest payments under the Whitsun package of economic measures and the rising long-term interest rates. It must be noted that particularly in the 3rd quarter a relatively large number of houses were traded in the Greater Copenhagen area, where prices per square metre are higher than in the rest of Denmark. The underlying price trend was therefore weaker than the figures indicate. Taking this into account, according to the statistics of the Association of Danish Mortgage Banks the prices already subsided in the 3rd quarter. The official house price statistics from Statistics Denmark avoid such composite effects by measuring house prices relative to their public property valuation. As yet these statistics are only available for up to the 3rd quarter, when prices were almost 6 per cent higher than one year before. If a house purchase is financed with an adjustable-rate loan the instalment for the first year is reduced by up to one fourth in the present interest-rate conditions, compared to the usual financing with long-term fixed-rate loans. This may have contributed to sustaining the level of house prices.

Towards the end of 1999 domestic lending by the banks, especially lending to households, weakened against the preceding period. Growth in lending by mortgage-credit institutes also dampened.

Retail sales were stable from January to October, but rose in the last months of year, while the consumer-confidence indicator was slightly negative around the turn of the year, and car sales declined towards the end of the year and in the beginning of January, although tax-related factors pushed up sales in December. The higher influx of orders to the

manufacturing industry can be attributed primarily to export markets, and to a lesser degree to the domestic market, considering the 4th quarter as one. The number of square metres of work in progress indicates receding building and construction investments, although this pattern was modified somewhat by the violent storm at the beginning of December and the subsequent repair of the storm damage.

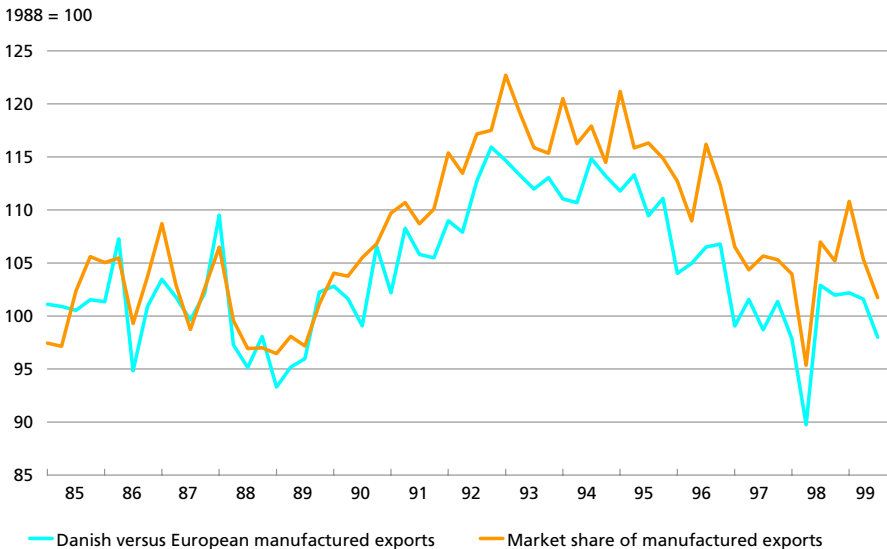
Against the background of the Finance Act for 2000 fiscal policy appears to be slightly more expansionary than originally planned. However, together with the effects of the Whitsun package the outlook is still that fiscal policy for 2000 will have a slightly dampening effect on the economy, provided that the agreements concluded with regional and local governments are observed.

Preliminary current-account statistics showed a surplus of just over kr. 11 billion for the period from January to November 1999, compared to a deficit of kr. 9.8 billion in the same period of 1998. The development is attributable mainly to improvement of the trade balance, but also to a more favourable balance of services and net interest and dividend to abroad.

Imports have stagnated in step with the dampening of domestic demand. This applies both to imports for consumption and imports for the business sector.

DEVELOPMENT IN MARKET SHARES AND RELATIVE EXPORTS

Chart 4



Note: The strong drop in the 2nd quarter of 1998 is attributable to the large-scale industrial conflict on the labour market.

During the entire upswing from 1993 to 1998 Denmark lost shares on export markets¹. It should be taken into account that the initial level was high, due to the expansion in the wake of German reunification at the beginning of the 1990s. Most recently the loss of market shares has ceased. In particular, the performance of manufactured exports was better in 1999 than in the previous year, cf. Chart 4, and the influx of orders indicates that the favourable course can be sustained in the coming months. The domestic market's dampening and the initial upswing in the euro area enhance business enterprises' interest in the export markets. There is little prospect of any significant expansion of market shares in view of the relatively strong development in Danish wages in recent years.

COMPARISON OF EXTERNAL TRADE AND PAYMENTS STATISTICS

Throughout most of 1999 there was good accordance between the current account of the balance of payments and the balance of external payments in the payments statistics², cf. Chart 5.

This accordance in 1999 is in marked contrast to the considerable divergence between the two statistical compilations in 1998. Since the divergence also contributed to uncertainty of whether there was an external surplus or deficit in 1998, at the request of the Ministry of Economic Affairs, in the summer of 1999 Statistics Denmark and the Nationalbank embarked on a comparative survey designed to reveal the reasons for the divergence between the compilations with regard to trade in goods. This had become possible after the Nationalbank in October 1998 introduced a new reporting system³ for the compilation of external payments.

The survey is not yet completed. The work so far solely comprises a comparison of reported flows of goods and payments for the external trade statistics and the payments statistics from a small selection of companies for the period March-May 1999. In view of the so far limited scope of the survey and the fact that analysis of the data reported for the two statistical compilations from the relevant business enterprises has not yet been completed, it is still too early to state definitively whether the differences between the two compilations are due to actual reporting errors or diverging compilation principles where e.g. differing accrual principles play a key role.

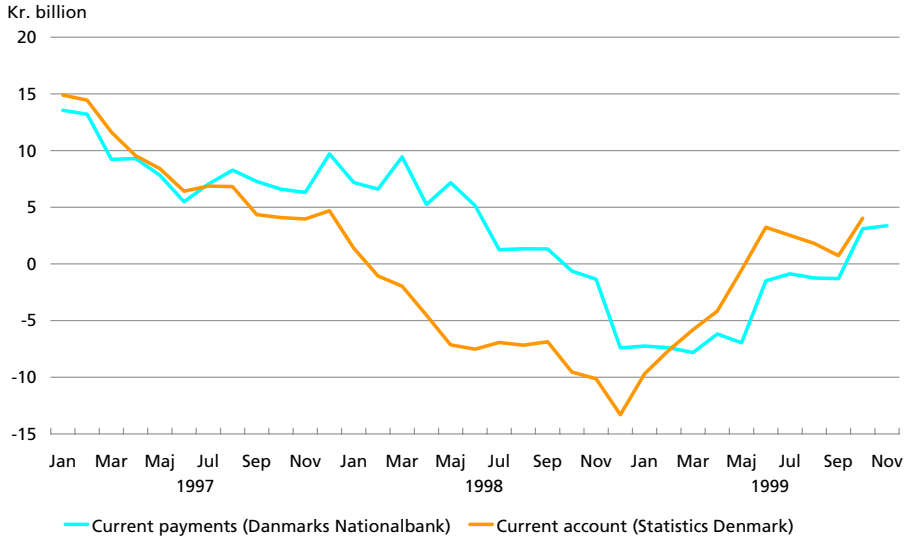
¹ See Heino Bohn Nielsen, Market Shares of Manufactured Exports and Competitiveness, Danmarks Nationalbank, *Monetary Review*, 2nd Quarter 1999.

² The current account of the balance of payments is e.g. based on the trade statistics and is compiled and published by Statistics Denmark, while the current payments in the payments statistics are collected and published by the Nationalbank.

³ The reporting system is described in Lasse Tryde, The Nationalbank's New Reporting System for Payments Statistics, Danmarks Nationalbank, *Monetary Review*, 2nd Quarter 1999.

CURRENT EXTERNAL PAYMENTS AND CURRENT ACCOUNT OF THE BALANCE OF PAYMENTS

Chart 5



Note: Accumulated over 12 months.

The preliminary results¹ in particular show a certain tendency for over-reporting of both export and import payments in the Nationalbank's payments statistics – after the introduction of the new reporting system – which can be attributed primarily to reporting errors concerning payments for goods which do not cross Denmark's borders. Since in principle the over-reporting will have an equivalent impact on the export and import sides, it will not ultimately affect the balance of current external payments in the payments statistics.

During the spring of 2000 the survey will be expanded to involve additional business enterprises, and will be extended to include other comparison periods.

Notwithstanding the final result of the survey it is important to emphasise that current payments in the Nationalbank's payments statistics will still diverge from Statistics Denmark's compilation of the current account in terms of compilation method as well as accrual principle. The two compilations will therefore still show diverging balances in the future.

The reason for the extraordinary large discrepancy in 1998 is not likely to be found. The survey is nevertheless a good starting point for im-

¹ A preliminary report, Report on the project concerning improvement of external trade and balance-of-payments statistics (in Danish), was submitted to the Minister for Economic Affairs on 14 December 1999. The report is available on Statistics Denmark's Web site (www.dst.dk) under Guide to Statistics External Trade, Information and Report on the project concerning improvement of external trade and balance-of-payments statistics in the order mentioned above.

proving the reporting systems and thereby the quality of the statistics, should system-related errors emerge during the work. The aforementioned over-reporting of goods payments in the payments statistics must be regarded as initial difficulties in connection with the new reporting system. The Nationalbank will seek to solve the problem by providing guidelines to the reporting business enterprises and on an ongoing basis will combat any other system-related errors which may arise in step with the evolution of new payment patterns.

DEVELOPMENT IN PRICES AND WAGES

The annual rate of increase in consumer prices rose throughout 1999 to 3.2 per cent in December. For 1999 overall it was 2.5 per cent. The rate of price increases is buoyed up by such factors as the increase in energy prices. In the course of 1999 oil prices rose from 10 to more than 25 dollars per barrel. Many other commodity prices also increased. Higher prices for public services also contribute to sustaining inflation, as do "Other factors", which reflect the development in wages and profit margins, cf. Table 2. However, it should be noted that "Other factors" and thereby underlying inflation have not undergone the same upswing as overall inflation in 1999. This accords well with the dampening of the wage-increase rate, cf. below.

The rate of price increases in the euro area, which like Denmark is affected by rising energy prices, was 1.7 per cent in December. One reason for stronger growth in the Danish price level than in the euro area during 1999 is the greater volatility of Danish food prices, cf. Chart 6. A contributing factor is the strong fluctuations in pork prices in recent years, in connection with first the crisis on the Asian markets in summer 1997, and then the crisis in Russia in autumn 1998. Both areas are important markets for Denmark's pork exports. The greater volatility of Danish food prices is moreover to a degree attributable to stronger seasonal fluctuations than in other countries, but the year-on-year rate of increase is also more volatile. The accelerated rate of increase for foodstuffs in the last part of 1999 is related to a low initial level in the autumn of 1998. A dampening must thus be expected in the near future.

Another atypical trend of price development in Denmark is in the telecommunications sector, where in the last 12 months prices in Denmark have decreased by considerably less than prices in the euro area.

Growth in the Harmonised Index of Consumer Prices (HICP) also accelerated during 1999 to 3.1 per cent in December, compared to 1.2 per cent at the beginning of the year. In December Denmark only just complied with

DEVELOPMENT IN CONSUMER PRICES AND NET RETAIL PRICES

Table 2

	Consumer-price index		Index of net retail prices	Energy	Imports	Domestic prices				
						Total	Food-stuffs	Rent	Public services	Other factors
	HICP	CPI	Weights							
			1.000	0.085	0.142	0.773	0.160	0.233	0.046	0.334
Year-on-year growth, per cent										
1992 .....	...	2.1	2.1	-3.8	2.5	2.5	1.8	2.0	2.9	3.2
1993 .....	...	1.3	1.4	-0.9	0.0	1.9	-0.2	2.1	1.7	2.7
1994 .....	...	2.0	1.6	-3.1	2.1	2.0	3.0	1.6	2.4	1.6
1995	2,0	2.1	1.9	-2.5	2.5	2.2	3.1	1.8	2.5	2.0
1996	2.1	2.1	2.0	6.6	0.1	1.9	1.7	1.6	1.1	2.4
1997	1.9	2.2	2.2	2.7	0.9	2.4	3.6	2.8	2.2	1.8
1998	1.3	1.9	1.5	-2.8	0.6	1.9	1.8	2.1	-0.9	2.3
1999	2.1	2.5	2.1	2.1	-0.3	2.5	0.6	2.7	3.5	3.0
1998 1st qtr. ...	1.6	2.0	1.8	-1.7	1.4	2.1	4.1	2.5	-0.4	1.6
1998 2nd qtr. .	1.4	2.0	1.7	-0.7	0.9	2.0	2.5	2.1	-1.5	2.3
1998 3rd. qtr. .	1.2	1.7	1.2	-4.0	0.4	1.7	0.6	1.9	-1.9	2.6
1998 4th qtr. ..	1.1	1.7	1.2	-4.7	-0.1	1.9	0.1	2.0	0.4	2.8
1999 1st qtr. ...	1.4	2.0	1.5	-7.0	-0.7	2.4	0.3	2.8	2.1	3.1
1999 2nd qtr. .	1.8	2.3	1.8	-1.4	-0.8	2.4	-0.2	2.5	4.5	3.1
1999 3rd qtr. ..	2.3	2.6	2.3	5.7	-0.2	2.5	0.7	2.8	3.8	2.8
1999 4th qtr. ..	2.8	3.0	2.8	11.5	0.4	2.6	1.7	2.7	3.6	2.7

Note: Weighting basis as of September 1996.

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

"Other factors" is a measure of domestic market-determined inflation. "Other factors" normally increases faster than the index of net retail prices due to an overweight of services for which the price development is typically stronger than for other commodities. At the same time, the demand for services viewed in a more long-term perspective will typically increase faster than the demand for other products.

HICP is the Harmonised Index of Consumer Prices.

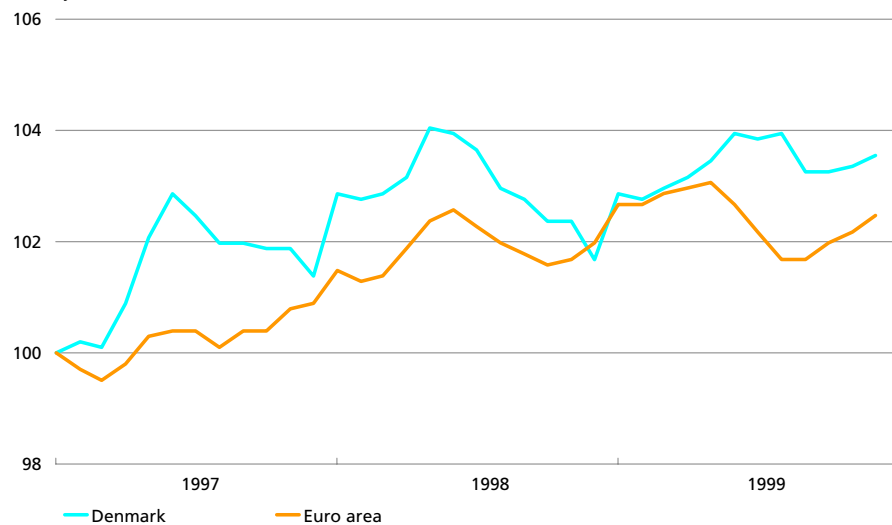
the inflation criterion of the Maastricht Treaty, and for the first time since the commencement of the calculation of the individual EU member states' compliance with the convergence criterion, a period of non-compliance must be expected. Due to the special circumstances in the foodstuffs area and a reduction of growth in wages, Denmark is expected to comply with the criterion once again during 2000.

So far, the increase in HICP has typically been slightly below the ordinary consumer price index (CPI) due to methodological differences. This will be adjusted in certain respects in 2000 when the method to calculate the price development at the most detailed level in CPI is harmonised with the theoretically better method for compilation of HICP. Furthermore, after the restructuring certain CPI sub-indices will no longer be subject to seasonal adjustment. The weighting basis in CPI and HICP are still different, however.

FOOD PRICE INDEX, HICP

Chart 6

January 1997 = 100

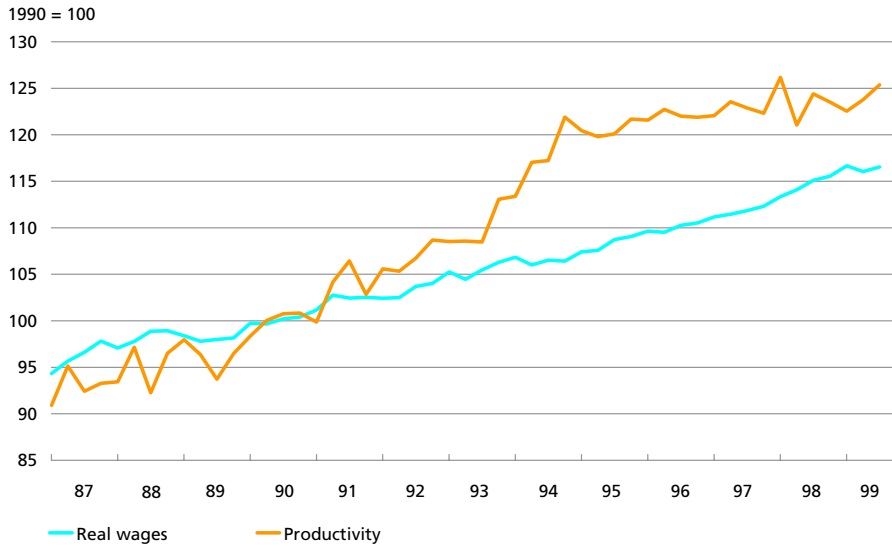


Wage development dampened to a degree during 1999. In the 4th quarter the annual rate of increase shown by the wage statistics for members of the Danish Employers' Confederation was 4.2 per cent, against 5.0 per cent in the 1st quarter. The rate of wage increases, which was lowest in the manufacturing sector where competition is toughest, may seem moderate in view of the low unemployment rate, but is nevertheless higher than the wage-increase rate in the euro area, and slightly higher than is compatible with price stability.

The collective bargaining process in the private sector has been completed and the result submitted to a ballot of the members. An innovation is that the agreements run for a four-year period instead of the usual two. For the minimum-wage areas, including manufacturing industry, the agreements observe a cost framework of 1 per cent p.a. In the minimum-wage areas centralised negotiations concern only the overall framework such as working hours, holiday entitlement, minimum wage, pension schemes, etc., while the actual wage increases are negotiated locally at the individual business enterprises. The total increase in costs for the minimum-wage areas thus cannot be determined until local negotiations are completed. The minimum wage has been raised by approximately 2.5 per cent p.a. for the first three years, after which it will be renegotiated for the 4th year without the right to strike. The number of people employed at the minimum wage is small, but the trend for this wage is often taken as an indicator of the level of general wage increases.

