

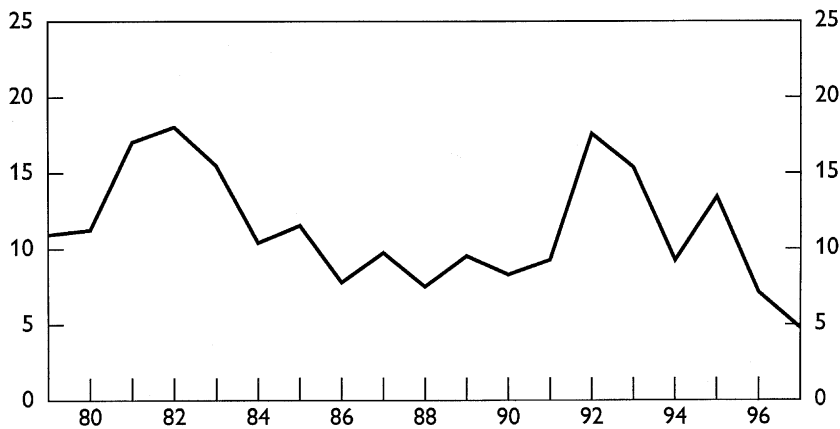
## **Comments on “Monetary policy in Denmark since 1992”**

Santiago Fernández de Lis

Exchange rate stability has been the cornerstone of Danish monetary policy in recent years. It is particularly important in this regard to assess the impact of the widening of the ERM bands in August 1993 on Danish monetary and exchange-rate strategy. Denmark has always been a defender of the old system of narrow bands for understandable reasons. Before the crisis of 1992–93, Denmark tended to make greater use of exchange rate movements within the band, as compared to the other two Basle-Nyborg instruments (namely, interest rate movements and interventions). Denmark relied more than any other ERM country on the use of exchange rate movements, which proved to be stabilising due to the credibility of the limits. When the Danish krone tended to approach the fluctuation limits, self-stabilising capital movements pushed the exchange rate back towards the central parity. Even during the ERM crisis, when the limits proved to be destabilising for most currencies, the Danish krone seemed to enjoy greater credibility. However, on some occasions of generalised turmoil, co-ordinated intramarginal interventions by ERM central banks in favour of the Danish currency were necessary to avoid a realignment.

The widening of the bands to  $\pm 15\%$  in August 1993 changed this environment. The results of this broadening of the formal limits were somewhat paradoxical: short-term volatility of the exchange rates has been reduced for almost all participating currencies, not only compared to the period of tensions (1992–93), but also in comparison with the previous phase of stability (1987–92) (see Graph 1). This was also true for the Danish krone, as can be seen in Chart 10 of the Danish paper. Another indicator of the – to some extent surprising – greater stability of the new ERM of wider bands, is the reduction of the effective width of the band, defined as the distance between the weakest and the strongest currencies (see Graph 2). For most ERM countries, the widening of the bands apparently reduced the destabilising impact of the limits and increased the stabilising effect of the central parities. In the case of Denmark, these

Graph 1  
**Average volatility of ERM currencies\***



\* Volatility of the exchange rate against the Deutsche mark: standard deviation of logarithmic first differences, multiplied by 1,000.

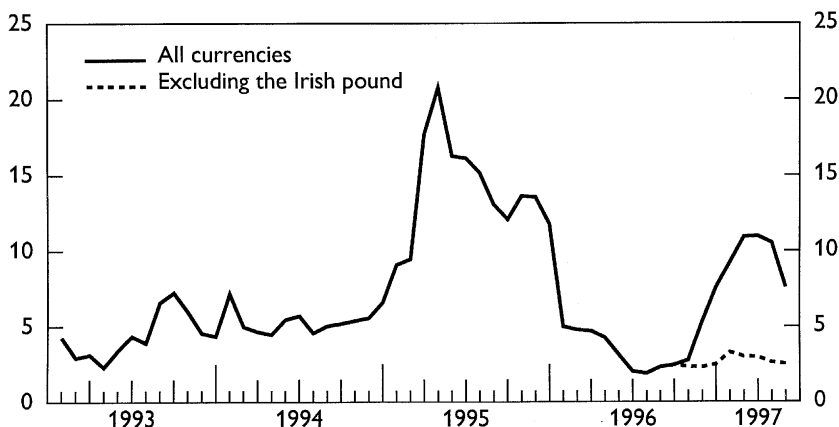
Source: Banco de España.

effects were possibly less clear, since the credibility of the limits was higher in the old system, though the data also seem to show some stabilising impact of the wider bands.

