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

Niels Lynggård Hansen and Erik Haller Pedersen, Economics

INTRODUCTION AND CONCLUSION

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

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

THE ECONOMIC AND FINANCIAL BACKGROUND

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

GROWTH IN GDP AND SELECTED SUBCOMPONENTS

Table 1

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

Source: Statistics Denmark.

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

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

Table 2

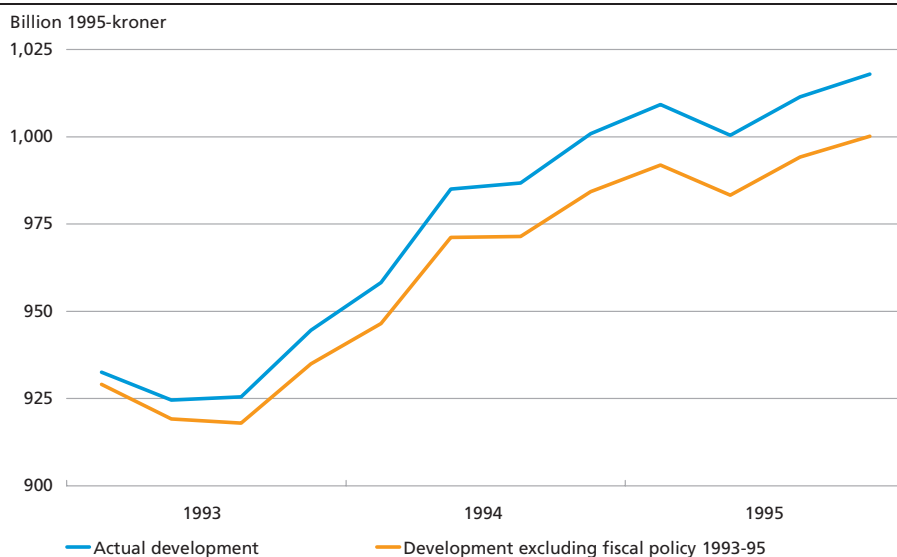
| Impact in the year | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 |
|------------------------------|-------------------|------|------|------|------|------|------|------|
| <i>Impact of policy year</i> | Percentage points | | | | | | | |
| 1988 | -0.3 | -0.4 | -0.4 | -0.4 | -0.3 | -0.2 | -0.1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

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

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

GROSS DOMESTIC PRODUCT

Chart 1



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

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

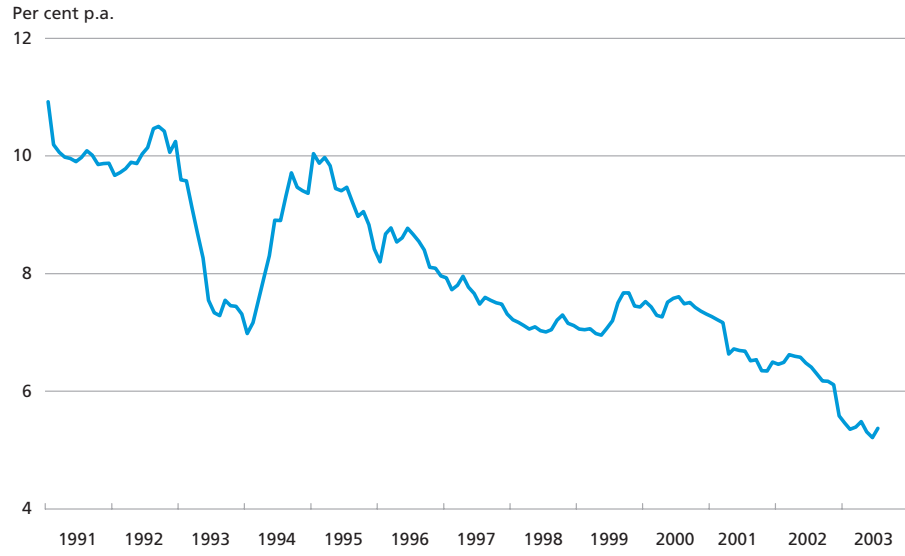
Fiscal policy was expansionary throughout the period from 1989 to 1995, cf. the fiscal effects (the diagonal) in Table 2. The fiscal effect, i.e. the first-year GDP impact of the fiscal policy calculated using the model, was only marginally greater in 1993 and 1994 than in the preceding years. When the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