DEVELOPMENT IN REAL WAGES AND PRODUCTIVITY

Chart 7



Note: Real wages are calculated as hourly wages in manufacturing industry using the consumer price index as the deflator. Productivity is hourly productivity in the non-agricultural private sector, excluding energy.

In the so-called normal wage areas such as transport, wage rates are negotiated on a centralised basis. The collective agreements in normal-wage areas are within a cost framework of approximately 3 per cent p.a.

All of the agreements concluded entail higher pension contributions and the introduction of five additional days of holiday entitlement, a sixth week of holiday. This aggravates the dilemma in the economy between more leisure time and a high level of public service¹.

Real wages have increased year by year during the 1990s, cf. Chart 7. Initially, the increase was slightly below the rate of increase in productivity, but in recent years wage increases have exceeded productivity increases, giving rise to inflationary pressure. This is reflected in e.g. "Other factors" in Table 2.

In the long view real wages will follow productivity at a given distribution of output between profit and wage income, after adjustment for the development in indirect taxes and indirect labour costs. The rate of productivity increases will naturally decline towards the end of a boom, and wage development must be adjusted accordingly.

In the general-government sector, for which no collective agreements were negotiated in 1999, the rate of wage increases did not slow down in 1999, in contrast to the development in the private sector. This is most

¹ Cf. Erik Haller Pedersen, Demography and Growth in Denmark, in this *Monetary Review*, p. 47ff.

pronounced in the central-government sector, where the rate of increase in the 3rd quarter was close to 5 per cent. The background includes the introduction of new, more flexible payroll systems in parts of the general-government sector. The adjustment clause in the collective wage agreements for the general-government sector is retrospective, so that salaries in the general-government sector are adjusted to earlier increases on the private labour market, but high wage increases in the public sector can have an unfortunate spin-off effect on the private sector.

Introduction of the 1997 Banknote Series

Ulrik H. Bie, Secretariat

DEVELOPMENT IN TOTAL CIRCULATION OF BANKNOTES

At the end of January 2000, circulating banknotes totalled kr. 37.4 billion, of which the 1,000-krone note accounted for more than half, i.e. kr. 20.8 billion. The 500-krone note accounted for 21 per cent, while the 100-krone note accounted for 15 per cent. The shares of the 200-krone and 50-krone notes were 6 and 2 per cent respectively. Total circulating banknotes are thus most affected by the trend for the largest notes (1,000- and 500-krone notes). The rate of growth in the value of circulating banknotes has been 5-6 per cent in recent years.¹

The 100-krone note is currently the key note in the new series and is thus the banknote most frequently encountered in circulation. In quantitative terms the 100-krone note accounts for 45 per cent of the total number of circulating banknotes.

Circulation of the individual banknotes has shown highly varying development in recent years, cf. Chart 1. In general, circulation of the 100-krone note has decreased, while circulation of the 200- and 500-krone notes has increased. Since it is still in an introductory phase the strongest increase was naturally shown by the 200-krone note. The growth in the 200- and 500-krone notes' share of total banknotes in circulation can be attributed to such factors as their increased use in ATMs. Circulation of 1,000-krone notes has been almost constant.

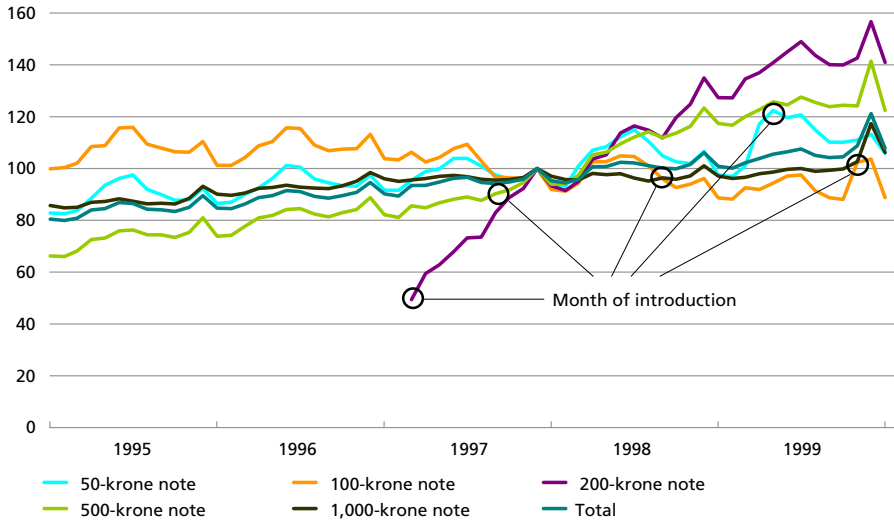
The course taken in individual years shows that use of the 1,000-krone note is generally homogenous, but greatest in December. The 500-krone note shows the same pattern. Disregarding the Christmas trade, when all banknote denominations are in frequent use, the stable use during the year indicates that the largest banknotes are kept for steady use during the year. The 500- and 1,000-krone notes thus to a certain extent serve as savings objects. The small banknote denominations show considerable fluctuation in the course of the year, peaking in the summer months. The fluctuations in the number of transactions are thus to a high degree absorbed by the 50- and 100-krone notes: the small de-

¹ In 1999 the rate of growth was extraordinarily high due to the preparations for the millennium change.

DEVELOPMENT IN CIRCULATION OF INDIVIDUAL BANKNOTES (VALUE)

Chart 1

Index, end-December 1997 = 100



Source: Danmarks Nationalbank.

nominations are used for the small-value transactions, which are normally numerous during the summer. This applies to consumption by tourists and residents alike.

The varying use of the different banknotes is also reflected in their varying lifetimes. The lifetime of the 500- and 1,000-krone notes is thus longer than of the 50- and 100-krone notes.¹

The replacement of both the 50- and 100-krone notes has led to a considerable increase in circulation, which was not observed for the 500- and 100-krone notes. Again, this is related to value. When a new banknote is introduced, people tend to be curious to see it for themselves. It is cheaper to satisfy this curiosity to experience small rather than large banknote denominations. Furthermore, it is less expensive for the banks to stock large volumes of 50-krone notes than of 1,000-krone notes. The circulation of the 50-krone note has already fallen to a more normal level, reflecting the aforementioned effects. This also applies to the 100-krone note.

INTRODUCTION OF THE NEW BANKNOTE SERIES

During the period 1997-99 Danmarks Nationalbank replaced the entire series of Danish banknotes. The replacement of the previous Series 1972

¹ For further details of the lifetime of banknotes see Erik Haller Pedersen and Tom Wagener, Circulation of Notes and Coins in Denmark, Danmarks Nationalbank, *Monetary Review*, November 1996.

TIMETABLE FOR THE INTRODUCTION OF SERIES 1997		Box
50-krone note		7 May 1999
100-krone note		22 November 1999
200-krone note		10 March 1997
500-krone note		12 September 1997
1,000-krone note		18 September 1998

with the new Series 1997 is related to a need for banknotes which are better protected against counterfeiting. The 200-krone note was the first in the new series to be introduced, while the 100-krone note, the key banknote in the series, was the last. The timetable for the introduction is shown in the Box.

The new 200-krone note

The 200-krone note was the first banknote of this denomination to be circulated in Denmark. The background was the need for a banknote with greater purchasing power than the 100-krone note.

At the end of January 2000 there were 11.4 million 200-krone notes in circulation, representing a value of almost kr. 2.3 billion. This constitutes an increase by 11 per cent from January 1999.

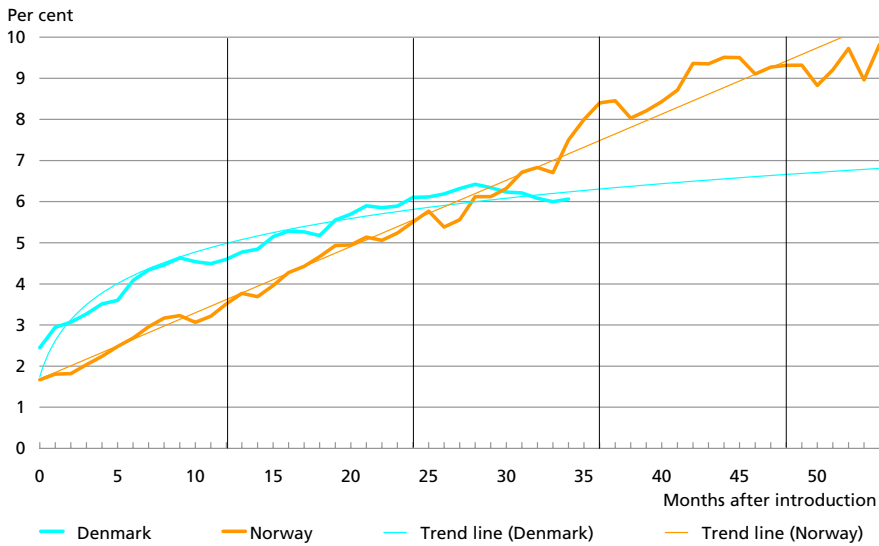
Norway introduced a 200-krone note in 1994. Since Denmark and Norway have identical note series, it may be relevant to compare the development in the use of the respective 200-krone notes. This will give an impression of the pace of the introduction and the potential of the 200-krone note in relation to total note circulation.

In the first four years after its introduction use of the 200-krone note in Norway showed an almost constant increase, cf. Chart 2. The development in this period is best described by a linear function. In Denmark growth in the 200-krone note's share of total banknotes in circulation was relatively strongest around the time of its introduction. The growth has since declined to the current very low level. The development in use of the 200-krone note so far is best described by a logarithmic function. The difference in the time taken for notes to become accepted may be related to such factors as differences in cash-supply systems.

The trend for the Danish 200-krone note appears to converge towards a limit which expresses the 200-krone note's share of total banknotes in circulation in the long term. Presently, the natural level for the 200-krone note appears to be 6-7 per cent, although a shift in the level cannot be excluded. Such shifts will be attributable to changes in consumer behaviour. In Norway, the 200-krone note appears to have found

THE 200-KRONE BANKNOTE'S SHARE OF TOTAL CIRCULATION (VALUE)

Chart 2



Note: The last five observations for Norway are preliminary figures.
Source: Norges Bank and Danmarks Nationalbank.

its natural level at approximately 10 per cent of total circulating banknotes. During the third year after the introduction (in Denmark 1999 and in Norway 1997) the 200-krone note's share of total circulating banknotes became higher in Norway than in Denmark. The continued high level of growth in Norway can be attributed to such factors as Norges Bank's active measures to stimulate the use of 200- and 500-krone notes in ATMs.

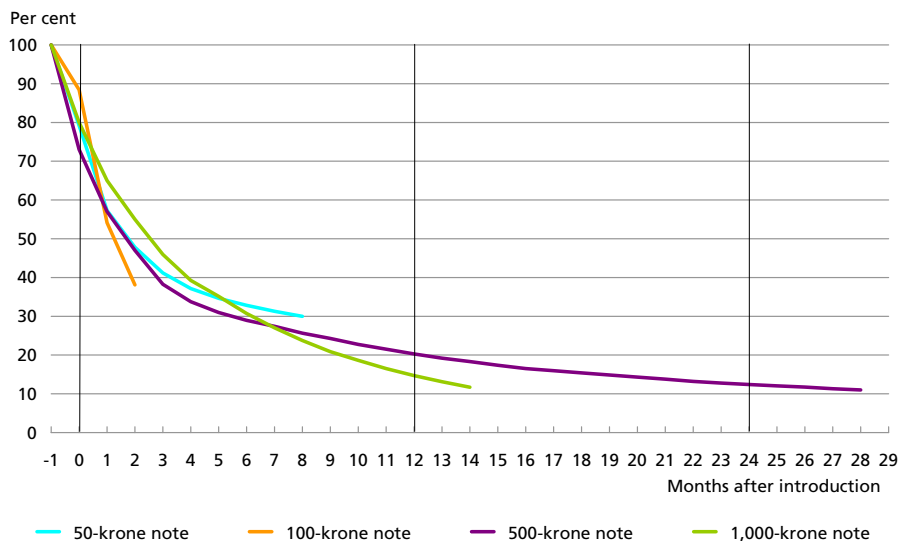
The use of 100-krone notes must be expected to decrease upon the introduction of a 200-krone note. In Norway the value of circulating 200-krone notes exceeded the value of circulating 100-krone notes in 1998. At the end of January 2000 the value in Denmark was still only 42 per cent of the value of circulating 100-krone notes. The 200-krone note has thus not replaced the 100-krone note to the same degree in Denmark as in Norway.

Replacement of the old banknote series

The banknotes in the old Series 1972 are withdrawn from circulation as they are received by the Nationalbank. Chart 3 shows the proportion of banknotes from the old series which are still in circulation. The circulating volume is compared to the circulating volume at the end of the month before the new banknote was introduced. Most banknotes are withdrawn from circulation at the beginning of the replacement phase –

REMAINING PROPORTION OF SERIES 1972 IN CIRCULATION

Chart 3



Note: The compilation includes banknotes in cash depots.

No data is available for the first three months for the 500- and 1,000-krone notes. The figures are therefore approximations.

the volume of withdrawn banknotes decreases over time after the introduction of the new banknote. The development in Series 1972 can thus best be described by an exponentially decreasing function with a constant percentage rate of decrease.

The rapid replacement is due primarily to a well-functioning cash-supply system. With regard to the three banknotes which were the first to be replaced, more than two thirds of the circulating volume of Series 1972 notes were withdrawn from circulation within six months of the introduction of the new banknotes. The rate of replacement of the individual denominations varies slightly. The 1,000-krone note tends to be replaced sooner than the 500-krone note, while for the 50-krone note there is no clear pattern. At the close of January 2000 there are signs that the 100-krone note will be withdrawn more quickly than the other banknotes. At the end of January 2000 62 per cent of the 100-krone notes in Series 1972 had been withdrawn.

The remaining share of circulating Series 1972 notes shows convergence towards a threshold value. This threshold is the proportion of old banknotes which are not returned to the Nationalbank. The threshold value will be zero if all banknotes are returned. However, a certain number of banknotes can be expected not to be returned. These are either still being used, are stored in collections, have disappeared or

have been destroyed. A certain number of banknotes will also disappear abroad in connection with foreign tourism in Denmark.

Approximately 4 per cent of the old banknotes from before Series 1972 still remain to be returned to the Nationalbank. Although old banknotes are still received, this proportion can be regarded as the threshold for the old banknote series. Approximately 90 per cent of the 500-krone notes in Series 1972 have been withdrawn, cf. Chart 3. This means that there were still Series 1972 500-krone notes for a value of kr. 612 million in circulation at the end of January 2000.

The final proportion of old banknotes which have not been withdrawn cannot be compiled until the banknotes are no longer redeemed at the Nationalbank. Banknotes have only been nullified in this way once since the introduction of the krone system in 1875. This was in connection with the note substitution in July 1945. All banknotes issued since 23 July 1945 are still redeemable at the Nationalbank.

Interest and Dividend on Denmark's External Debt

Frank Øland Hansen and Lill Thanning Hansen, Statistics Department

INTRODUCTION

The average net interest on Denmark's external debt was 8.7 per cent in 1998. This figure may appear high in view of the decline in interest rates in recent years. The explanation is that Denmark's external liabilities accrue interest at a higher rate than Denmark's external assets. The interest on total assets in 1998 is thus calculated to be 3.9 per cent, while the interest on liabilities is calculated to be 4.8 per cent. The following describes how the gross interest level should be used to calculate and interpret the real interest burden on the external debt.

During the 1990s the level of interest on Denmark's external assets and liabilities declined and the spread between the interest levels for assets and liabilities narrowed. Three reasons for this trend are identified: the falling level of interest rates in Denmark and abroad, the narrowing of the interest-rate differential to the euro and a change in the composition of Denmark's external assets and liabilities.

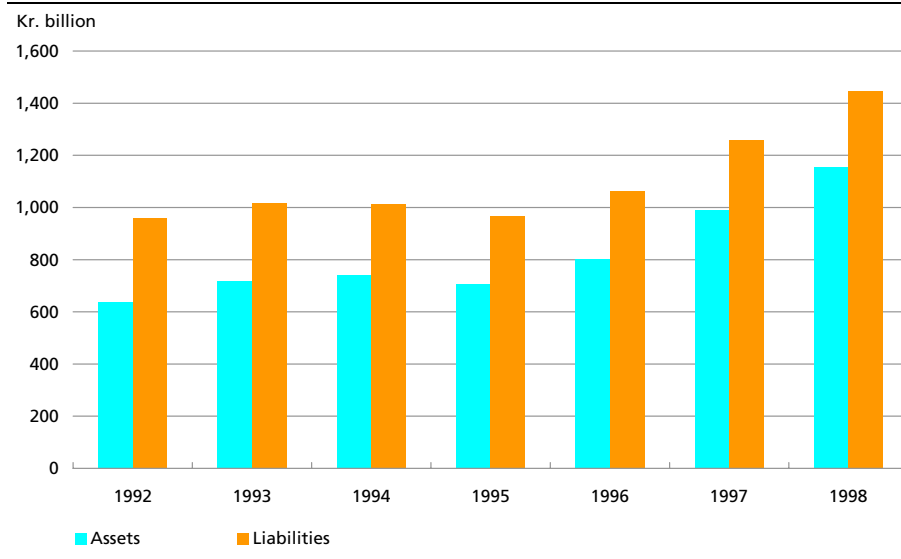
GROSS STATISTICS

Since the beginning of the 1960s Denmark has built up external debt, which peaked at kr. 332 billion at the end of 1991. The debt accumulation is related to sustained deficits on the current account of the balance of payments from the mid-1960s to the end of the 1980s, and to value adjustments. Today, the interest payments on this debt are the primary reason that Denmark does not have a substantial surplus on the current account of the balance of payments, even though the balance of goods and services shows a surplus. The interest burden on the external debt is thus of great significance to the Danish economy.

The greater internationalisation in recent years is apparent from the fact that both Denmark's external assets and liabilities have increased rapidly, cf. Chart 1. The average external debt of kr. 292 billion in 1998 can thus be related to liabilities of kr. 1,447 billion and assets of kr. 1,155

DENMARK'S EXTERNAL ASSETS AND LIABILITIES

Chart 1



billion. Denmark's net interest expenditure therefore conceals substantial gross interest payments to and from abroad.