The performance of the Danish economy since 1993 has been very satisfactory: GDP growth accelerated, unemployment reached levels much lower than in other European countries, interest rates were reduced, inflation was kept low, the current account has been in surplus, the public deficit was reduced – which permitted a lowering of the debt ratio. Overall, this improvement in the economic climate seems to be mainly a result of structural transformations of the economy and appropriate economic policies. Nevertheless, one may wonder to what extent the widening of the bands also played a role in this economic performance.

The assessment of the working of the ERM with the old and the new systems is very relevant for Denmark. In the event of non-participation in EMU from the beginning, Denmark will face the choice, in the ERM-2, of either joining the standard wide band or trying to establish some kind of closer link with the euro area. In this decision, an appropriate assessment of the historical experience is crucial.

Graph 2  
**Width of the ERM band\***



\* Deviation between the strongest and weakest currencies of the ERM, measured as the percentage difference between their market exchange rate and bilateral central parity.

Source: Banco de España.

The reduction in the exchange rate volatility since 1993 has been parallel to an increase in interest rate volatility. It seems that there was some transfer of volatility between both variables. To what extent was this induced by a different use of the Basle-Nyborg instruments? Apparently, the Danish authorities have tended to rely more, since 1993, on the use of interest rates and on intramarginal interventions, and less on movements of the exchange rates. It is, in any case, difficult to compare the use of the exchange rate as an instrument with, respectively, a 2.25% and a 15% band. In relative terms, a 2% depreciation in the former system would be equivalent to a 13.3% movement in the latter, whereas in absolute terms the fact was that the Danish krone was able to depreciate as much as 8% in September 1993, much beyond the former limits, and to subsequently recover very close to the central parity. One may conclude that, in absolute terms, the use of the exchange rate movements was greater in the new system, whereas in relative terms it was smaller.

A very interesting idea developed in the paper relates to the appropriate policy reaction when there are differences in the business cycle with the anchor country. In the last few years, Denmark has been further advanced in the cycle which, under a basically fixed exchange rate policy,

has led to a level of interest rates which has been too low for the economy. This has required a tightening of fiscal policies which was quite successful in reducing the relatively high ratio of public debt and allowed Denmark to be among the few EU countries to meet the deficit criterion as defined by the Maastricht Treaty.

As mentioned earlier, the reduction of exchange rate volatility has possibly been related to the increase in volatility of short-term interest rates. One may wonder whether the new monetary policy scheme might also have played a role in this respect. A system of no reserve requirements with no possibility of overdrafts is equivalent to a zero reserve requirement with no averaging provisions. This system, which is very demanding for the banks' liquidity management, combined with a framework for intervention rates with a floor and a repo, but without an upper limit for market interest rates, might create some short-term volatility in these rates. In turn, this might present some advantages from the point of view of stabilising the exchange rate.

# Monetary policy in Finland: experiences since 1992

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This paper discusses monetary policy experiences in Finland since 1992. The paper starts with a discussion on general macroeconomic developments (Section 1) then focusing on inflation developments (Section 2). Changes in the monetary policy framework are discussed in Section 3. Finally, Section 4 draws some conclusions.

## 1. Macroeconomic development

### *1.1 Demand, output, employment and external balance*

Finland's recession of the early 1990s left a problematic legacy for economic policy. At the start of 1993, aggregate output was at a level 14% lower than three years earlier. During the same period, the unemployment rate had increased fivefold, the ratio of public sector debt to GDP had increased fourfold, the ratio of net external liabilities to GDP had doubled and asset prices had decreased by 50%. Several exceptional measures, such as extensive bank support, were needed to overcome the crisis.

The severity of the recession is completely explained by a contraction in private consumption and private investment (Chart 1). The same demand components had fuelled the economic overheating of the late 1980s. This overheating increased the severity of the recession, because the subsequent fall in asset prices aggravated the financial position of overindebted households and firms. Moreover, the country's large foreign currency-denominated debt became a contractive factor when the markka weakened.