The fall in interest rates

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

LONG-TERM MORTGAGE RATE

Chart 2



STATUTORY BACKGROUND TO THE CONVERSION WAVE

Since the introduction of the minimum-coupon-rate rule¹ in the mid-1980s, mortgage-credit loans have been financed almost entirely via bonds issued at a price just below par. Since the bonds are typically callable, i.e. they can be redeemed at par, conversion becomes attractive if interest rates drop sufficiently. The extent of the conversion wave in 1993-94 was, however, not only attributable to the fall in interest rates, but also to a number of preceding cases where mortgage-credit legislation was relaxed, as well as amendments to tax legislation.

New provisions in 1992 introduced general access to supplementary mortgage credit within 80 per cent of the property value, as opposed to the previous conditions related to the purpose of the loan, i.e. loans could only be granted for improvement or maintenance of owner-occupied homes or in connection with change of ownership. In the spring of 1993 access to 30-year annuity loans for owner-occupied homes via cash loans in connection with remortgaging and supplementary mortgaging was also reintroduced. The requirement to use 20-year mixed loans², which had been introduced with the austerity measures in 1986, was thereby repealed.

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

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

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

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

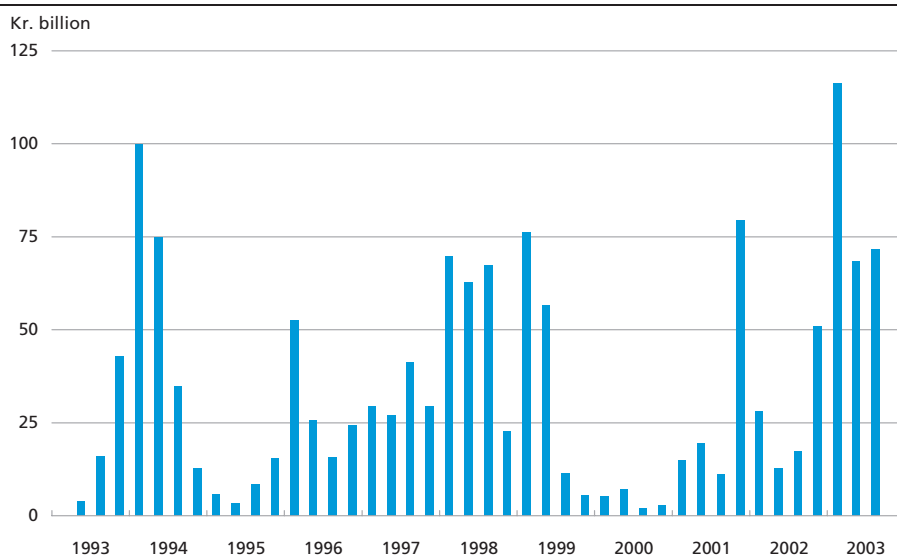
THE CONVERSION WAVE

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

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

CONVERSIONS OF MORTGAGE-CREDIT LOANS

Chart 3



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

Source: Copenhagen Stock Exchange.