If the level of interest on the external debt is calculated as the net interest expenditure divided by the net debt the interest is more than 10 per cent in the period 1992-96, falling to 8.7 per cent in 1998, cf. Chart 2. However, this calculation is problematic since the liabilities accrue interest at a 1 per cent higher rate than the assets. The effect of this difference in interest rates on the large gross holdings is that the net interest level is far greater than the gross interest level. If the interest on liabilities is greater than the interest on assets there may even be net interest expenditure even if the external debt is zero. This was the case when Norway became a net creditor in 1997, but still had net interest expenditure of 7 billion Norwegian kroner¹. In this case the net interest is negative, which is of course meaningless.

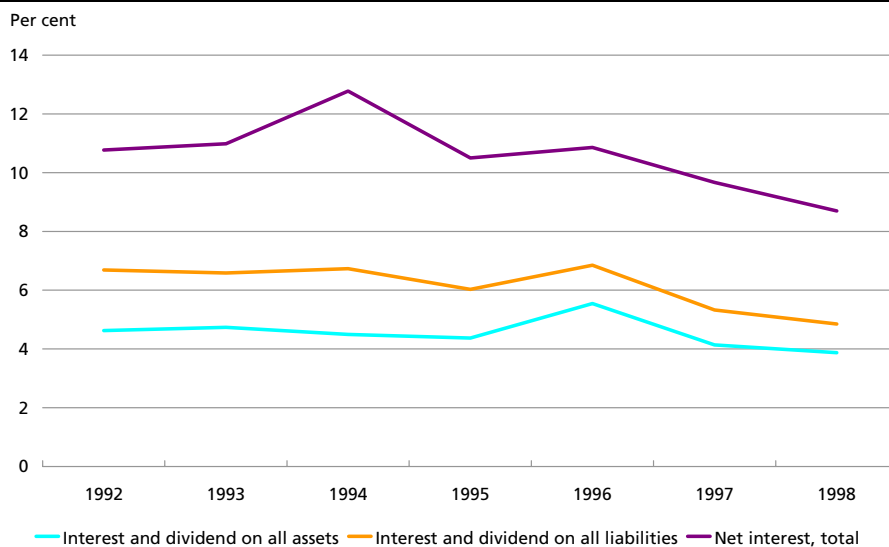
A reduction of Denmark's external debt to zero thus cannot in itself be expected to reduce the net interest expenditure to zero. At the interest rates applying in 1998, even without an external debt Denmark would still have interest expenditure in the range of kr. 10 billion, which is solely due to the differing levels of interest on assets and liabilities.² The

¹ J.P. Holter og T. Åmås, Yields on Norway's External Assets and Liabilities in 1997 (in Norwegian), *Penger og Kreditt* – 3/98.

² Assume that the liabilities are reduced by kr. 392 billion, while the volume of assets is unchanged. The value of Denmark's external assets and liabilities is thus equal, i.e. kr. 1,155 billion, and the external debt is eliminated. But if the liabilities still accrue interest at a rate 0.9 per cent higher than the assets, Denmark still has net interest expenditure of 0.9 per cent of kr. 1,155 billion, equivalent to approximately kr. 10 billion.

GROSS AND NET INTEREST

Chart 2



relation between the interest levels on assets and liabilities is thus of great significance to the scale of Denmark's net interest expenditure. The following sections consider the reasons for the differing interest levels on assets and liabilities.

INTEREST RATES AND INTEREST-RATE DIFFERENTIAL

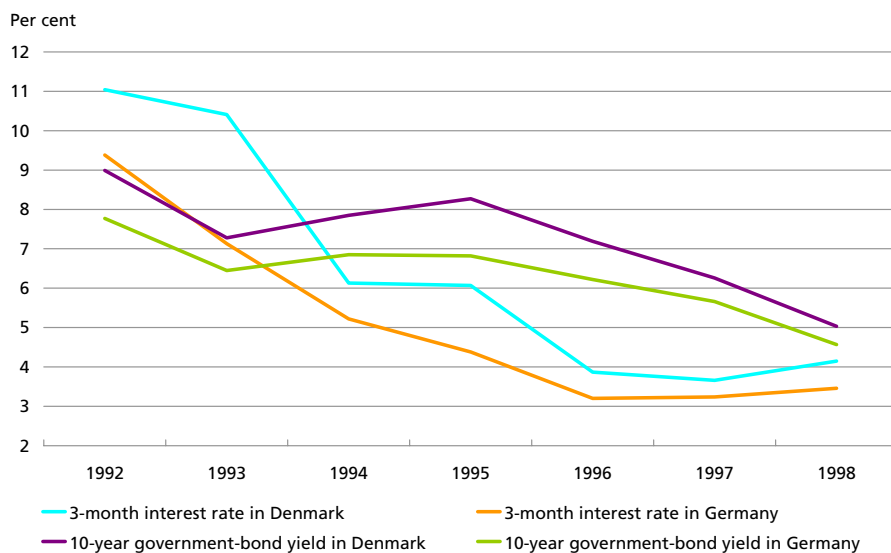
Both Danish and international interest rates fell during the 1990s, cf. Chart 3. The interest-rate differential to Germany simultaneously narrowed.

The drop in interest rates has reduced the interest on both Denmark's external assets and external liabilities. In 1992 the interest rate on assets was thus 4.6 per cent, and on liabilities 6.7 per cent, while in 1998 the interest rate had fallen to 3.9 per cent for assets and 4.8 per cent for liabilities. In isolated terms the decrease in international interest rates and the consequential decline in Danish interest rates have reduced Denmark's net interest expenditure.

In some years the level of interest on total assets and liabilities appears to be low in relation to the level of interest rates. The low interest level is related to such factors as the exclusion of non-distributed profits in the compilation of interest and dividend, while trade credits, which rarely accrue interest, are included in the compilation of assets and liabilities.

DANISH AND GERMAN INTEREST-RATE LEVELS

Chart 3



Note: The interest-rate levels are annual averages.

The differing interest levels on assets and liabilities is related to among other things a combination of the currency composition of the assets and liabilities and Denmark's interest-rate differential to the euro. Since a far greater proportion of liabilities than assets are denominated in Danish kroner an equivalently larger proportion of Denmark's liabilities than assets accrue interest at the higher Danish rate.

During the period under review the difference between the level of interest on assets and liabilities narrowed from 2.1 per cent to 0.9 per cent. In isolated terms the narrowing reduced Denmark's net interest expenditure. The increasing volumes of assets and liabilities influence the trend in the opposite direction. Since the liabilities accrue interest at a higher rate than the assets, this increases Denmark's net interest expenditure.

COMPOSITION OF THE DEBT

The decline in interest rates and the narrowing of the interest-rate differential are two reasons for the development in the level of interest on Denmark's external assets and liabilities during the 1990s. A third reason is the change in the composition of assets and liabilities in terms of currency, maturity and instrument.

Since 1993 the proportion of equity securities among both assets and liabilities has increased, cf. Table 1. The increasing proportions of equity

DENMARK'S EXTERNAL ASSETS AND LIABILITIES ¹							Table 1
Kr. billion	1992	1993	1994	1995	1996	1997	1998
Assets							
Foreign-exchange reserve (net) ..	45	60	65	59	75	108	116
Banks	284	336	346	309	343	409	470
Other shares	113	127	141	157	192	253	331
Other bonds	42	34	34	34	40	46	54
Other assets	154	161	156	147	153	174	185
Total	637	717	741	706	802	989	1155
Liabilities							
The central government's							
foreign debt.....	98	134	147	118	104	103	94
Banks	256	207	184	185	214	292	370
Shares	82	89	109	134	155	202	257
Other bonds ²	222	301	303	285	356	415	462
Other liabilities	301	287	272	246	234	248	265
Total	959	1018	1015	968	1063	1259	1447
Net liabilities	322	301	274	262	261	270	292

Source: Danmarks Nationalbank, Denmark's External Debt 1998, Special Reports 3 December 1999.

¹ Average of holdings at beginning and end of year.

² Comprises Danish bonds issued in Denmark and abroad by private business enterprises and local government.

securities are a consequence of share purchases and high capital gains in recent years. This development implies a decrease in the registered interest on Denmark's assets and liabilities. This is because the registered return on shares is relatively low since the major part of the profits of business enterprises is normally not distributed and thus not registered. If capital gains are included in the return calculations show that the average real return on Danish shares was 6.2 per cent in the period 1922-1996.¹

Even though the proportion of equity securities among both assets and liabilities has increased, for all years equity securities constitute a far larger proportion of the assets than of the liabilities. This factor contributes to the lower registered interest on Denmark's external assets than on its external liabilities.

Around one third of the liabilities are debt securities, while residents' holdings of foreign debt securities are relatively modest. Since the registered return on bonds on average is higher than on other outstandings the large difference in the portfolio volumes contributes to explaining the differing levels of interest on assets and liabilities. The calculated return on foreign debt securities is very high, which is probably related

¹ T. Engsted and C. Tanggaard, Risk Premium on Danish Equity Securities (in Danish), *Nationaløkonomisk Tidsskrift* – 2/99.

CALCULATION OF INTEREST AND DIVIDEND PAYMENTS

Box 1

The calculation of the interest and dividend payments is based on statistics for external payments. The statistics are published by Danmarks Nationalbank in "NYT – External Payments" and in the Monthly Financial Statistics. The payments statistics are compiled on the basis of the banks' reports of external payments and reports from business enterprises holding accounts abroad.¹

The distribution by sector and instrument used here is determined by the splitting of the payments statistics in the period 1991-96. The banks' assets and liabilities excluding direct investments and Danish equity securities are compiled separately. The foreign-exchange reserve and the central government's foreign borrowing are likewise compiled separately.

In 1997-98 interest and dividend were registered according to the instrument they concerned. The relevant sectors have thus not been registered directly. Accounting figures have therefore been used to determine the interest payments of the central government and the Nationalbank. In 1997-98 the banks' interest payments are identified by comparing the banks' commercial registration numbers, (SE numbers) with the registered interest payments concerning these numbers.

Up to April 1998 interest and dividend of less than kr. 2 million were reported separately without further specification. These payments constitute a large proportion of the total interest and dividend payments: 31 per cent in 1992, falling to 11 per cent in 1998. The published payments statistics include interest and dividend of less than kr. 2 million under interest. In this paper they are distributed proportionally on all instruments and sectors, except the central government and the Nationalbank, in accordance with the distribution of payments exceeding kr. 2 million in the individual years. There is thus a degree of uncertainty in the distribution of interests and dividend by instrument and sector.

Accrued interest on trading in bonds is eliminated from the statistics. Furthermore, interests concerning derived financial instruments is not included in the statistics. The total interest and dividend payments therefore deviate from the published statistics.

¹ Cf. Lasse Tryde, Danmarks Nationalbank's New Reporting System for Payments Statistics, Danmarks Nationalbank, *Monetary Review*, 2nd Quarter 1999.

to problems in distributing interest and dividend by instrument and sector in 1997 and 1998, cf. Box 1.

The banks' external assets and liabilities constitute a large proportion of Denmark's total external assets and liabilities. For this reason the development in the level of interest on the banks' external outstandings is of great significance to the development in the overall interest level.

With the exception of 1996 interest on the banks' assets and liabilities has declined since 1993, cf. Table 2. There is no tendency for the banks to change the composition of their instruments. On the other hand, the proportion of the banks' external assets and liabilities denominated in Danish kroner of their total external assets and liabilities

INTEREST ON DENMARK'S EXTERNAL ASSETS AND LIABILITIES							Table 2
Per cent	1992	1993	1994	1995	1996	1997	1998
Assets							
Foreign exchange reserve (net) ..	6.5	4.2	4.3	5.9	5.5	4.5	4.4
Banks	4.4	7.1	5.2	4.2	6.3 |	3.2	3.3
Other shares	4.2	1.6	1.8	2.1	3.2 |	2.0	1.8
Other bonds	11.0	6.7	9.6	9.8	8.7 |	10.4	9.5
Other assets	3.1	2.1	4.4	5.3	6.0 |	7.7	7.0
Total	4.6	4.7	4.5	4.4	5.5	4.1	3.9
Liabilities							
The central government's							
foreign debt.....	7.6	6.0	6.2	6.5	6.3	4.5	5.4
Banks	4.1	7.3	6.9	5.2	8.8 |	4.4	3.8
Shares	4.5	4.5	4.2	3.7	5.9 |	3.6	3.6
Other bonds	12.5	9.6	9.2	6.9	6.3 |	6.6	5.3
Other liabilities	4.9	3.9	5.1	6.6	6.7 |	6.1	6.4
Total	6.7	6.6	6.7	6.0	6.8	5.3	4.8
Net	10.8	11.0	12.8	10.5	10.8	9.6	8.7

Source: The Payments Statistics and Denmark's External Debt.

has decreased since 1995. Since krone-denominated claims on average accrue interest at a higher rate than claims denominated in the currencies of the EMU member states, the change in the banks' currency composition is a contributing factor to the declining interest rate in the last few years.

In 1997 and 1998 the interest rates on the banks' external assets were very low and at the same time other assets accrued interest at a higher rate than before. This may be related to compilation problems, cf. Box 1. Other assets include loans, deposits, intercompany loans, trade credits and financial leasing. Since a large proportion of the banks' assets is loans and deposits it is probable that some interest payments concerning other assets ought instead to be registered under the banks' interest payments.

Factors such as liquidity and security play a vital role in the banks' placement policies and therefore the banks seldom achieve the highest interest levels. The large proportion of Denmark's total external assets held by the banks thus contributes to the lower level of interest on Denmark's external assets than on its liabilities.

The placement policy for the foreign-exchange reserve attaches great importance to high liquidity and the high credit standing of the counterparties. The foreign-exchange reserve therefore also contributes to the lower interest on Denmark's external assets.

Denmark's external debt is the difference between the market value of Denmark's external financial assets and liabilities. The statistics are compiled annually by Danmarks Nationalbank. The most recent statistics were published in Special Reports on 3 December 1999. According to the methodology used all securities should be compiled at market value at year-end. The statistics for 1991-97 deviate in this respect since Danish bonds issued abroad are compiled at nominal value. Moreover, in all years there may be deviations from the market value for direct investments since direct investments in unlisted companies are compiled according to the intrinsic value method.

In this article the average holdings of assets and liabilities in one year are approximated as the average of portfolios at the beginning and end of the year. The central government's external debt and the foreign-exchange reserve are compiled on a net basis, and equity securities comprise both portfolio investments in equity securities and direct investments. Other assets and liabilities include e.g. loans and deposits with banks, intercompany loans, trade credits and financial leasing.

The data used are not directly comparable with the published external assets and liabilities.

METHOD

This compilation was made on the basis of the payment principle, i.e. only interest and dividend actually paid are included in the statistics. The accruals principle could alternatively be applied. According to the accruals principle interest is registered at the time the obligation to pay arises. This means that interest accruing during a financial period is registered for that period, regardless of whether it is actually paid during the period or not. The payment principle typically entails lower interest on Denmark's external assets and liabilities than the accruals principle. This is because non-distributed profits on equity securities and capital losses on issue of debt securities are not included.¹ On the other hand, until the end of 1998 Danish bonds issued abroad are compiled at nominal value, which is normally lower than market value. This implies that the return on Danish bonds is overvalued, cf. Box 2.

Another source of uncertainty about the calculated interest concerns payments of less than kr. 2 million, which are not distributed by instrument in the payments statistics before 1998. These payments are distributed in proportion to the distribution of payments exceeding kr. 2 million in each year, cf. Box 1. New information indicates that a larger proportion of income of less than kr. 2 million is dividend rather than inter-

¹ The capital loss on deep discounted central-government bonds issued abroad is included in this compilation, however.

est. The return on foreign shares is therefore probably underestimated as a consequence of the assumption of proportionality.

CONCLUSION

Several factors are of significance to the development in Denmark's net interest expenditure and thereby of an important item of the balance of payments. If the external debt is reduced, the net interest expenditure declines. If the interest-rate differential to the euro narrows further in the coming years, the net interest expenditure will be reduced equivalently. If Denmark's assets and liabilities increase in parallel as a consequence of the greater internationalisation this will on the other hand increase the net interest expenditure as long as the liabilities accrue interest at a higher rate than the assets.

It is thus not possible to predict the development in Denmark's net interest expenditure solely by considering the development in the external debt. The magnitude of the interest-rate differential, the composition of the debt and the degree of internationalisation all contribute to determining this development.

TARGET's First Year

Jesper Berg and Thomas Bo Christensen, Payment Systems Department

INTRODUCTION

As an element of Economic and Monetary Union the euro payment system TARGET¹ has also completed its first year. TARGET's first year was successful.

The introduction of the euro gave rise to a need for fast and safe transfer of large amounts in euro within the euro area, to support the single money market. The two main objectives of TARGET are to facilitate monetary-policy transactions in the euro area, and more generally to ensure faster, safer and cheaper cross-border payments in euro.

User surveys show that users are generally satisfied with the system, but that it could be improved in certain respects. This will be taken into account in the ongoing development of TARGET – and its Danish interface, DEBES.

Throughout 1999 the number of payments in TARGET has been large and increasing. This especially applies to payments between financial institutions (inter-bank payments), while the number of customer payments in TARGET has been limited. This reflects TARGET's primary function as a large-value payment system. The number of payments in non-euro area member states has been relatively low, since use of the euro in these countries is limited.

This article describes the volume of payments in TARGET in 1999 in DEBES and in TARGET generally. The various international user surveys conducted by e.g. the Bank of England and the European Central Bank, ECB, are then described, together with a Danish user survey carried out by the Nationalbank in December 1999. The article concludes with an outline of the system's further development in the form of additional features in DEBES and the new system, KRONOS.

¹ TARGET is an acronym for Trans-european Automated Realtime Gross settlement Express Transfer system. The system is described in further detail, together with its Danish component – DEBES – in Thomas Angelius, Søren Lundsby Hansen and Jesper Mærsk, DEBES – the Danish Part of TARGET, Danmarks Nationalbank, *Monetary Review*, 2nd Quarter 1998.