The Finnish economy began to pull out of the recession in the summer of 1993 largely as a result of rapid export growth. At the start, export growth was driven by the depreciation of the markka. Later, despite a substantial strengthening of the markka, competitiveness remained high owing to wage restraint and a jump in productivity.

Chart 1  
**GDP growth contributions, 1985–96**

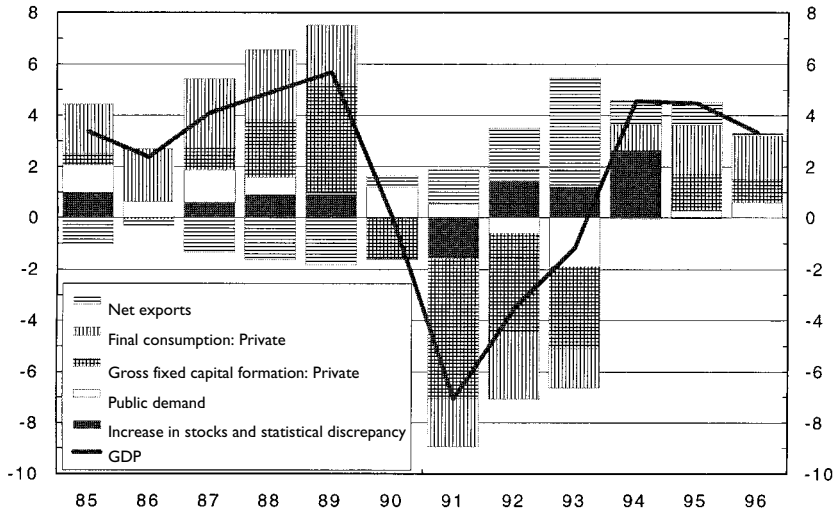
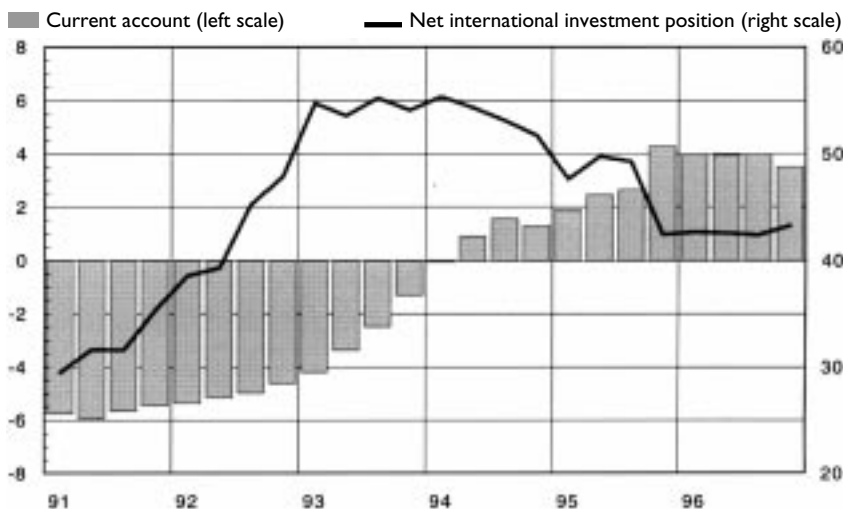


Chart 2  
**Employment and unemployment**  
1,000 persons; seasonally adjusted



Chart 3  
**Current account and net international investment position**  
 As a percentage of GDP



Since 1993 economic growth in Finland has been highly robust by international standards. In line with the typical cyclical pattern, the driving force shifted from net exports via inventory adjustments to other domestic demand components. Growth of domestic demand started with investment in the manufacturing sector and later spread to private consumption. The recovery of construction investment from the trough of the recession did not begin until the latter part of 1996.

The recent growth in private consumption is based on favourable developments in real income, lower interest rates and rising asset prices. Household confidence has remained high. The recovery of the domestic sector stems largely from the same factors.

Unemployment peaked in the first half of 1994 (Chart 2). Despite fast growth in output, the number of unemployed has declined sluggishly. This is partly due to a rapid improvement in productivity and an increase in labour supply. The decrease in unemployment that has occurred over the last couple of years is attributable largely to more active labour market policies.