THE HOUSEHOLDS' INTEREST SAVINGS FROM CONVERSION

Box 1

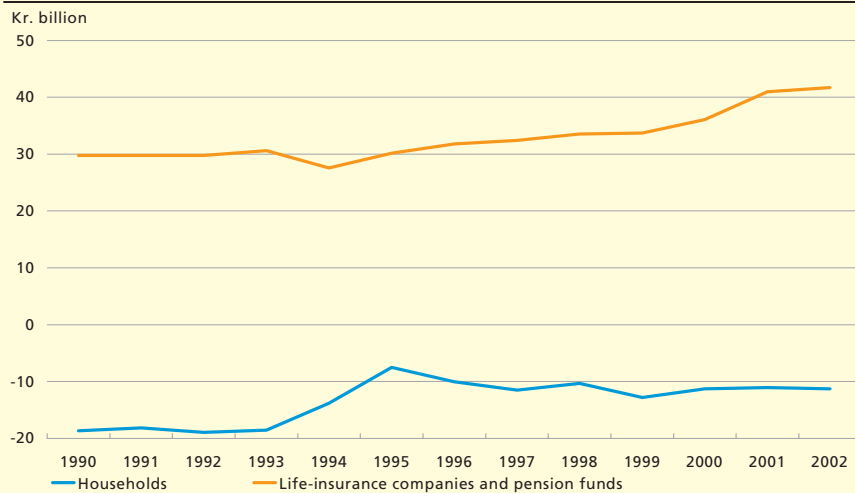
During the conversion wave in 1993-94 loans with a coupon rate of 9, 10, 11 or 12 per cent were typically converted into 6-per-cent cash loans. The borrower hereby achieved interest savings until the maturity of the new loan. The total converted loan volume was approximately kr. 300 billion, of which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

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

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

INTEREST INCOME, NET, OF HOUSEHOLDS AND PENSION FUNDS

Chart 4



Source: Statistics Denmark, National Accounts.

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

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

THE HOUSEHOLD SECTOR'S FINANCIAL BALANCES

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

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

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

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

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

Source: Statistics Denmark, National Accounts.

THE HOUSEHOLDS' FINANCIAL ACCOUNTS

Table 4

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

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

Source: Statistics Denmark and Danmarks Nationalbank.

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

QUANTIFICATION OF THE SIGNIFICANCE OF THE FALL IN INTEREST RATES

To gain an idea of the significance of the drop in interest rates, a number of simulations have been performed using Danmarks Nationalbank's economic model, Mona. The main activity effects of a drop in interest rates are seen in housing and business investments, as well as private consumption, which are especially influenced via the derived effect of the drop in interest rates on cash prices for owner-occupied homes and thereby on the housing assets¹.

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

The increase in private consumption from 1993 to 1994 is significantly higher than predicted by Mona's consumption relation². This is seen from the positive adjustment term³, cf. Chart 6. Likewise, negative adjustment terms in the preceding years indicate that consumption in the late 1980s and early 1990s developed more weakly than shown by the

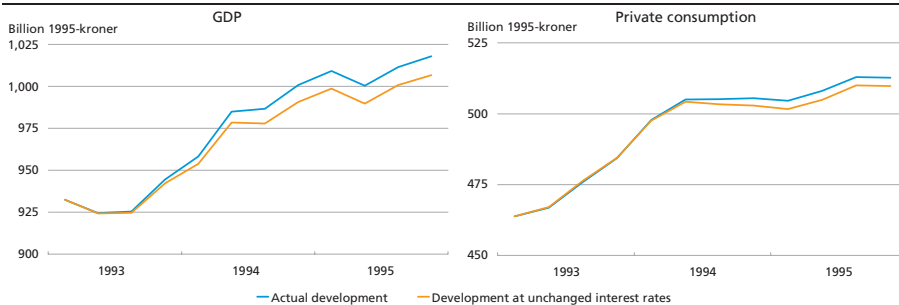
¹ The impacts on the economy of an adjustment of interest rates is documented in *Monetary Policy in Denmark*, 2nd edition, Danmarks Nationalbank, 2003.

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

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

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

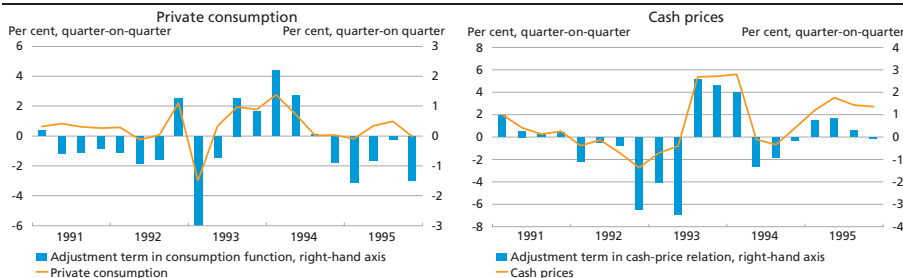
Chart 5



Source: Own calculations using the Mona model.