TRANSACTIONS IN TARGET IN 1999 Table 1

	Year	Daily
Number of payments, 1,000	42,258	163
Value of payments, euro billion	239,472	925
Average amount per payment, euro	5,666,903	

Source: The ECB's Web site www.ecb.int

USE OF TARGET

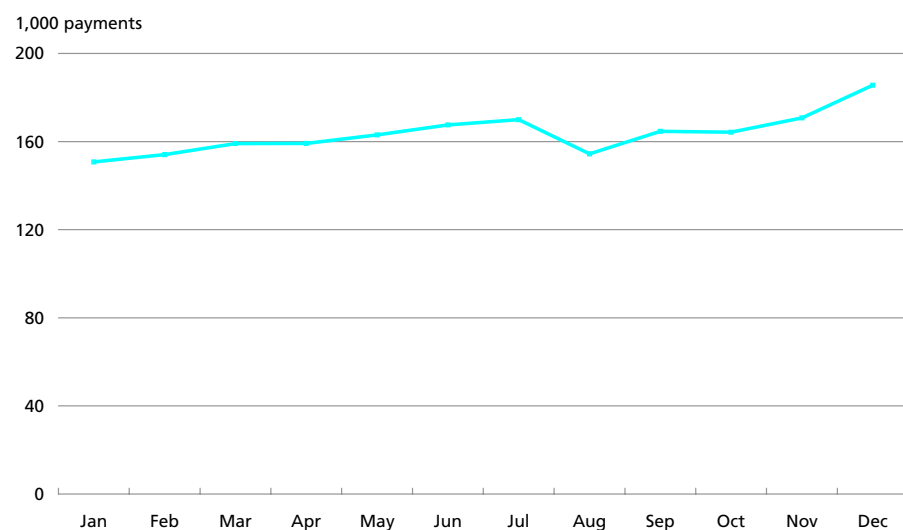
General use

TARGET is designed to process large-value payments, especially payments between financial institutions, and indeed large amounts were processed in TARGET in 1999. This applies to the total number of transactions, to the average transaction, to domestic or cross-border payments, or on comparing the traffic in TARGET with competing systems.

Table 1 shows the total number of payments and their value, as well as the average number of payments and their value on a daily basis. As shown in the Table, TARGET processes more than 160,000 payments per day for a total value of almost euro 1,000 billion, corresponding to six times Denmark's annual GDP.

The average transaction is for more than euro 5 million. TARGET thus does not process ordinary payments between private individuals. The number of payments in TARGET rose during the year, cf. Chart 1.

DAILY PAYMENTS IN TARGET IN 1999 Chart 1



The very large number of payments must also be viewed against the background that no less than 5,000 banks within the EU are directly linked up to TARGET. In addition, around 30,000 banks in the EU are indirectly linked to TARGET, i.e. via a direct participant.

Domestic payments have accounted for the largest proportion of payments in TARGET. However, the figure of more than 30,000 cross-border payments per day in recent months is by no means insignificant. The value of a cross-border payment is typically three times the value of a domestic payment.

Competition with other payment systems and contribution to turnover from connected systems

Up to the introduction of TARGET there was much discussion of the competition between TARGET and a number of large-value netting systems. In TARGET payments are processed in real time, on an individual basis, while in netting systems they are typically collected during the day and settled collectively. In the present environment where safety is a prime concern, TARGET has its advantages, although it is normally more expensive to use than the netting systems, cf. Box 1.

In 1999 TARGET performed well in competition with the netting systems, cf. Chart 2. The largest netting systems are the private pan-European EURO 1, the Bundesbank's EAF and PNS of France. While

TYPES OF PAYMENT SYSTEMS

Box 1

Payment systems for transfer of funds between banks can be divided into two main categories: real-time gross settlement systems and net settlement systems.

In a real-time gross settlement system (RTGS) the banks send their payment orders to e.g. the Nationalbank on a continuous basis. Each payment is settled immediately and finally via the banks' accounts with the Nationalbank.

In a net settlement system the banks on an ongoing basis send their payment orders to a clearing centre (e.g. PBS or VP). One or several times a day the latter calculates the net position of each bank. The banks then settle their accounts, e.g. via accounts with the Nationalbank.

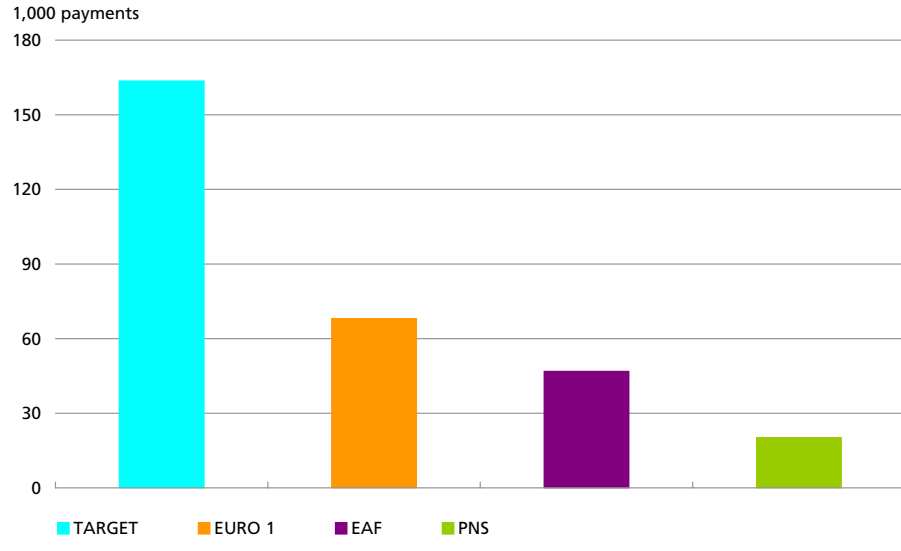
The two types of system have both advantages and drawbacks. In a net settlement system the payments are not final until clearing and settlement have taken place. On the other hand, the liquidity requirement, and thereby the costs, are higher in a gross settlement system. A bank which in the course of one day is to send and receive three payments each of kr. 50 million, will have no liquidity requirement in a netting system, whereas in a gross settlement system it might require liquidity of up to kr. 150 million if the bank cannot itself determine the transmission time.

In Denmark, as of 4 January 1999 there are two real-time gross settlement systems: DEBES in euro and the DN Inquiry and Transfer System in kroner. The retail clearing and the securities clearing systems¹ are examples of net settlement systems.

¹ The Danish Securities Centre also has an RTGS facility, however.

DAILY PAYMENTS IN TARGET AND COMPETING NETTING SYSTEMS IN 1999

Chart 2

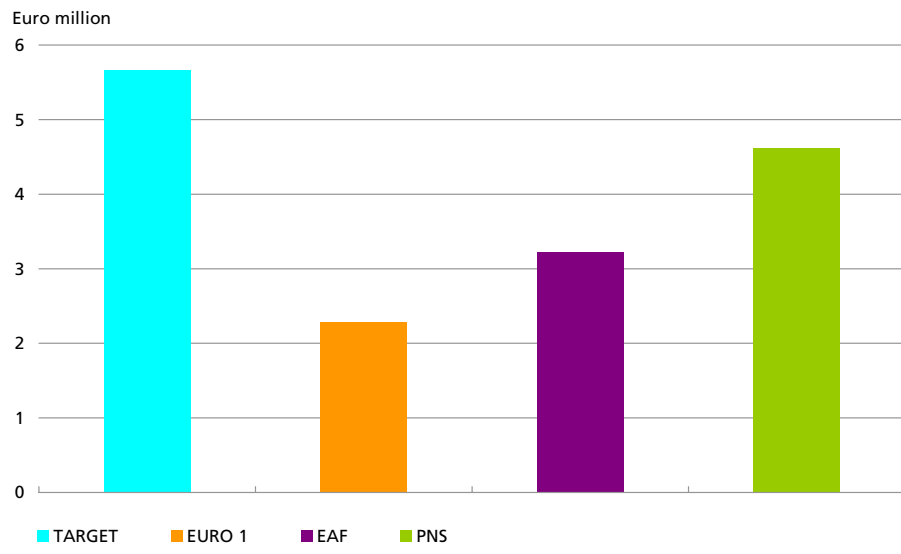


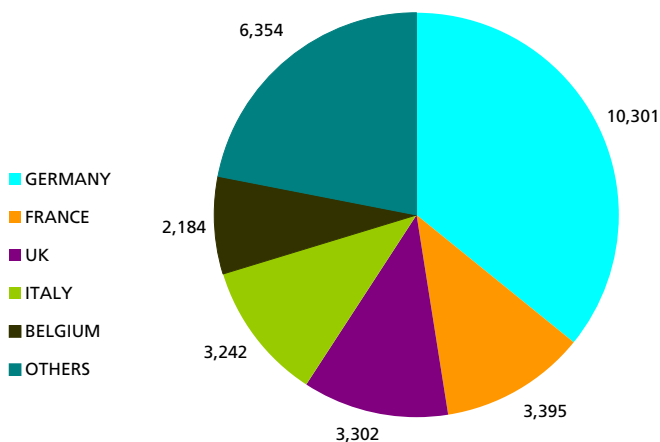
TARGET is the most frequently used system in terms of the total number of payments, EURO 1 may be the preferred system for cross-border payments.

Another interesting feature to consider in addition to market shares is the average payments in the various systems, cf. Chart 3. Payments in

AVERAGE VALUE PER TRANSACTION IN TARGET AND NETTING SYSTEMS IN 1999

Chart 3





TARGET are somewhat larger than in the other systems. In safety terms TARGET is the most appropriate choice for large-value payments.

Finally, one can examine the distribution of cross-border payments in TARGET on the various national payment systems, cf. Chart 4. Not surprisingly, the large euro area member states account for the largest share, but the UK also has a large share, reflecting the status of London as a financial centre.

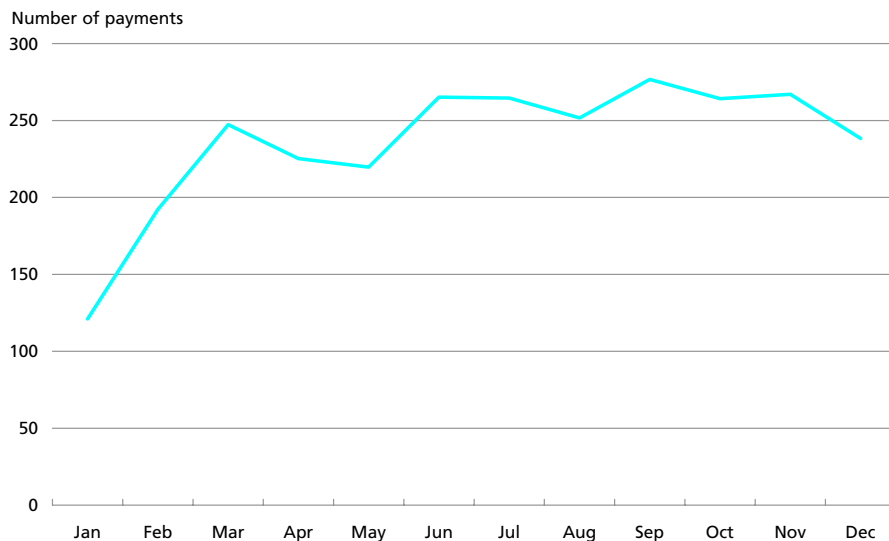
Use of TARGET in Denmark

The number of payments in DEBES generally increased moderately throughout 1999. After a slow start in January DEBES quickly reached the level which was maintained for the rest of the year, cf. Chart 5. More than 200 cross-border transactions per day were thus submitted. The value of the submitted cross-border transactions amounted to around euro 5 billion per day.

The number of domestic payments was limited to around 25 per day for a value of just over euro 50 million per day. Domestic transactions thus account for around 10 per cent of the total number of transactions, and around 1 per cent in value terms. The volume of payments reflects Denmark's status as a non-euro area member state. In the euro area the domestic payments of member states thus constitute around 75 per cent in terms of number of payments, and around 60 per cent in terms of value.

DAILY PAYMENTS IN DEBES IN 1999

Chart 5



Some Danish banks obtain liquidity via their branches in the euro area member states. This saves the cost of financing intra-day liquidity at a non-euro area central bank. These liquidity payments account for just over 30 per cent of the total value of the cross-border payments, and approximately 2 per cent of the number of payments.

TARGET also distinguishes between inter-bank payments and customer payments. Inter-bank payments are transactions between financial institutions, while customer payments involve at least one non-financial institution. TARGET is designed primarily to handle inter-bank payments. This is well reflected in the pattern of payments for the Danish participants since the value of inter-bank payments constitutes just over 99 per cent of the total payments.

USER SURVEYS

The ECB's user survey

In November the ECB published a user survey concerning cross-border payments in TARGET¹. Three conclusions from the survey can be emphasised:

- TARGET is recognised as the *de facto* standard system for large-value cross-border payments.
- The users prefer TARGET because it is an attractive system, not because they feel obliged to use it.

¹ ECB, Cross-border payments in TARGET: A users' survey, November 1999.

PAYMENT VIA CORRESPONDENT BANKS

Box 2

The correspondent bank system is the classical system for transaction of cross-border payments. Under this system the banks hold accounts with each other for settlement of payments in other countries. For example, a Danish bank may settle a payment in Germany by drawing on its account with its German correspondent bank. In TARGET, the central banks become correspondent banks for euro payments as they already are in domestic payment systems. The advantage of using central banks as correspondent banks is that the credit risk is eliminated. In addition, the central banks do not compete with the banks for customers, so that observance of customer confidentiality is ensured. The disadvantage is that the central banks are less commercially oriented than the banks.

- The relatively high price of using TARGET is not contested as long as the service level remains high.

However, further improvements are required in four areas.

Firstly, the users expect the system's stability to improve after the expected introductory problems. The ECB agrees that the current operating time is still not good enough for all components. Improvement in this area has the highest priority.

Secondly, the users call for better information on problems in TARGET. The ECB has launched a number of initiatives in this respect.

Thirdly, the users have problems in managing their liquidity between the various euro payment systems and the users' correspondent bank accounts. The users themselves have taken the initiative to prepare guidelines for liquidity management. This work is supported by the ECB.

Fourthly, especially the large international banks call for harmonisation of the national systems which are connected to TARGET. This is currently being discussed within the ESCB.

TARGET, and more generally the euro, have led to considerable changes in the payments infrastructure, especially in the euro area, and this development is expected to continue¹. This has put pressure on the correspondent bank system, cf. Box 2.

For cross-border payments more formalised systems such as those described above are used increasingly, rather than correspondent banks. More and more cross-border payments are thus processed in the same way as domestic payments. However, it is estimated that the correspondent banks still process around 150,000 payments in euro per day.

Considerable further rationalisation of the use of correspondent banks is expected. Many banks wanted to see whether the new systems could

¹ Bank of England, Practical Issues arising from the euro, December 1999.

While a number of formalised payment systems for large-value cross-border payments in euro have been established, this is not yet the case for retail payments. Most cross-border retail payments in euro are still settled via the correspondent bank system. As a result, retail payments are associated with excessive costs for the ordinary consumer and the volume is equivalently lower. The ECB describes this problem in a recent report¹.

It appears from the ECB survey that the cost of even small cross-border payments in euro is between euro 3.5 and 26. Previous surveys showed an average completion time for payments of almost 5 days, which still appears to be the case.

The ECB finds that the high prices are due to the lack of formalised systems for cross-border payments, and insufficient standardisation of retail payments between countries, e.g. as regards account numbers. Both aspects entail a considerable degree of manual processing of the payments, which is expensive.

In the ECB's opinion the task of establishing the necessary structures and common standards should in the first instance be undertaken by the banks. It is noted that a number of initiatives have been launched and that the European Commission has already promoted a certain level of harmonisation by a directive.

The ECB has established seven objectives which the banks are expected to fulfil via the development of the market for cross-border payments. The seven objectives are:

1. Improved systems and services must be ready by 1 January 2002.
2. Cross-border credit transfers² must be given priority.
3. The price for cross-border credit transfers must be significantly reduced.
4. The completion times for domestic and cross-border payments must be almost equivalent.
5. All charges in connection with a credit transfer must be paid by the transmitter, unless otherwise agreed.
6. Free access (for the banks) to participate in cross-border retail payment systems.
7. Existing standards must be implemented without delay.

The European Commission issued an equivalent statement at the beginning of February.

¹ The ECB, Improving cross-border retail payment services, the Eurosystem's view, September 1999.

² Credit transfers are payments at the request of the payment sender. Debit transfers are payments at the request of the payment recipient (such as cheques and credit cards).

function smoothly before changing their strategies. In addition, it takes time to adjust the related IT systems, and a certain institutional inertia also exists. The correspondent bank system will continue to play a key role for a long time to come due to agreements on the reciprocity of business transactions and the wish for recourse procedures and error remediation.

Another significant factor is that the correspondent banks are still the means of access to the retail payments structure in the various countries. Unlike the market for large-value payments, the retail payments area

has not yet seen the establishment of a formalised system for cross-border payments at a corresponding volume to that of the equivalent domestic systems. As a consequence, the processing of cross-border retail payments is still relatively expensive, cf. Box 3.

This development is appropriate since RTGS systems must be considered safer than correspondent bank systems. For a central bank a payment system should primarily minimise risk and maximise efficiency. Risk management is considerably more advanced in the more formalised systems, thereby increasing financial stability. Furthermore, the formalised systems imply considerable economies of scale, resulting in lower payment costs.

Danish user survey

Towards the end of 1999 a user survey was conducted among direct participants in Denmark. The purpose was to chart the Danish participants' use of euro payment systems and any barriers to the use of DEBES.

Virtually all respondents use both DEBES and correspondent banks in their settlement of euro payments. Correspondent banks are clearly used most frequently, although their share is declining, and a good 60 per cent of the survey participants have reduced or expect to reduce the number of correspondent banks.

The users state price as the most important factor determining the choice of payment system. The second factor is a direct channel to the counterparty, followed by time factors and counterparty requirements, cf. Table 2.

The users state price in particular as the main reason for not choosing DEBES. However, maintaining correspondent relations also plays a key role. Factors such as reciprocity and the importance of a good network of contacts, e.g. to solve problems with a payment, are emphasised, cf. Table 3.

IMPORTANT PARAMETERS FOR CHOICE OF EURO PAYMENT CHANNEL		Table 2
Per cent of responses ¹		
Price	46	
Possibility of reaching counterparty	32	
Availability	21	
Counterparty requirements	18	
Time	18	
Liquidity	11	

Source: User survey of the 35 direct participants in DEBES, December 1999.

¹ The column adds up to more than 100 per cent as the participants could state more than one factor. The responses have not been weighted in terms of the participants' varying use of DEBES.

PARAMETERS STATED AS REASONS FOR NOT CHOOSING DEBES		Table 3
Per cent of responses ¹		
Price...	75	
DEBES fails to meet requirements	43	
Of which - Insufficient functionality		16
- Insufficient own development of systems		16
- Insufficient user-friendliness		3
- Other		9
Correspondent bank relations	64	
Of which - Agreements with counterparty		9
- Reciprocity		35
- Other (service and network of contacts)		20
Direct participant in an in-country is used	29	
Of which - Lower funding costs		9
- Reliability		3
- Better systems		6
- Insufficient own development of systems		9
- Other		3

Source: User survey of the 35 direct participants in DEBES, December 1999.