In 1994 the current account recorded a surplus for the first time in almost twenty years. The growth of the foreign liability position halted

both in markka terms and especially relative to a rising GDP. The current account surplus was not due merely to muted imports stemming from a sluggish economy; robust export growth was a key factor (Chart 3). The large surplus of exports over imports as well as lower debt servicing costs will keep the current account surplus at a high level even as the recovery of domestic demand leads to increasing imports.

## *1.2 The role of macroeconomic policies*

During the first half of the 1990s, Finnish economic policy was consistently aimed at curbing external liabilities and strengthening firms' balance sheets. Because of the large external liability position, it was felt that there was no viable alternative to this strategy, even though it was clear that it would generate very few new jobs.

As the current account began to move into surplus in 1994, the focus of economic policy turned to bolstering employment and consolidating central government finances. The major economic policy goals of the new Government formed in the spring of 1995 were to increase labour market efficiency, maintain low inflation, reverse the growth of central government debt via expenditure cuts and to shape a tax policy that encourages work and entrepreneurship. The cumulative sum of spending cuts effected by the current and previous Governments will rise to FM 68.9 billion by 1999, which is equivalent to 8.8% of GDP (see Lehtonen (1996)).

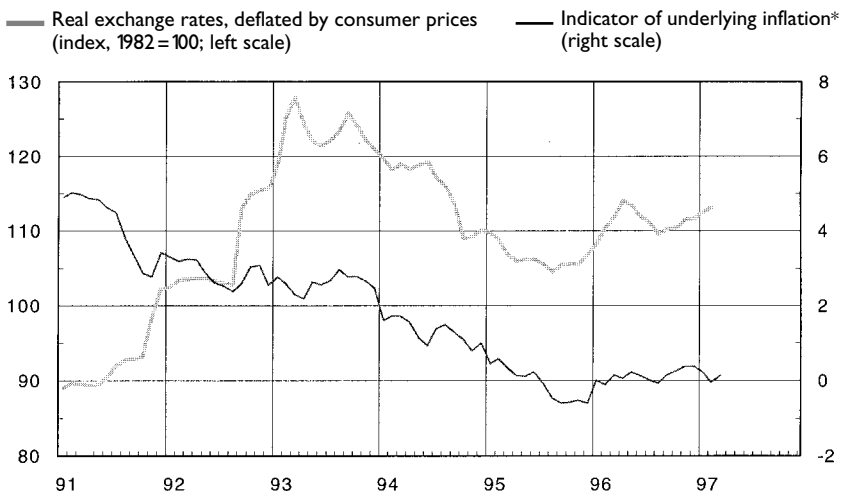
The Finnish markka was allowed to float in September 1992. It was decided to discontinue the markka's ECU linkage, because it had proved impossible to defend the markka exchange rate. The markka depreciated sharply during the initial phase of floating in autumn 1992, while differentials against German interest rates narrowed across the entire yield spectrum.

In February 1993, the Bank of Finland announced it would aim directly at price stability. The inflation target was specified as stabilisation of underlying inflation at about 2% as from 1995. Underlying inflation was defined as CPI inflation excluding the effects of indirect taxes and subsidies as well as capital costs of housing.

One reason for announcing the inflation target was concern over a possible acceleration of inflation following the sharp depreciation of the markka in the initial phase of the float. It was preferred that the markka's real exchange rate would strengthen via nominal appreciation rather than higher inflation.