ADJUSTMENT TERM IN CONSUMPTION AND CASH-PRICE RELATIONS

Chart 6

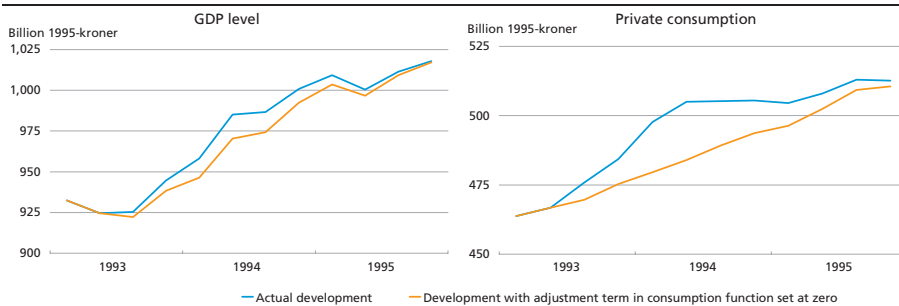


Note: The adjustment terms show the difference between the actual development and the development predicted by the model.

Source: Own calculations using the Mona model.

IMPACT ON GDP AND PRIVATE CONSUMPTION OF SHIFT IN MOOD

Chart 7



Note: Own calculations using the Mona model.

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

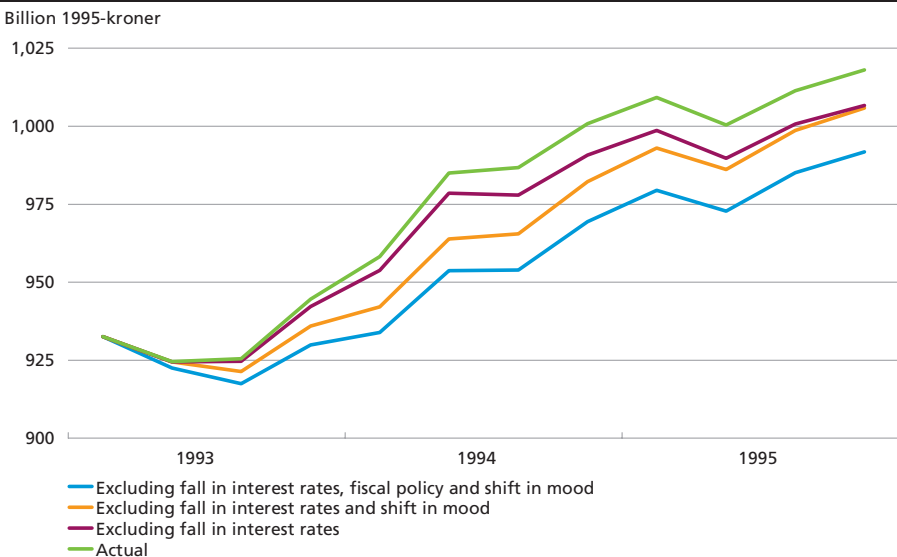
The increase in consumption from mid-1993, which is the most important single explanation for the upswing, is thus mainly attributable to a shift in consumer moods which is not captured by the model's relations. It is not immediately possible to state whether this shift in mood was triggered by the fall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

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

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

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

Chart 8



| CONTRIBUTION TO GDP GROWTH, YEAR-ON-YEAR | | | | Table 5 |
|--|-------------------|------------------------|---------------|-------------------|
| Percentage points | Contribution from | | | Actual GDP growth |
| | Fiscal policy | Fall in interest rates | Shift in mood | |
| 1993 | 0.9 | 0.1 | 0.3 | 0.0 |
| 1994 | 0.8 | 0.7 | 1.0 | 5.5 |
| 1995 | 0.3 | 0.3 | -0.9 | 2.8 |

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

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

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

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

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