¹ The column adds up to more than 100 per cent as the participants could state more than one factor. The responses have not been weighted in terms of the participants' varying use of DEBES.

By price is meant the price of each payment, as well as the price for intra-day liquidity payable by the participants. In order to reduce the costs of obtaining liquidity just over 40 per cent of the respondents resort to their own branches in a country participating in EMU, or are connected to a direct TARGET participant in a country participating in EMU. The costs of intra-day liquidity are thereby avoided. Furthermore, the use of TARGET can be increased by improving the queue functions¹ in connection with settlement of payments.

THE FUTURE

Further development of TARGET and DEBES

Since TARGET commenced, in close dialogue with the system's users the Nationalbank has launched new initiatives and made certain adjustments after a few minor initial difficulties. To ensure maximum system stability, new measures are implemented in packages since experience shows that ongoing upgrading can result in unintentional errors.

In 1999 a package was implemented which primarily consists of remediation of the initial difficulties in the system. During the 1st quarter of 2000 another package is implemented, focusing on further stabilisation of operations, while also accommodating the requirements of the users.

¹ Payments to be transmitted later, or payments awaiting funds before they can be dispatched, are placed in a queue.

The existing queue function is improved, among other factors. In November 2000 a new message type for customer payments will be implemented, in compliance with e.g. the requirements of an EC directive (97/5/EC) on transparency of customer payments vis-à-vis customers.

During 2001 a new krone payment system will be launched – KRONOS – to partly replace the existing DN Inquiry and Transfer System. KRONOS will also take over the functionalities of DEBES and act as a payment system in both kroner and euro. This means that no new measures to improve the DEBES system are planned to be implemented after 2000.

A key objective of further development is to facilitate the inter-linking of the banks' systems and TARGET. Experience shows that manual inter-linking procedures are cost-intensive and give rise to errors.

SUMMARY

All payments statistics and user surveys in 1999 clearly indicate that the financial sector in Europe has embraced TARGET. This applies in particular to the countries which have adopted the euro, where TARGET facilitates monetary-policy transactions and ensures faster, safer and cheaper cross-border payments in euro.

The use of TARGET has been more moderate in Denmark, which is hardly surprising. This is also reflected in the marginal use of TARGET for domestic payments compared to the total payments transmitted by Danish participants, while the domestic payments account for the largest share in the countries participating in EMU.

In the user survey of Danish TARGET participants a few central factors which could increase the use of TARGET were emphasised. The main factors are the price per transaction, the price for using intra-day liquidity, and the opportunity to place future payments in a queue.

The future development of DEBES, the Danish part of TARGET, partly accommodates the requirement of improved queue functionality. At the same time, a new payment system, KRONOS, is under way. It will be able to handle payments in kroner and euro alike, and will take over DEBES' role as the euro payment system in Denmark during 2001. In the development of KRONOS the focus is on facilitating inter-linking with the banks' systems, thereby avoiding manual procedures to the greatest possible extent.

Demography and Growth in Denmark

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INTRODUCTION

Taking the latest population forecast from Statistics Denmark as the starting point, the focus is on population trends in Denmark in the next 40 years. Their implications for economic growth and for general-government finances are analysed. This topic has been considered in several fora in recent years, such as the Ministry of Finance, the Ministry of Economic Affairs and the Economic Council.

The conclusion drawn is that with regard to the supply of labour Denmark is at a crossroads. During the last 50 years the proportion of the population in active age classes has increased by 0.5 per cent p.a., equivalent to 800,000 people on an accumulated basis. In the next 40 years there will be no growth whatsoever. Apart from a rising population, recent decades have been characterised by a strong increase in the participation rate for women, which is now close to that for men, apart from the older age classes. Even if a further increase from an internationally already high level were to be achieved in the age-related participation rates, via such measures as later retirement from the labour market, light jobs and similar, in realistic terms the potential is far below the previous level.

The aforementioned factors imply an end to the underlying increase in the supply of labour during the last 50 years. A reduction of working hours and an earlier retirement age will therefore have a direct impact on labour supply in the economy. If material affluence and the level of public service are to be maintained, there is no basis for a continued reduction of working hours at the same pace as seen in recent decades. In this connection it is important to acknowledge that the supply of labour in the longer term determines the level of employment, output and income, and thereby material affluence.

The stagnating influx to the labour force coincides with a strong displacement in the age breakdown of the population towards a greater number of elderly people and thereby a growing provider burden. In 1950 5 people were employed for each person over 60 years of age, while the equivalent figure today is 3, and is expected to decline further

to 2 in 2040. Especially the group of very old people, i.e. aged 80 and above, will rise significantly. Since these age classes are relatively cost-intensive, general-government budgets will be subject to pressure.

These conclusions are not altered by the results of an analysis which show that economic growth is predominantly driven by productivity increases arising from technological progress. Although a certain braking of increases in productivity may possibly be anticipated, real GDP will probably as a minimum increase twofold over the next 40 years. However, rising GDP in itself is not the solution to the general-government budget problems attributable to the increase in the provider burden arising from the demographic trend. The reason is that both transfer incomes and public-sector salaries in Denmark match the development in wages in the private sector, so that although higher productivity makes everybody richer, it does not necessarily increase the scope of central-government finances for manoeuvre. A further reduction of working hours will require a higher taxation level, if the level of public services is to be maintained.

THE DEMOGRAPHICAL DEVELOPMENT

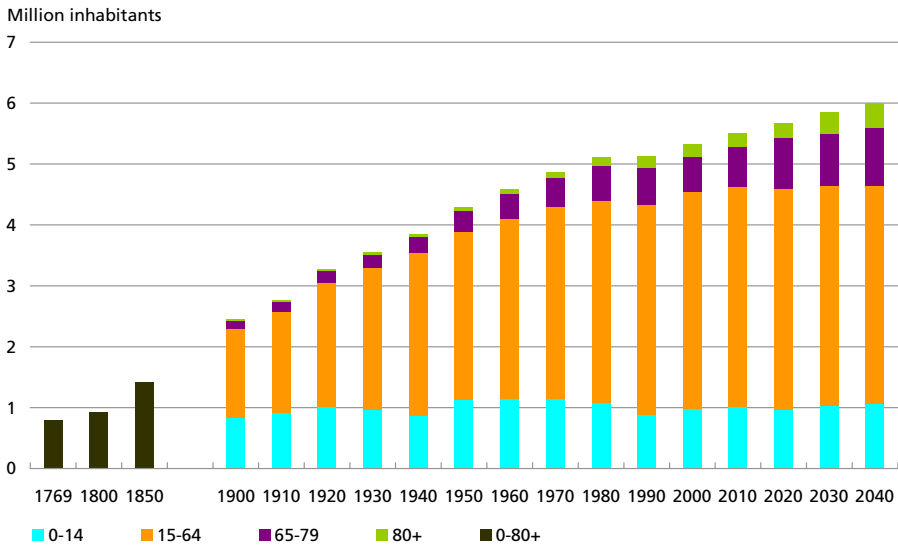
Danmark's population has risen over the years, cf. Chart 1, although the rate of increase has diminished and was close to zero from the mid-1970s. The lowest growth rate was in 1983, with only 51,000 live births in the birth cohort. During the 1990s the fertility rate rose again to a degree, but the Danish population is still unable to reproduce itself. The so-called net reproduction rate¹, which determines the long-term population trend, is only approximately 850, compared to the 1,000 required to stabilise the total population. Nevertheless, the total population figure is still expected to rise over the next 40 years, primarily due to expectations of positive net immigration in Statistics Denmark's forecast.

In addition to a rising population, the period after World War II has been characterised by a growing dependency ratio, cf. Chart 2. The proportion of the population aged over 60 has risen from 20 per cent of people in employment to 30 per cent today. The increase in the dependency ratio in the coming decades is thus not a new phenomenon, but represents the reinforcement of a known trend. In the last 50 years the increase in the dependency ratio has been offset by an equivalent drop in the proportion in the age class between 0 and 24 years, so that the proportion of 25-59 year-olds, which is the core of the labour force,

¹ The net reproduction rate is the number of girls an assumed class of 1,000 new-born girls will give birth to, if they give birth in accordance with the age-related fertility coefficients and die according to a given survival table.

THE DANISH POPULATION

Chart 1



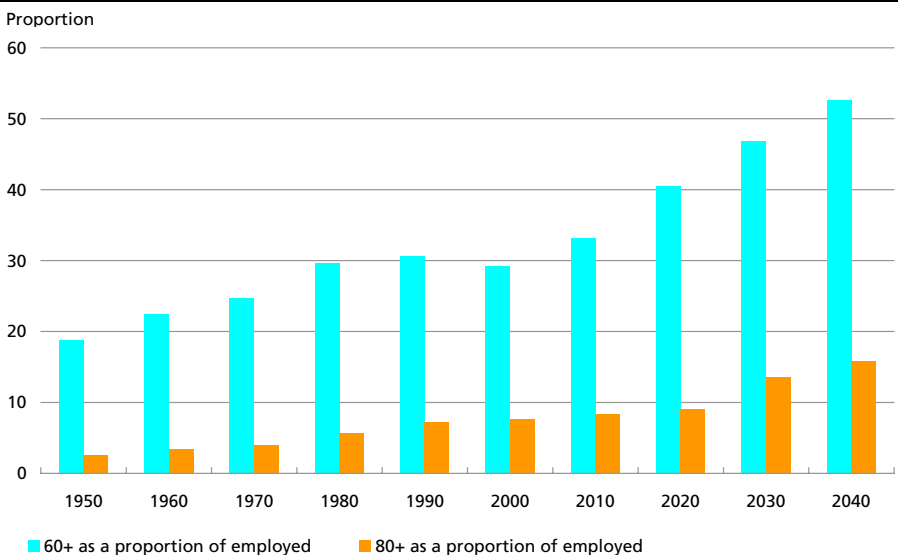
Note: The population figures for 1900 and 1910 exclude southern Jutland. This has no significant impact on the long-term profile.

has been unchanged at just under 50 per cent. In the future, this will change.

A rising dependency ratio is a phenomenon which to varying degrees will affect all industrialised countries during the next decades. Denmark and the UK appear to be among the countries where this trend is least

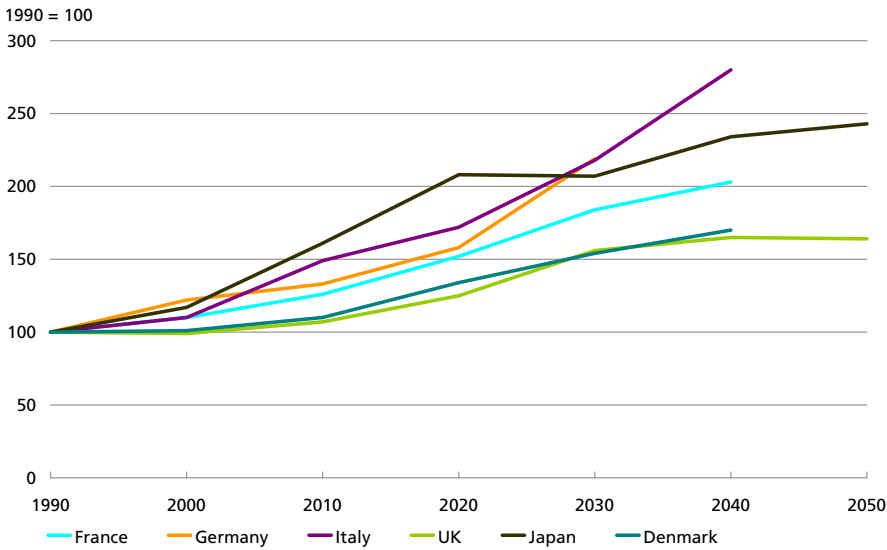
DEPENDENCY RATIO

Chart 2



DEVELOPMENT IN THE DEPENDENCY RATIO IN SELECTED COUNTRIES

Chart 3



Source: European Economy (1996) no. 3, "Aging and Pension Expenditure Prospects in the Western World".

pronounced, cf. Chart 3. The background is that while most industrialised countries have seen a drop in the fertility rate, not all have seen a revival as in Denmark's case.

Chart 3 shows only the relative development, and it must be borne in mind that the levels may differ.

The increase in the total population, together with the higher participation rate for women, has caused the labour force to increase from 2.0 million in 1950 to the current 2.8 million. However, this growth is more than offset by a strong reduction in working hours from typically 2,200 hours per year in 1950 to below 1,500 hours today, if part-time work is taken into account. The result has been a decrease by just over 10 per cent in the number of completed working hours in the economy during the last 50 years. Table 1 presents the breakdown by explanatory factors of the change in the number of completed working hours.

BREAKDOWN OF CHANGE IN NUMBER OF COMPLETED WORKING HOURS

Table 1

Per cent	1948-1999	2000-2040
Change in the number of completed working hours.....	-11	?
Of which contribution from:		
Average working hours	-40	?
Demography	22	-2
Participation rate	11	-2
Unemployment	-4	0

PROJECTION OF HOURLY PERFORMANCE IN THE ECONOMY

Statistics Denmark prepares an annual population trend forecast. The central assumptions for this forecast are the fertility rate, the mortality rate and net immigration.

The mortality rate is the most stable of these figures. However, in the most recent forecasts, apart from the latest one, expected lifetime has increased. This has aggravated the increase in the proportion of elderly people.

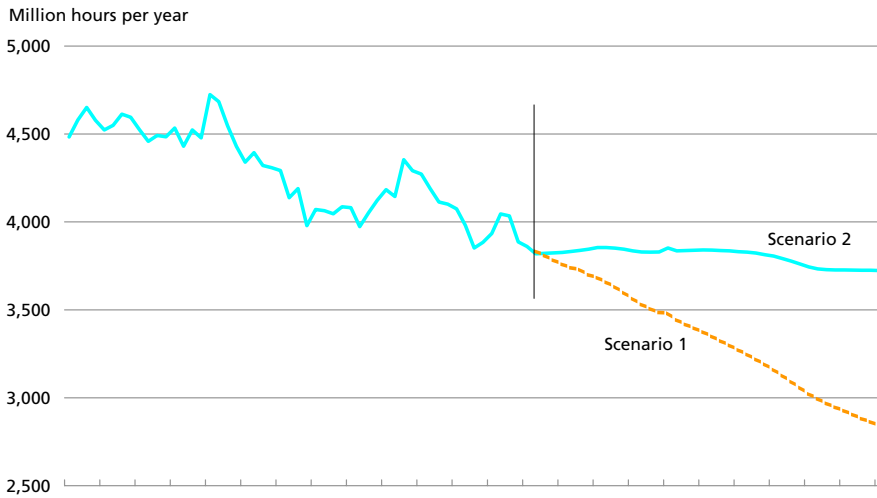
Only approximately half of the population 40 years from now has yet been born. The development in the fertility rate thus also plays a key role – and in the long term it is the decisive factor. The current problems of pressure on childcare institutions and numbers of pupils per class are to a certain extent temporary problems reflecting the demographic boom in the number of children born in the relatively high birthrate years in the first half of the 1960s.

The greatest factor of uncertainty is net immigration, which has been approximately 12,000 persons per year for a number of years, but is projected to 15,000 in Statistics Denmark's latest forecast. Viewed in relation to the number of live births in one year, i.e. currently approximately 65,000, the contribution from immigration is not insignificant. People of immigrant descent will thus account for an increasing proportion of the future basis for recruitment to the labour force.

It must be emphasised that over a span of 40 years the sensitivity of the population forecast to the central assumptions is quite significant. This can be seen from e.g. comparing Statistics Denmark's forecasts for recent years. A case in point is the considerable variation in the proportion of senior citizens in the population shown in the various forecasts.

Against the background of the population forecast from December 1999 the potential future hourly performance in the economy has been projected. In addition to the total population figure this requires estimates of the participation rate, unemployment rate and number of working hours per year per employed person. The unemployment rate is set at 5 per cent for the entire period, and the age-related participation rates are assumed to be unchanged. This gives a decline in the average participation rate by approximately 2.5 to 76, due to the shift towards more elderly people with a lower participation rate than the younger classes of the population. Among other factors the amendment of the early retirement scheme and the abolition of the transitional allowance will undoubtedly contribute to increasing the participation rates of older people in the active age groups. A counterbal-

NUMBER OF COMPLETED WORKING HOURS PER YEAR IN THE ENTIRE ECONOMY Chart 4



ancing factor is that many of the future elderly can afford to retire earlier due to their private pension savings schemes.

The greatest factor of uncertainty is the number of working hours performed per year per employed person. Two scenarios are envisaged. In the first, the number of working hours is assumed to continue to fall at the same pace as the average for the last 50 years. Total working hours thereby decline to 1,100 hours in 2040. This corresponds to e.g. a 4-day working week of 7 hours per day and 10 weeks' annual holiday, in addition to the usual public holidays. This "leisure society" is hardly a realistic projection.

The alternative is a "work scenario" which solely assumes the introduction of a 6th week of holiday entitlement and otherwise unchanged working hours. The hourly performance thereby drops by a total of 7 per cent over the next 40 years. Chart 4 presents the two scenarios.

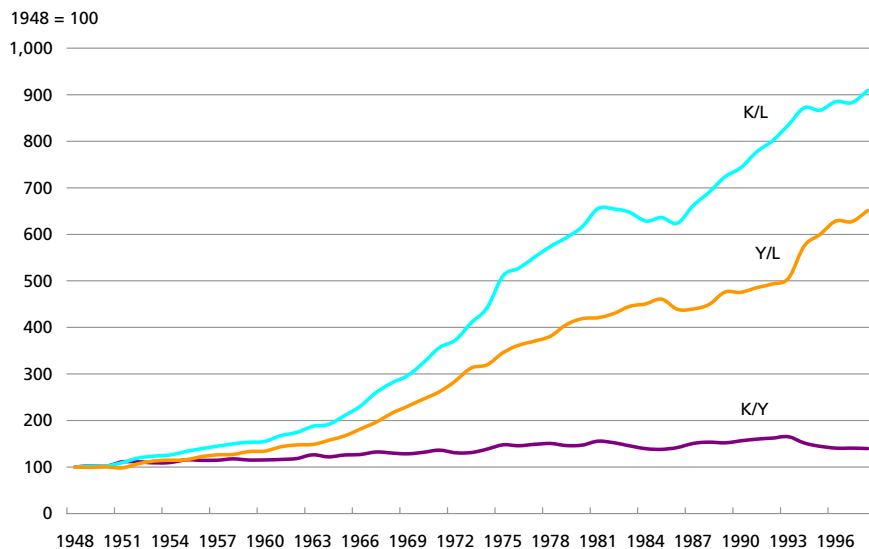
Should working hours be reduced further, it is possible that people will be more inclined than today to have two jobs, thereby dampening the decline in the supply of labour in hourly terms. This has not been taken into account in the projections.