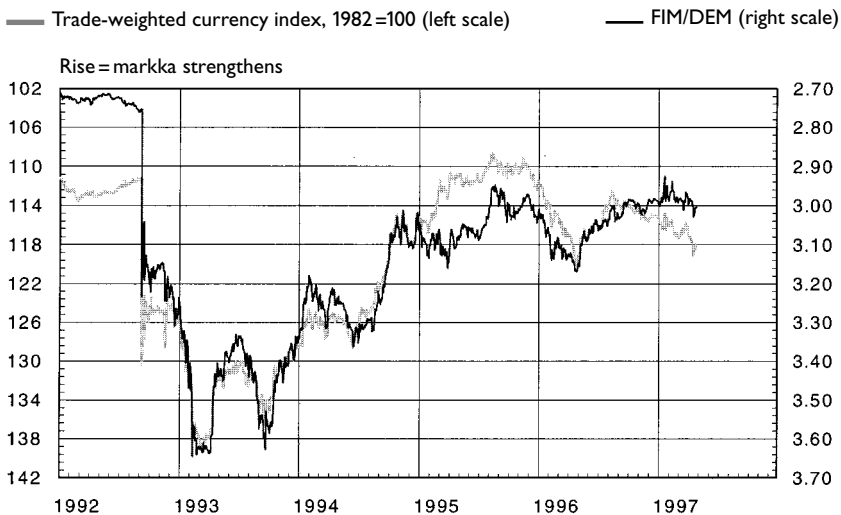


Chart 4  
**Real exchange rates and indicator of underlying inflation**



\* Twelve-month percentage change in CPI excl. indirect taxes and subsidies and capital costs on owner-occupied housing (mortgage interest payments and depreciation).

Chart 5  
**External value of the finnish markka**



Finnish economic policy has produced the desired results. The markka's real exchange rate strengthened without an acceleration of inflation (Chart 4). The nominal exchange rate has been relatively stable since autumn 1994 (Chart 5). The level of both nominal and real interest rates has declined.

The decline in the interest rate level has been associated with a rise in asset prices. At the beginning of the recession, asset prices – in particular housing and other real estate prices – fell to an exceptionally low level. The rise in asset prices has strengthened private consumption and fostered a pick-up in construction investment. The Tobin-q effect seems to have been more significant than the effect of lower interest costs.

### *1.3 Developments in financial markets and overall demand*

The behaviour of financial institutions was a major cause of the economic overheating in the 1980s. Although the emergence of a banking crisis aggravated the recession, it would be inaccurate to say that Finland experienced a general credit crunch. The contraction in the stock of bank lending derived from the demand side of the loan market, not from a decrease in supply (Vihriälä (1997)). Banks have, however, required more and better collateral for loans, which may have somewhat constrained the borrowing capacity of small and medium-sized companies.

Large companies in the export sector have not needed bank loans to finance their investments; most of them have been able to rely on internal sources. Nor have large companies been dependent on domestic financial institutions. At the moment, corporate finance margins are at a historically low level.

It was not until the end of 1996 that the total stock of bank lending started to grow slowly. Vigorous credit expansion is not expected.

The rise in housing and other real estate prices is largely based on the fall in nominal and real interest rates. Share prices have been boosted by firms' good performance prospects as well as international demand and a dearth of new share issues.

Asset prices have already affected consumer demand via the wealth effect. This has been reflected in a decrease in the savings ratio, which will continue to fall in 1997. The rise in housing prices has a direct and rapid effect on housing investment.

## 2. Inflation

### 2.1 Factors behind price and wage developments

Although import prices rose by 9% in 1993, the upward trend came to a halt already in the early months of the year (Chart 6). Subsequently, markka-denominated import prices have remained very stable.

Owing to the high rate of unemployment and widespread crisis awareness, wages developed moderately in the early years of the 1990s (Chart 7). In several of those years, contractual wages did not rise at all. Wage drift also remained moderate. Unit labour costs in manufacturing decreased, which kept competitiveness strong despite the revaluation of the markka by 6.4% in 1993–94.

The decline in unit labour costs and stable import prices helped constrain the rise in consumer prices. The rise in the Bank of Finland's target gauge, the indicator of underlying inflation, fell below 2% in the course of 1994 (Chart 8). In 1995, the most important factor affecting consumer prices was the fall in food prices following Finland's entry into the EU. In the absence of this decline, the rise in indirect taxes would have pushed consumer price inflation above 2.5%.