LABOUR PERFORMANCE AND ECONOMIC GROWTH

To gain an impression of the consequences of the population trend for economic growth, the course of the last 50 years is first considered. In an

KEY RATIOS IN MANUFACTURING

Chart 5



Note: See the definitions in the Box.

analysis of economic growth applying a conventional neoclassical production function the perspective must be narrowed from the economy as a whole to e.g. the manufacturing industry, which comprises approximately 20 per cent of the economy¹. This proportion has been almost constant throughout the period.

Chart 5 shows the key ratios for the manufacturing sector, where K is the value of the capital apparatus in constant prices, Y is real GNP and L is the number of hours supplied. A strong increase can be observed in K/L (the capital/labour ratio) and Y/L (hourly productivity), while K/Y (the capital/output ratio) shows only a weak increase. This pattern is reflected in all industrialised countries and all sectors.

Table 2 shows a breakdown of growth in GNP in the manufacturing sector in constant prices, cf. the Box. The breakdown gives an impression of the direct impact of the various production factors on growth in the manufacturing industry. The annual rate of growth in GNP in constant prices in the period from 1960 to the present time was 3.0 per cent. This growth rate can be explained fully by increasing productivity as a result of technological progress and increased human capital. Hourly labour

¹ The need to reduce the perspective from the entire economy to sectoral level on applying production functions is due to such factors as the method of compiling the value of general-government output in the national accounts, i.e. as the value of input. This makes productivity calculations based on the national accounts meaningless to this sector. The separate treatment of the manufacturing, service and agricultural sectors here can be attributed to the systematic differences in productivity development among these sectors.

BREAKDOWN OF A NEOCLASSICAL PRODUCTION FUNCTION

Box

In a general production function such as $Y = F(K,L,T)$ output in constant prices (Y) is the result of the performance of the two output factors, capital in constant prices (K) and number of completed working hours (L). T is the total factor productivity, i.e. the increase in output over time which is possible with an unchanged allocation of resources, i.e. unchanged K and L. Technological progress and an increase in human capital will thus have an impact on T and not on K or L.

By restricting the function to show constant return to scale, i.e. ensuring proportionality between K,L and Y, and by the fact that technological progress is "disembodied", i.e. does not require new investments, it is possible to break down growth by the Solow method to reveal each output factor's significance to growth. The breakdown is based on the following relation, with the further assumption of profit-maximising agents and perfect competition:

$$1) \quad dY/Y = p \cdot dK/K + (1-p) \cdot dL/L + dT/T$$

Y= Real GDP

K= Capital stock in constant prices

L= Work performance in total hours per year

T= Total factor productivity as a consequence of technological progress and increase in human capital

p= Capital elasticity of output. This will be equal to the profit ratio under perfect competition with profit-maximising agents. This value is set at 0.25 here. (1-p) is the wage ratio.

d in front of a variable signifies the differential coefficient with respect of time.

Normalising equation 1) with respect to L gives the following result:

$$2) \quad dy/y = p \cdot dk/k + dT/T$$

where

y = Y/L and

k = K/L

According to 2) hourly output growth (hourly productivity) can be broken down into two components, i.e. capital deepening and (Hick's) technical progress.

performance has declined, thereby making a negative contribution to growth, which is offset by an increasing contribution from capital, however.

The table must not be interpreted to mean that investments and labour supply are of minor importance to the growth process. New investments and upgrading of the qualifications of the labour force are the very manifestations of technological progress, i.e. they are not in practice "disembodied" as defined in the Box.

BREAKDOWN OF GROWTH IN DANISH MANUFACTURING INDUSTRY				Table 2
Rate of growth, per cent p.a.	dY/Y	0.25*dK/K	0.75*dL/L	dT/T
1950-1960	3.0	1.1	0.0	1.9
1960-1970	5.3	1.7	-0.7	4.3
1970-1980	2.8	1.0	-1.9	3.7
1980-1990	1.3	0.5	0.0	0.8
1990-1999	2.6	0.3	-1.0	3.3
1960-1999	3.0	0.9	-0.9	3.0

Note: See the Box for a definition of variables. The Table shows the annual growth from the first to the last year.

Table 3 shows the corresponding breakdown of growth in hourly productivity (Y/L). As the last column shows, technological progress explains approximately three quarters of the growth in hourly productivity by an average of 4.2 per cent p.a. over the last 40 years.

The appendix gives the equivalent breakdown of growth in the agricultural and service sectors respectively. The results are hardly surprising. The agricultural sector shows stronger productivity growth than the manufacturing sector, while the growth rate for services is lower. Perhaps a more surprising feature is that the proportion of the growth in labour productivity attributable to respectively technological progress and capital deepening is almost identical for all three sectors. There is no clear trend for growth in technological progress during the reference period with regard to services and agriculture, while for the manufacturing sector technological progress appears to have been slightly lower in the last part of the period.

The breakdowns assume a constant return to scale, i.e. proportionality between increases in K,L and Y. This is only an approximation. The last 50 years have seen rationalisation of the production process, resulting in considerable economies of scale. So some of the factors registered as technological progress are in fact rationalisation gains. These gains tend to be of a more one-off nature than actual technological progress. For example, dairies can only merge once.

BREAKDOWN OF HOURLY PRODUCTIVITY, MANUFACTURING				Table 3
Rate of growth, per cent p.a.	dy/y	0.25*dK/k	dT/T	Per cent
1950-1960	3.2	1.3	1.9	59
1960-1970	6.2	1.9	4.3	69
1970-1980	5.3	1.6	3.7	70
1980-1990	1.3	0.5	0.8	63
1990-1999	3.9	0.6	3.3	85
1960-1999	4.2	1.2	3.0	71

Note: The last column shows the share of growth in hourly productivity attributable to technological progress.

PROJECTION OF ECONOMIC GROWTH, ENTIRE ECONOMY				Table 4
Rate of growth, per cent p.a.	dY/Y	0.25*dK/K	0.75*dL/L	dT/T
1999-2040 I	1.6	0.5	-0.9	2.0
1999-2040 II	2.4	0.5	-0.1	2.0

The capital accumulation, K in the production function, depends on the actual savings in the economy if the balance of payments as a proportion of output is relatively unchanged. The tendency towards an ageing population will normally reduce the savings in the economy. Private savings will decline since the number in the 30-60 age class will decrease. This age class accounts for the predominant share of savings, while people over 60 typically draw on their savings, in accordance with the usual life-cycle hypothesis. At the same time, the elderly require more care than younger people. This imposes upward pressure on general-government expenditure, while all other things being equal general-government savings are depleted. Since all industrialised countries experience the same trend of an ageing population, and lower savings are thus an international phenomenon, this can push up real interest rates. The investment level will thereby be reduced, as will the accumulation of capital, with potential adverse consequences for the development in productivity and ultimately also for economic growth.

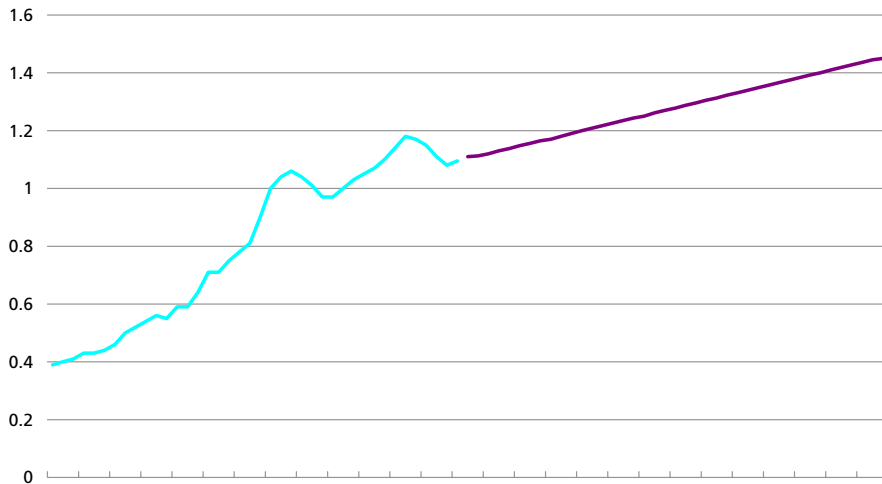
The above analysis can be used to gain a rough estimate of future growth in each of the two scenarios in Chart 4. Even with conservative assumptions of capital accumulation, labour supply and productivity it is realistic to expect at least a doubling of the real gross national product over the next 40 years. With an annual growth rate of 2.0 per cent it would double after 35 years. A number of new techniques which are still at the development stage in areas such as genetic engineering technology and IT have the potential to generate even stronger growth far beyond this estimate. The source of concern regarding the demographic development is thus not related to economic growth in general. The problem lies elsewhere.

GROWTH, DEMOGRAPHY AND GENERAL-GOVERNMENT FINANCES

In Denmark the development in transfer incomes and salaries in the public sector mirrors the growth in wages in the private sector. As a result, productivity gains in the private sector benefit the entire population, and increasing inequalities between the various groups are avoided. However, a consequence is that economic growth in itself does

FINANCING RATIO

Chart 6



Note: The financing ratio is defined as the number of employees in the general-government sector plus the number of transfer-income recipients, divided by the number of employees in the private sector.

not solve the general-government sector's problem of financing the growing dependency ratio. The central issue in relation to the demographic development is thus a problem of redistribution, rather than a problem related to the general economic growth.

The Ministry of Finance defines the "financing ratio" as the number of employees in the general-government sector plus the number of recipients of transfer income as a ratio of the number of employees in the private sector. If the budget is in balance, this ratio will be in close correlation with the taxation burden for as long as user charges are negligible. The financing ratio, and thereby the proportion of GDP to be redistributed via taxes, has risen considerably since 1960, cf. Chart 6, and in all probability is likely to increase further in the coming decades. The chart shows the possible course in consideration of the demographic trend. This is far from a "worst case" scenario, but rather the opposite. If working hours are reduced further, and if the public sector is compensated fully or partly with additional employees, the increase in the financing ratio will be significantly higher.

A defect of this definition of the financing ratio is that interest payments on the government debt are disregarded. Today, government expenditure is subject to extraordinary pressure as a consequence of the fact that while the large birth cohorts were active in the labour market, the central government increased its debt instead of consolidating its

finances. The current government budget surplus should be maintained in order to reduce the future demography-related problems affecting government finances.

There are several alternatives to increasing the taxation burden in order to finance the increased dependency ratio: a reduction or complete repayment of the government debt will increase the scope for manoeuvre of government budgets at a given taxation burden, due to reduced interest and instalment payments. The same will be the case if the number of transfer-income recipients in the active age groups can be reduced, thereby increasing the age-related participation rates. For the older age groups this can also be achieved by raising the retirement age. Finally, productivity increases in the general-government sector will ease the pressure on sources of financing. In selected areas increased user charges can reduce people's demand for public services and thereby dampen the taxation burden.

A general reduction of working hours which, as stated, is not taken into account in Chart 6, will at most influence the financing ratio in one of two ways: either a corresponding reduction in the number of completed working hours in the general-government sector, leaving the expenditure and taxation burdens unchanged, but giving a lower service level; or the general-government sector is compensated by increasing the number of employees, so that the service level remains unchanged, but the expenditure and taxation burdens are increased. A further reduction of working hours thus exacerbates the dilemma between the level of public service and the taxation burden, and might also jeopardise the private sector's opportunities to recruit qualified labour, with wage inflation as a consequence.

In conclusion, a key challenge of the coming decades is to make the population understand that it is necessary to reduce expectations of a continued reduction of working hours if the levels of material affluence and of public service are to be maintained. The individual's choice between remaining in the labour market or retiring, and the more collective choice of working hours per year, have far-reaching consequences for the economy and for the taxation burden. It is not just a question of exchanging private consumption for more leisure, or providing a job for an unemployed person. In this perspective it is advisable that people be encouraged to remain in the labour market for longer. A declining supply of labour has vital socio-economic implications, particularly in the Danish system of predominantly taxation-financed public services, since the taxation base is hereby eroded.

APPENDIX

Breakdown of growth and hourly productivity in the agricultural and service sectors.

BREAKDOWN OF GROWTH IN THE AGRICULTURAL SECTOR Table 5

Rate of growth, per cent p.a.	dY/Y	0.25*dK/K	0.75*dL/L	dT/T
1950-1960	2.4	0.4	-1.6	3.6
1960-1970	2.0	0.7	-4.0	5.3
1970-1980	0.7	0.8	-3.5	3.4
1980-1990	4.0	-0.1	-2.5	6.6
1990-1999	2.4	-0.1	-2.4	4.9
1960-1999	2.1	1.3	-4.4	5.2

BREAKDOWN OF HOURLY PRODUCTIVITY, AGRICULTURE Table 6

Rate of growth, per cent p.a.	dy/y	0.25*dk/k	dT/T	Per cent
1950-1960	4.6	1.0	3.6	78
1960-1970	7.4	2.1	5.3	72
1970-1980	5.4	2.0	3.4	63
1980-1990	7.3	0.7	6.6	90
1990-1999	5.7	0.8	4.9	86
1960-1999	6.7	1.5	5.2	78

BREAKDOWN OF GROWTH IN THE SERVICE SECTOR Table 7

Rate of growth, per cent p.a.	dY/Y	0.25*dK/K	0.75*dL/L	dT/T
1950-1960	3.3	1.1	0.1	2.1
1960-1970	3.6	1.1	0.0	2.5
1970-1980	1.7	0.7	-0.7	1.7
1980-1990	2.8	0.6	0.4	1.8
1990-1999	2.9	0.5	0.3	2.1
1960-1999	3.0	0.8	0.0	2.2

BREAKDOWN OF HOURLY PRODUCTIVITY, SERVICE SECTOR Table 8

Rate of growth, per cent p.a.	dy/y	0.25*dk/k	dT/T	Per cent
1950-1960	3.1	1.0	2.1	68
1960-1970	3.6	1.1	2.5	69
1970-1980	2.6	0.9	1.7	65
1980-1990	2.3	0.5	1.8	78
1990-1999	2.5	0.4	2.1	84
1960-1999	3.0	0.8	2.2	73

The Euro and Denmark

*Speech by Bodil Nyboe Andersen to the British Import Union
on 18 January 2000*

THE BACKGROUND TO THE ECONOMIC AND MONETARY UNION

On 1 January 1999 11 EU member states introduced the euro as the single currency. The euro has thus been in force for one year now, but not yet as notes and coins.

The EU took many years to reach this stage. The idea of a single currency was fostered by the original idea of the Common Market, as it was called in 1957. The idea was quite simply to create a large domestic European market to enhance growth and progress in Europe.

First customs and trade restrictions between the participating countries were abolished. This in itself was an important step in post-war Europe.

In the 1980s it was the turn of the technical barriers to trade. The implementation of the single market spurred the harmonisation of the authorities' product requirements. Although these requirements were often founded on health or safety considerations they could in practice also constitute barriers to trade.

All that was still needed to complete a domestic European market, a "common market", was the introduction of a single currency.

The idea of a single currency, in a currency union, was already put forward in the 1970s, but never came about. However, the mid-1980s saw a more favourable political climate for the idea. The Delors Committee was established in 1988. Besides the Chairman, Jacques Delors, the Committee comprised a few experts, as well as all central-bank governors of the EC, as it was then.

The Committee prepared a draft structure for a European currency union. It can probably be credited to the central-bank governors that so much importance was attached to the issue of the independence of the common central bank from the political authorities, and that the ECB's objective to maintain price stability was set out with such clarity.

The ECB was modelled primarily on the German Bundesbank. The Bundesbank has always been independent of political influence, whereas the political authorities exerted considerable influence on monetary policy in many other countries in the 1980s, even the EU

member states. Today, central-bank independence and price stability are widespread objectives all over the world.

The proposal of the Delors Committee of 1989 formed the basis for the provisions on economic and monetary union of the Maastricht Treaty.

The fact that it was the central-bank governors who designed the model is probably also of significance to the considerable loyalty to these plans demonstrated by the EU central banks during the 1990s.

A few years ago, not many people expected 11 EU member states to be ready to introduce the euro by 1999. That so many member states qualified for participation after making the necessary adjustments to their economic policies proves the strong political motivation to achieve this project.

THE FIRST YEAR OF THE EURO

One year has passed since the euro was introduced and how can its brief history be accounted for today?

First and foremost, the euro immediately took its place as one of the world's three major currencies, together with the dollar and the yen.

The single money market denominated in euro functioned well right from the start in January and the technical transition progressed without major problems. This was important in view of the very large scale of the project and because market participants had to adjust to the new environment.

The currency market operates in euro, rather than the previous national currencies which were replaced by the euro.

The euro has also gained a strong foothold in the international capital market. It now competes with the dollar for the position of most frequently used currency for bond loans.

The single monetary policy of the 11 member states has now been in place for one year. The same short-term interest rate applies in all the participating member states, irrespective of their cyclical position in relation to the average of the euro area member states.

For many of the participants, i.e. the countries which by longstanding tradition have a fixed-exchange-rate policy based on the D-mark, this is business as usual. Like Denmark, France, the Benelux countries and Austria have for years pursued an interest-rate policy closely in line with Germany's. These countries are therefore accustomed to using other aspects of economic policy for domestic cyclical stabilisation. Their economic-policy situation after the introduction of the single currency and the single monetary policy has therefore not changed all that much,

except that their central-bank governors now share influence on the fixing of interest rates.

The countries facing a new situation are particularly the southern European member states who by tradition have experienced a more inflationary economic course. These member states have become more stability-oriented. With broadbased popular support, they have set out to participate in the currency union in order to create the framework for more stable economic development.

A central issue over the last 12 months has been whether the euro will be a strong or weak currency. However, it has not always been clearly defined what is actually meant by a strong currency.

The Maastricht Treaty emphasises that the euro must be a strong currency in the sense that it must be a low-inflation currency whose purchasing power is not undermined by inflation. The D-mark was a success during its 50-year history because prices were more stable in Germany than in most other countries, while at the same time Germany enjoyed strong economic growth. This led the D-mark to be perceived as a strong currency, which it was, regardless of whether the exchange rate was almost 3 D-marks to the dollar as in 1985, or only 1½ as in 1995.

The concept of the euro as a strong currency is drawn from experience with the D-mark. For an economic area as large as the euro area, the strength of the currency must be measured inwards to an even greater extent than for the D-mark. The ECB has therefore been given the task of maintaining price stability, which in practice has been interpreted to entail an inflation rate of less than 2 per cent.

On the other hand, the ECB is not to conduct monetary policy to influence the rate of the euro against the dollar, nor is the Federal Reserve to conduct monetary policy to steer the dollar's price against the euro.

Since economic trends in the various regions of the world differ the major currencies fluctuate considerably against each other. This has always been the case, and will also be so in the future. However, perhaps because the euro is a new currency, there has been unjustified focus on its price in relation to the dollar.

Newspaper comment often highlights the fact that the euro is not yet used extensively. This is correct with regard to accounts, price lists, invoices, etc. where amounts are stated only in euro. We are still in a transition phase where the old national currencies are still the usual means of payment. During this period people naturally also prefer to use the old national currencies instead of the euro for money transfers and price fixing.

The euro and the old national currencies are in fact the same currency – it is just a matter of multiplying by a constant. There is no exchange

rate between the French franc and euro, or between the Dutch guilder and D-mark, but rather a conversion rate between various denominations of the same currency, the euro.

People do not change their behaviour overnight, especially if the real outcome is of little importance, so many show that old habits die hard by continuing to state amounts in the old currencies. But when the euro-denominated notes and coins are introduced in two years' time the old national currencies will lose their importance and the euro will take over completely. For a certain period thereafter prices in euro will probably be supplemented with information on prices in the old currencies.

I have already mentioned that from its birth the euro was perceived as one of the world's three major currencies. It is not a main goal for the ECB to make the euro an international currency used all over the world, like the dollar. However, due to the euro area's economic significance there is no doubt that gradually this will happen. A large number of international bond issues are in euro, and the euro is part of the foreign-exchange reserves of many countries. In Denmark it is the dominating reserve currency, although many central banks by tradition mainly hold dollars. There will probably be a gradual trend towards using the euro as a reserve currency.

The dollar dominates as the currency used on international commodities exchanges and the euro is hardly likely to gain a footing in this area for some time.

THE EUROPEAN CENTRAL BANK

The first year of the euro has really drawn the media's attention to the European Central Bank. It has become quite clear that the ECB's independence is an issue to be championed, and most politicians appear to accept this independence. The vital aspect is that no attempt is made to exert political pressure on the ECB or the members of its Governing Council, nor should attempts be made to reach agreements on the overall economic policy which also involve monetary policy. A politician who puts forward an opinion on a suitable level of interest or exchange rates is hardly infringing the central bank's independence. Indeed, the central banks also make pronouncements on areas of economic policy for which they are not responsible.

The ECB has been criticised for a lack of openness and I find this criticism to be unfounded. In its Monthly Bulletin the ECB publishes very detailed analyses of economic and monetary trends and also presents the detailed background to its interest-rate decisions immediately after its meetings. Unfortunately, the general public has seemed to be more

interested in hearing who said what, even though the decisions should be judged on the basis of the arguments put forward, rather than the people behind them.

DENMARK AND THE EURO

Denmark has decided not to join the currency union, but to retain the krone. This decision was taken in 1992-1993, but nonetheless Denmark has endeavoured to fulfil the access requirements or convergence criteria. This is not in order to become a member, but because Denmark considers this to be an endorsement of a sound economic policy, and since this is a condition for maintaining our chosen exchange-rate policy in the longer term.

Denmark has chosen to continue to conduct a fixed-exchange-rate policy, as has been the case since 1982. There is broad-based political agreement that this policy has contributed to ensuring a favourable and stable course for the economy. We have therefore joined ERMII, which replaced the EMS after the introduction of the euro. The ERMII system operates with a normal fluctuation band of +/- 15 per cent against the central parity. However, in view of its favourable convergence position Denmark opted for, and gained, a special agreement on a narrower band of +/- 2¼ per cent.

The Danish situation can best be described as shadowing the euro with regard to economic policy and exchange rate. Even though via ERMII we have an agreement on marginal intervention with the ECB, this support is only short-term. It is Denmark's responsibility alone to pursue an economic policy which ensures that we can maintain a stable krone rate vis-à-vis the euro.

Our economic policy must be designed to ensure that our course does not deviate excessively from that of the euro area member states. Our monetary policy can be used solely to stabilise the exchange rate. This entails that when the currency markets are stable Denmark's Nationalbank fixes a short-term interest rate slightly above the euro interest rate, so that our interest rate is adjusted in step with the ECB's. In times of currency unrest Denmark's Nationalbank has to raise the short-term interest rates in order to make placements in Danish kroner more attractive. This was most recently the case almost 1½ years ago during the currency unrest in September 1998.

Long-term yields are formed in the market. The yield differential fluctuates considerably over time and is also affected by periods of currency unrest. The Danish 10-year government-bond yield is currently around 1/3 per cent above the equivalent German yield.

CONSEQUENCES OF OPTING OUT

This yield differential is often used uncritically as a measure of the costs of remaining outside the euro. But this is incorrect. Even if we joined the euro area, the spread between Danish and German government-bond yields would not be eliminated. German government bonds are issued in very large series. These benchmark bonds are more attractive for international investors than Danish government bonds could ever be. It can also be seen that e.g. Dutch government bonds command a yield premium of around 15 basis points compared to German yields. So even though membership would reduce the Danish yield differential from today's level, it will hardly disappear entirely.

On the other hand, today's yield differential is to a great extent affected by the expectation that Denmark will adopt the euro within a few years. If this takes longer, or if the euro is rejected by referendum, there is no doubt that the yield differential will widen from the present level.

So it is not possible to state exactly what the interest cost margin between a "yes" and a "no" vote would be.

Our current situation entails a number of other consequences besides the yield differential.

First and foremost, the vulnerability which is a consequence of having a small currency which shadows a larger currency. Even if we take great care to fulfil at least the same economic-policy requirements as the euro area member states, the krone can become subject to speculative pressure. Even though we ourselves may consider it unreasonable and unfounded, these are the rules of the game for our participation in international trade and in financial markets.

So – even with a sound economy – we might be obliged to raise interest rates substantially should the currency come under attack. We might even be forced to go further and introduce other measures to tighten economic policy in the event of sustained pressure against the krone.

Once a certain period of time has elapsed after a currency crisis there is a tendency to forget that this vulnerability is a basic condition in a situation where a fixed exchange rate is to be maintained, while still leaving a formal back door open for realignment. This is not because there is any question of using this back door to devalue, but simply because the definition of an independent currency is that the exchange rate can be adjusted.

This issue is not only of relevance to Denmark. All over the world, exchange-rate policy is discussed. It is widely suggested that the alternative to even small currencies having floating exchange rates is that the

major currencies become even more dominant. The formation of the euro is one example of this.

Another example is the concept of "dollarisation" which is gaining strength in the debate. This term was formerly used to designate the extensive use of the dollar as an alternative to the official currency in countries burdened by high inflation. Today, "dollarisation" is also used to describe the phenomenon of a country to ensure stability giving up its own currency in favour of the dollar, but without gaining any influence on the monetary policy of the USA.

Perhaps at some time in the future we will see "eurorisation", i.e. certain European countries officially deciding to use the euro without gaining influence, i.e. without becoming members of the currency union. This idea was recently discussed in Estonia.

The final issue is the political marginalisation within the EU experienced by Denmark after the introduction of the euro. This gains in significance the longer we remain outside. It is not just a question of voting rights at certain meetings, but is also related to receiving information on international trends and the plans for international cooperation. To a great degree, this is also a question of influencing the course of events by participating in committees and working groups and other fora which prepare the formal decisions. But it is even more difficult to quantify these effects.

Besides the three aforementioned factors: yield differential, vulnerability and marginalisation, the consequences of membership for the business community must also be considered. It is sought to minimise the disadvantages of opting out via the fixed-exchange-rate policy. However, even though the exchange rate between euro and krone is very stable, the euro is not the domestic currency of Danish companies, as is the case for their European competitors, who gain a share of the major domestic European market.

It cannot be excluded either that companies within the euro area will prefer to trade with other companies within the area, since this will require less administration than trading with companies in e.g. Denmark. Within the euro area the costs of exchange-rate hedging and conversion can be saved and companies and private citizens alike can compare prices more easily. Many small companies in particular will prefer to focus on their customers and products and not have to worry about exchange-rate issues.

These factors are very different. This makes it even more difficult to make an overall estimate of the "cost of opting out", a much-debated issue. It cannot be calculated in terms of money or jobs. However, today there is a price, and if we decide to opt out permanently it can only go

up. However, weighing the various arguments is a political, rather than an economic decision.

THE VIEWPOINT OF DANMARKS NATIONALBANK

The central banks of the euro area member states are without any doubt the institutions which are most affected by the transition to the euro. If Denmark decides to join, this will also result in major changes for Danmarks Nationalbank. This has led some people to believe that the bank's management is sceptical, or even negative towards possible Danish adoption of the euro. It has been stated that we would probably not be in favour of losing influence and becoming "branch managers". However, this is not our view.

We will not consider Denmark's adoption of the single currency to be a reduction, but rather an expansion of our opportunities to gain information and influence. Except during currency crises, when we have to raise interest rates in order to stabilise the krone and then gradually bring interest rates back to normal, in the present situation we do not conduct a separate monetary policy.

By participating in the ECB Danmarks Nationalbank's management and employees will gain a share of influence not only on monetary policy, but also on many other decisions concerning the financial markets of Europe. At the same time we will continue our ordinary co-operation with Danish banks and other financial institutions and remain in contact with Danish authorities and the media. We will also still have to manufacture and issue notes and coins, even though their appearance will be different.

We therefore do not feel that Danmarks Nationalbank will lose influence if Denmark adopts the euro, quite the contrary in fact. Within the ECB all participating countries' representatives are equal and all votes have the same weight.

The key argument in favour of Denmark adopting the euro within the not too distant future is, however, not the issue of the Nationalbank's role and influence. The Nationalbank's management considers this step to be important, since in our view it will provide the most stable external framework for the economic policy which Denmark embarked on in the 1980s, a policy which Danmarks Nationalbank has always supported. Especially in the 1990s this policy formed the basis for strong and well-balanced economic growth.

The Danish economy has benefited from our abandoning the devaluation policy at the beginning of the 1980s and from the fact that the fixed-exchange-rate policy has been maintained, despite a change in the

external framework. But we must also recognise that minor currencies are becoming more and more vulnerable in a world characterised by greater internationalisation and more rapid dissemination of information.

So Danmarks Nationalbank considers that Denmark's adoption of the euro will be a natural continuation of the economic-policy stance introduced almost two decades ago – a policy which in our view has served Denmark well.

Speech by Governor Bodil Nyboe Andersen at the Annual Meeting of the Danish Bankers Association on 1 December 1999

Denmark has enjoyed a number of years of strong growth. This has led to falling unemployment and rising inflation, and for a transition period also a significant current-account deficit. In 1997 and 1998 there was general consensus on the need to ensure a soft landing.

Via the Whitsun package of economic measures the government sought to brake consumption in order to avoid overheating, bottlenecks and a current-account deficit. The Whitsun-package measures did not have an impact as quickly as could have been desired, but there is every indication that this year the course of the economy has become stable. Growth has subsided and the balance of payments has improved significantly, while wage increases and inflation are still rather high measured by European standards. It is no longer taken for granted that Denmark complies with the convergence criterion for inflation. At present, we only just fulfil this criterion. It is important that there is broadbased understanding in Denmark that we cannot for a prolonged period have higher wage and price increases than the euro-area member states.

The sound and favourable development in Denmark has, moreover, been rewarded with upgrading to the highest rating, Aaa, by the American rating agency Moody's.

When ministers and central-bank governors sum up a year of favourable cyclical development and minor losses in their speeches to banking circles, they often conclude with a reminder that it is in the good times that the seeds of future problems are sown. This lesson can also be applied to the national economy. Thus, a tight fiscal policy is still needed in coming years, even though the good times have restored surplus to government finances.

There is, as stated, every indication that we are approaching the soft landing we required. It is therefore important to bear in mind when evaluating the economic forecasts put forward by various circles in Denmark and abroad that the expected development must be considered against the background of the slightly too excessive growth we have seen.

There is no reason to be concerned that our growth is dampening and is expected to be lower than in most other European countries. This is a necessity if we are to ensure economic balance, and this is the course we have wished to achieve. So it is quite misleading for a recent newspaper article to describe Denmark's economic prospects as a low-growth trap.

In contrast to 1998, which was affected by several periods of currency unrest, 1999 was an undramatic year in monetary-policy terms. During this year the krone has been extremely stable against the euro. In the course of the year the Nationalbank has gradually reduced the spread between its lending rate and the official interest rate of the European Central Bank, ECB. The spread was 0.95 per cent at the start of the year and is now down to 0.30 per cent.

Moreover, the Nationalbank followed suit when the ECB lowered the interest rate in April and raised it at the beginning of November. This is a consequence of the division of work adopted for economic policy whereby the task of monetary policy is to stabilise the krone vis-à-vis the euro.

This division of labour has functioned well in Denmark for many years. The stable exchange rate and low inflation have been significant to the positive course of the Danish economy in the 1990s.

In the fortunately very rare cases where the currency situation obliges us to tighten monetary policy the interest-rate increases have especially affected capital movements and the money market, and to some degree the banks' interest rates. However, private households have only been affected by these interest-rate adjustments to a moderate degree since home financing has primarily been extended via long-term fixed-yield mortgage-credit loans.

In recent years the short-term interest rates have been significantly lower than the long-term rates and therefore mortgage-credit loans at variable interest rates, called interest-adjustment loans or flex loans, have become quite popular. So far, the outstanding loans at variable interest rates constitute only 5 per cent of total mortgage-credit loans. However, a large proportion of lending by the mortgage-credit institutes is currently extended at variable interest rates. So the overall picture can shift very quickly.

The changes in 1-2 year interest rates have been very modest in recent years. However, in earlier periods, even when inflation was low, we have seen very strong fluctuations in the short-term interest rates. It is therefore important that home owners are aware of the risk of rising interest rates when they raise mortgage-credit loans at floating interest rates. International interest rates may rise, and furthermore the Nationalbank

may be obliged to raise interest rates significantly in order to counter speculative pressure against the krone. In such situations it is not possible to take into consideration that private home owners will also be affected.

In June the Nationalbank adjusted the monetary-policy instruments. Lending from the Nationalbank is now extended against collateral of government and mortgage-credit bonds, and not via repo transactions in government bonds as before. This adjustment expanded the lending basis significantly.

Moreover, the monetary-policy counterparties, i.e. those credit institutes which may borrow from and make placements with the Nationalbank, were expanded to include both banks and mortgage-credit institutes.

In connection with this change certain limits were imposed on the individual banks' current-account deposits. However, this limit is only effective if the banks overall exceed the limit of just under kr. 20 billion. In normal circumstances the limits are of no significance. Their purpose is to limit the use of current-account deposits to speculate in changes in exchange rates or interest rates.

The system came under some pressure when the spread between the current-account interest rate and the interest rate for certificates of deposit was as low as 0.10 per cent for a few months. After the adjustment of interest rates at the beginning of November this spread widened.

I would like to take this opportunity to emphasise that the Danish system requires the Nationalbank's monetary-policy counterparties to be prepared to cooperate on the flexible functioning of this system.

Almost one year has passed since the introduction of the euro and it has immediately taken its place as one of the three dominating global currencies.

There has been enormous interest in the European Central Bank and its monetary policy, and this has been natural in view of the great importance of the euro. The task of the ECB is to ensure price stability, defined as price increases of less than 2 per cent. The ECB has formulated its monetary-policy strategy as two pillars. The first pillar is the development in money supply and the second is the development in a large number of financial and other economic indicators of significance to the future development in prices.

In view of the complex monetary-policy strategy the ECB has found it appropriate to issue a monthly bulletin with very detailed reports on the development in the relevant economic variables. This monthly bulletin is translated into all the official languages of the EU. Information is also given via press releases, press conferences and speeches. The ECB's in-

formation on the development and the basis for its decisions fully matches the information provided by the central banks which, with some delay, publish minutes of meetings in order to describe the background to the decisions taken. Nonetheless, the ECB is criticised for a lack of openness since it does not also report how each member of the Governing Council voted.

The ECB does not wish to give this information since pursuant to the Treaty the Governing Council is a collegiate body which arrives at a common decision on the basis of discussion among the members. The individual members are required to evaluate the economic development in the entire euro area and on that basis determine the common monetary policy.

However, society – in practice the media – takes a great interest in the individuals and how they vote. This is good material and to dramatise matters further ornithological designations are given to central-bank figures. The members are characterised as respectively doves and hawks, depending on how eager they are to raise interest rates.

This may have a certain entertainment value, but it does tend to draw interest away from the issue at hand, namely the basis for the decision taken. In view of the 17 members and 11 nationalities represented on the ECB's Governing Council it would seem reasonable to maintain the principle of a council which takes decisions collectively and publishes its grounds as one single entity.

I would like to close with a few remarks concerning the millennium roll-over which has made it necessary to make extensive adjustments to computer systems all over the world. In Denmark, each financial institution has tested its own programs, and so has the Nationalbank of course.

The interrelations between the systems have also been tested via the sector test. After this extensive process the sector finds that the transition will not impose any significant problems.

However, in certain countries myths have arisen concerning various strange phenomena which will come into play at the millennium roll-over. One of these myths is that customers' balances with banks and savings banks will disappear. Unfortunately, this myth has also spread to Denmark. I would like to warn people most emphatically against carrying out unusual financial transactions, for example withdrawal of large amounts of cash, on the basis of this myth.

As already mentioned, the systems have already undergone extensive testing to ensure a smooth transition.

However, should one of the systems still break down in the days up to the millennium roll-over, or just after, people's balances will not just

vanish, nor should customers with bank debts be under any illusions as to whether they will disappear.

There is always extensive back-up material to ensure that any computer run which for one reason or another has failed can be reconstructed.

We have all at some time found a cash dispenser to be out of order, and we have all visited our local branch and discovered that the system was off-line. The solution we choose is to find another cash dispenser or branch or to wait a few hours or days and then try again. But we would never even imagine that the system's breakdown would cause our balance to disappear.

Note circulation is always extremely high around New Year. This year the Nationalbank has extra large stocks of used notes because withdrawn notes in the old series have not yet been destroyed. Nonetheless, the Nationalbank would like to warn people strongly against beginning to stock up banknotes for the New Year, since this will merely increase the risk of robberies and burglaries.

Turnover on the financial markets is often very low around New Year, which can lead to exaggerated interest-rate fluctuations. To ensure a stable money-market interest rate in the period around New Year, as an extraordinary measure the Nationalbank will give access for both purchase and sale of certificates of deposit just before and just after New Year.

As tradition dictates, I would like to conclude by acknowledging the fine spirit of cooperation which has prevailed between the Nationalbank and the Danish Bankers Association and its members. This year I would like to emphasise in particular the current cooperation on a number of new projects. These concern the development of systems for payment transactions, the adjustments to the monetary-policy instruments and to the payments statistics, as well as the establishment of the new MFI statistics. Moreover, the cash-supply system is being restructured. All of these areas have required and will continue to require dialogue between the Nationalbank, the Danish Bankers Association and the banks' representatives.

In addition to the major projects a process is under way to expand the ongoing contact between employees at all levels at the Nationalbank and within the financial sector. We find this to be of great benefit to both parties involved.

Press release

ON 3 FEBRUARY ON INTEREST RATE INCREASE

The discount rate is raised by 0.25 per cent to 3.25 per cent. Likewise the rate of interest on the banks' current accounts with the Nationalbank is raised by 0.25 per cent to 3.25 per cent. The Nationalbank's lending rate and the rate of interest on certificates of deposit are raised by 0.30 per cent to 3.60 per cent. The increase will have effect as from 4 February 2000.

The interest rate increase should be viewed against the background of the European Central Bank's raising of interest rates.

For further information please contact Bjarne Skafte on tel.: (+45) 33 63 60 21.

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Danmarks Nationalbank's Statistical Publications

Symbols and Sources

0 Magnitude nil or less than one half of unit employed.

... Data not available or of negligible interest.

Some of the most recent statistics can 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: 17 March 2000.

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 1-6, 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 7-11, apart from the exchange-rate series in Table 9, for which Danmarks Nationalbank is the source.

INTEREST RATES AND SHARE-PRICE INDEX

Table 1

Effective end-of-year/ from	The Nationalbank's interest rates		End of period	Inter-bank interest rate, 3-months uncollateralized	Bond yields		The Copenhagen Stock Exchange share-price index (total)
	Discount rate	Lending and certificates of deposit			10-year central-government bond	30-year mortgage-credit bond	
							1.1.83 =100
1995	4.25	4.60	1995	4.65	7.23	8.36	366
1996	3.25	3.50	1996	3.57	6.52	7.87	472
1997	3.50	3.75	1997	3.93	5.63	7.28	676
1998	3.50	3.95	1998	4.05	4.35	7.10	639
1999	3.00	3.30	1999	3.57	5.64	7.31	768
Apr. 9, 1999	2.75	2.90	1999 Feb.....	3.50	4.42	7.08	609
Jun. 17, 1999	2.75	2.85	Sep.....	3.27	5.62	7.52	677
Nov. 5, 1999	3.00	3.30	Oct.....	3.70	5.63	7.42	687
Feb. 4, 2000	3.25	3.60	Nov.....	3.74	5.57	7.40	745
	|	|	Dec.....	3.57	5.64	7.31	768
			2000 Jan.....	3.70	5.91	7.43	777
March 17, 2000	3.50	3.85	Feb.....	4.13	5.82	7.30	809

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			
1995	63.6	34.7	38.8	33.6	1.9	44.0	-8.5
1996	85.2	36.6	35.0	30.6	15.2	33.7	12.1
1997	129.7	38.7	34.0	52.1	18.0	19.8	50.3
1998	101.4	41.0	37.1	34.2	12.4	29.6	17.0
1999	165.3	46.4	39.7	99.4	5.9	33.0	72.4
1999 Feb	127.0	38.8	59.0	40.3	3.3	26.2	17.3
Sep	168.6	40.4	70.7	50.2	19.6	22.2	47.7
Oct.....	166.3	40.5	64.1	55.6	16.6	21.4	50.8
Nov.....	167.9	42.0	55.4	70.8	13.6	24.5	59.9
Dec.....	165.7	46.4	36.5	99.4	6.0	33.0	72.4
2000 Jan.....	148.6	41.6	47.6	67.3	6.9	27.4	46.8
Feb	141.4	41.2	38.5	61.1	15.9	27.3	49.7

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 Nationalbank	The Nationalbank's net bond purchases	Other factors	The banks' and the mortgage-credit institutes' net position with the Nationalbank	
	Domestic gross financing requirement	Sales of domestic central-government securities	Liquidity effect				Change in net position	End of period
	Kr. billion							
1995	138.8	137.2	1.6	32.9	-7.2	-8.4	18.9	-8.5
1996	94.7	96.0	-1.2	25.9	-0.1	-3.9	20.6	12.1
1997	73.8	73.0	0.8	43.2	-1.5	-4.3	38.2	50.3
1998	64.1	68.0	-3.8	-28.7	3.2	-4.0	-33.2	17.0
1999	67.9	68.8	-0.9	62.7	1.9	-8.3	55.3	72.4
1999 Feb.....	-15.8	3.3	-19.2	10.8	0.7	0.0	-7.7	17.3
Sep.....	1.9	9.9	-7.9	4.1	0.4	0.9	-2.6	47.7
Oct.....	12.1	7.9	4.2	0.1	0.2	-1.4	3.1	50.8
Nov.....	3.8	-5.8	9.7	0.7	0.8	-2.1	9.1	59.9
Dec.....	20.3	4.1	16.2	0.4	-1.4	-2.7	12.5	72.4
2000 Jan.....	-0.9	14.6	-15.5	-12.7	0.5	2.2	-25.6	46.8
Feb.....	8.0	-0.3	8.2	-6.3	0.5	0.4	2.9	49.7

SELECTED ITEMS FROM THE FINANCIAL INSTITUTIONS' BALANCE SHEET,
AND THE MONEY STOCK

Table 4

End of period	Mortgage-credit institutes		The banks					Money stock
	Domestic lending		Domestic lending		Residents' deposits		Holdings of domestic bonds	
	Total	of which: Owner-occupied dwellings	Total	of which: Private individuals	Total	of which: Private individuals		
		Kr. billion						
1995	783.2	399.4	286.7	114.8	491.4	164.3	176.8	410.1
1996	828.4	434.1	302.7	122.3	527.8	172.8	181.0	439.8
1997	888.2	481.3	330.1	131.1	556.5	185.6	174.9	462.6
1998	968.7	539.3	373.4	141.3	573.3	195.1	199.3	476.7
1999	1,032.2	582.7	392.2	145.8	595.6	194.1	185.8	496.0
1999 Feb	992.4	552.5	377.6	140.2	589.2	205.0	194.3	493.5
Sep	1,028.3	576.8	393.9	144.1	591.3	199.8	165.4	501.2
Oct.....	1,029.7	579.2	386.6	142.2	609.7	201.7	175.5	520.1
Nov.....	1,034.4	581.5	394.2	141.7	603.8	201.3	176.5	514.5
Dec	1,032.2	582.7	395.0	147.6	594.8	194.0	186.2	495.9
2000 Jan.....	1,038.0	586.5	429.6	145.3	607.6	195.4	187.5	507.2
Feb	1,043.5	590.4	432.2	145.9	603.0	195.6	188.6	503.5
Change compared with previous year, per cent								
1995	4.1	5.4	6.1	8.7	3.2	7.6	-3.4	4.1
1996	5.1	7.9	6.8	6.9	7.2	5.1	-2.7	7.2
1997	6.8	9.9	9.9	8.8	5.3	7.4	-4.4	5.2
1998	7.8	10.1	13.7	8.7	2.8	4.9	11.8	2.9
1999	6.3	7.7	5.8	4.5	3.7	-0.6	-6.6	4.0
1999 Feb	7.0	9.5	14.1	9.3	3.7	4.4	2.4	4.2
Sep	7.2	8.4	5.3	3.2	1.5	2.4	-26.5	2.0
Oct.....	7.0	8.0	7.9	3.9	1.5	0.9	-14.1	1.9
Nov.....	6.6	7.6	6.9	3.6	5.1	-0.9	-10.4	6.2
Dec	6.3	7.7	5.8	4.4	3.7	-0.6	-6.6	4.0
2000 Jan.....	5.5	7.0	17.4	5.8	1.1	-3.0	0.8	0.7
Feb	5.2	6.6	15.3	5.5	2.2	-4.6	-2.7	2.0

THE BANKS' LENDING

Table 5

End of period	From banks in Denmark				From Danish-owned banks abroad			
	To Danish residents		To non-residents		To Danish residents		To non-residents	
	In kroner	In foreign currency	In kroner	In foreign currency	In kroner	In foreign currency	In kroner	In foreign currency
	Kr. billion							
1995	272.4	14.3	35.5	31.4	27.6	46.8	2.8	68.3
1996	287.8	14.9	44.1	40.8	37.3	36.7	3.9	93.5
1997	312.7	17.4	61.7	49.9	46.4	38.2	3.4	132.0
1998	346.5	26.9	26.6	46.8	52.5	43.9	3.1	148.6
1999	356.7	35.5	33.4	60.4	62.4	60.9	3.2	218.8
1999 Feb.....	348.4	29.2	40.1	48.3	51.2	42.4	3.5	161.7
Sep.....	362.5	31.3	47.6	62.1	58.9	52.5	2.8	220.2
Oct.....	355.2	31.5	43.5	67.0	60.1	54.1	2.9	213.3
Nov.....	359.7	34.5	37.8	62.9	61.6	54.6	3.0	224.7
Dec.....	359.2	35.8	33.6	60.6	62.4	60.9	3.2	219.0
2000 Jan.....	379.9	49.7	25.1	55.3	49.6	48.6	2.5	226.0
Feb.....	379.8	52.4	25.3	53.6	48.3	47.4	2.2	231.0
	Change compared with previous year, per cent							
1995	6.5	0.6	6.4	-24.1	-3.2	-12.3	2.4	26.6
1996	6.8	5.5	24.4	29.5	34.8	-21.6	39.7	37.7
1997	9.5	17.3	40.3	22.7	24.5	4.2	-13.6	41.4
1998	11.4	54.1	-56.8	-6.2	13.1	15.0	-8.1	12.9
1999	3.7	33.1	26.4	29.4	18.8	38.7	2.4	47.4
1999 Feb.....	11.4	59.9	-38.3	-10.0	11.5	9.7	17.0	15.1
Sep.....	4.0	24.3	-26.5	24.0	19.9	33.8	-8.6	45.8
Oct.....	7.0	19.7	-11.1	47.8	21.2	35.4	-1.0	41.2
Nov.....	4.9	32.4	2.2	48.2	26.0	33.6	8.6	47.6
Dec.....	3.7	32.8	26.2	29.3	18.8	38.7	2.4	47.4
2000 Jan.....	12.4	76.5	-35.3	15.6	-5.1	16.2	-38.3	46.8
Feb.....	9.8	80.6	-36.8	11.4	-5.7	11.9	-36.6	43.1

EXTERNAL PAYMENTS (NET PAYMENTS FROM ABROAD)

Table 6

	Current payments	Capital transfers	Financial payments				Errors and omissions	Increase in the foreign-exchange reserve
			Total	of which:		Danish kronedenominated bonds		
				Direct investments				
				Foreign in Denmark	Danish abroad			
				Kr. billion				
1995	6.5	-0.5	1.6	21.5	-16.6	37.8	5.8	13.4
1996	13.2	0.2	14.2	2.7	-14.4	30.8	-6.8	20.8
1997	9.7	0.7	52.7	18.5	-27.8	44.8	-20.1	43.0
1998	-7.4	0.3	-18.2	45.0	-26.5	2.0	-4.0	-29.2
1999	10.8	0.9	56.6	52.3	-57.6	7.4	-4.0	64.2
Feb 98 - Jan 99 ...	-7.3	0.6	-37.0	22.5	-24.1	9.8	4.2	-39.5
Feb 99 - Jan 00 ...	8.1	0.3	30.5	54.4	-60.0	-6.2	-5.8	33.2
1999 Jan	3.2	0.6	5.6	-0.6	-1.5	18.3	5.0	14.3
Aug	1.1	0.1	-3.7	4.7	-8.3	-0.7	6.4	4.0
Sep	2.9	0.1	1.4	2.1	0.7	3.0	-0.3	4.1
Oct.....	2.3	-0.1	-0.7	5.3	-4.2	-11.2	-3.8	-2.3
Nov.....	-4.2	0.0	7.9	1.4	3.6	-14.6	-2.0	1.6
Dec	4.1	-0.1	1.5	6.2	-7.2	-10.0	-7.7	-2.3
2000 Jan.....	0.6	0.0	-20.5	1.4	-3.9	4.7	3.1	-16.7

GDP BY TYPE OF EXPENDITURE

Table 7

	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						
1994	965.7	493.8	250.3	168.4	1.6	914.1	342.6	291.0
1995	1,009.8	509.6	260.3	189.3	9.3	968.4	357.5	316.1
1996	1,061.7	531.7	273.7	201.8	2.3	1,009.5	379.4	327.2
1997	1,114.3	562.3	283.2	226.9	3.5	1,075.9	406.8	368.3
1998	1,168.3	592.5	298.7	245.2	10.9	1,147.3	408.7	387.7
1998 Q3	291.3	145.6	75.5	60.1	1.1	282.3	105.2	96.2
Q4	301.1	155.8	75.7	64.4	-0.9	295.0	105.3	99.2
1999 Q1	292.2	148.2	76.0	63.3	-1.7	285.8	103.0	96.6
Q2	303.3	151.1	78.2	64.0	-1.7	291.5	107.8	96.0
Q3	302.4	149.1	79.0	61.5	1.0	290.7	109.5	97.8
Real growth compared with previous year, per cent								
1994	5.8	7.1	2.9	7.4	...	7.2	8.2	13.2
1995	3.7	2.6	2.2	13.6	...	5.5	3.5	8.8
1996	2.8	2.9	3.2	4.8	...	2.5	5.0	4.3
1997	3.1	3.7	1.0	10.4	...	4.6	4.4	8.5
1998	2.7	3.5	3.0	6.9	...	4.6	1.4	6.4
1998 Q3	3.6	4.7	3.1	6.2	...	4.5	3.6	6.0
Q4	2.5	3.1	3.7	4.7	...	4.5	-1.1	3.9
1999 Q1	0.5	2.8	1.6	3.9	...	0.3	3.2	2.6
Q2	1.8	-0.7	1.3	3.0	...	-0.8	12.5	5.2
Q3	1.0	0.1	1.4	0.9	...	0.6	3.0	1.9
Real growth compared with previous quarter (seasonally adjusted), per cent								
1998 Q3	1.8	0.2	0.5	2.7	...	0.4	9.2	4.0
Q4	0.0	0.9	0.6	-0.5	...	1.0	-2.7	0.2
1999 Q1	-0.6	-0.4	-0.2	2.9	...	-2.2	3.3	0.8
Q2	0.8	-1.4	0.4	-1.6	...	0.1	2.6	0.4
Q3	0.8	1.0	0.6	0.4	...	1.8	-0.1	0.5

PRINCIPAL ITEMS OF THE BALANCE OF PAYMENTS (NET REVENUES)

Table 8

	Goods (fob)	Services	Goods and services	Wages and property income	Current transfers	Total current account
Kr. billion						
1995	37.3	4.8	42.2	-20.2	-9.6	12.3
1996	45.5	4.9	50.4	-21.2	-11.7	17.5
1997	37.8	1.3	39.2	-24.4	-8.6	6.2
1998	25.9	-4.2	21.8	-24.9	-9.7	-12.9
1999	46.1	4.0	50.1	-21.3	-14.9	13.9
Jan 98 - Dec 98.....	25.9	-4.2	21.8	-24.9	-9.7	-12.9
Jan 99 - Dec 99.....	46.1	4.0	50.1	-21.3	-14.9	13.9
1998 Dec	2.6	-1.5	1.1	-3.3	-2.1	-4.3
1999 Jul.....	3.7	0.9	4.6	-1.2	-2.5	0.9
Aug	4.1	0.9	5.0	-1.5	-1.5	2.0
Sep	4.7	-0.5	4.2	-0.8	-1.9	1.5
Oct.....	5.0	0.9	5.9	-1.9	-2.0	2.0
Nov.....	5.0	-0.2	4.9	-7.1	-1.3	-3.5
Dec	5.1	1.2	6.3	-1.8	-2.2	2.3

PRICES AND EXCHANGE RATES

Table 9

	Consumer price index	Index of net retail prices	Wholesale price index	Kroner per EUR 100	Kroner per USD 100	Effective krone rate	Real effective krone rate based on consumer prices
	Change compared with previous year, per cent			Average		1980=100	
1995	2.1	2.0	2.9	...	560.53	103.9	106.4
1996	2.1	2.0	1.1	...	579.59	102.9	105.7
1997	2.2	2.2	1.9	...	660.86	100.0	103.0
1998	1.9	1.5	-0.6	...	669.70	101.3	104.6
1999	2.5	2.1	0.5	743.56	698.34	99.6	104.2
1999 Feb.....	2.0	1.5	-1.6	743.52	663.45	101.2	105.5
Sep.....	2.8	2.6	1.6	743.39	707.76	98.7	103.7
Oct.....	3.0	2.8	2.3	743.34	693.72	99.1	104.2
Nov.....	3.0	2.8	3.5	743.65	718.71	98.2	103.4
Dec.....	3.2	3.0	4.7	744.05	735.52	97.3	102.3
2000 Jan.....	3.2	3.4	4.2	744.40	733.58	97.3	102.2
Feb.....	3.0	3.3	...	744.53	756.23	96.9	...

SELECTED MONTHLY ECONOMIC INDICATORS

Table 10

	Unemployment		Quantitative index for sales in sectors of		Construction projects commenced 1,000m ²	New passenger car registrations Number	Consumer confidence indicator Balance per cent
	1,000 persons	Per cent of labour force	Extraction of raw materials and manufacturing 1995=100	Retail trade 1990=100			
1995	288.4	10.4	100	108.0	5,858	135,245	9
1996	245.6	8.9	102	109.6	7,351	142,175	5
1997	220.2	7.9	107	111.8	8,291	152,869	9
1998	182.7	6.6	109	114.3	8,992	162,695	2
1999	158.2	5.7	111	115.6	...	144,222	-2
Seasonally adjusted							
1999 Feb	165.8	6.0	109	116.3	665	12,472	-7
Sep	154.3	5.5	113	114.8	695	11,343	3
Oct.....	152.6	5.5	112	116.7	...	11,517	1
Nov.....	151.0	5.4	115	117.4	...	11,603	-2
Dec	150.2	5.4	115	118.3	...	14,263	-6
2000 Jan.....	148.8	5.3	115	10,755	-2
Feb	9,837	1

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