Chart 6  
**Import prices (total)**  
Index, 1990=100

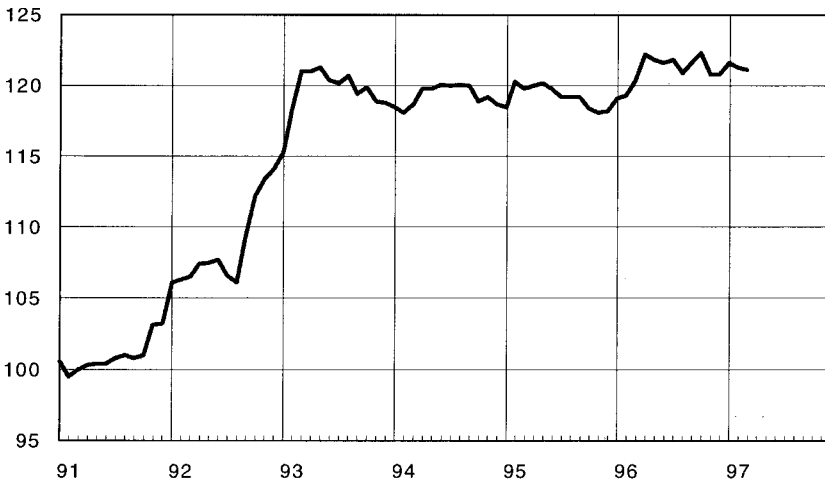
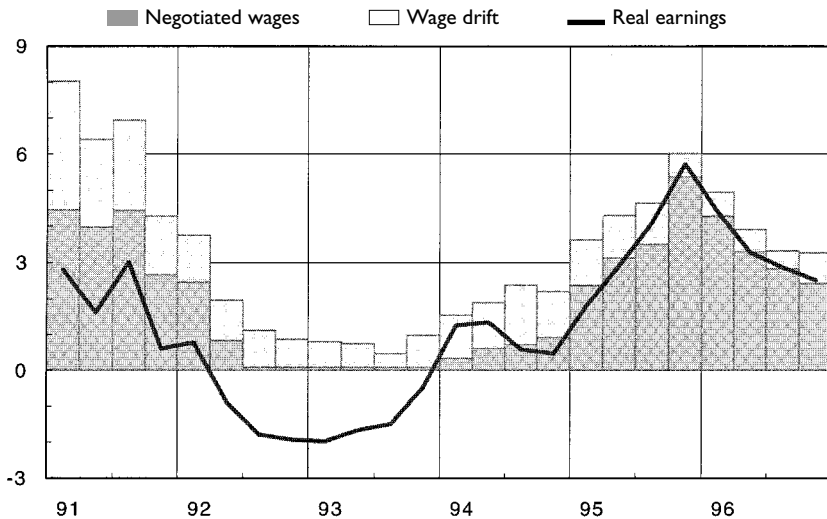


Chart 7  
**Earnings**

Percentage change from previous year



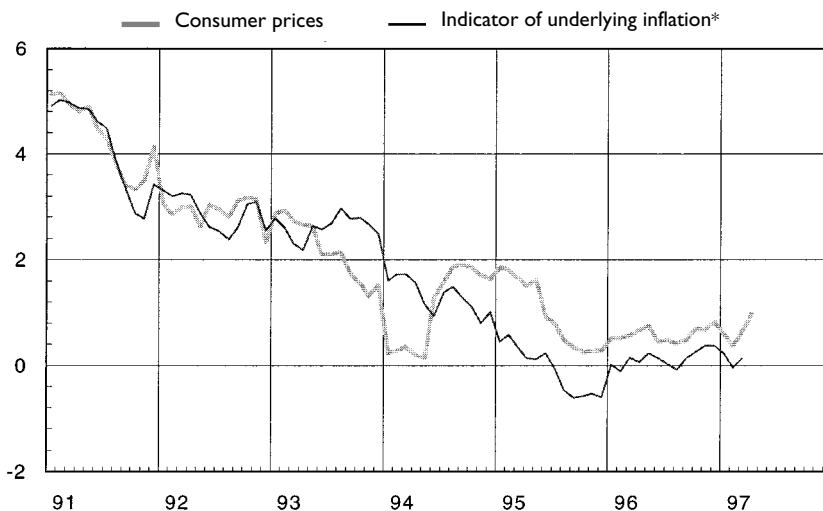
In late 1994 and in the first half of 1995, stable price performance was threatened as labour costs and inflation expectations started to rise as a result of pay settlements negotiated in 1994. There was concern over the possibility that the extremely high profitability of the export sector would be passed through to domestic costs. Because the improvement in profitability did not fully compensate for the increase in labour costs, rising unit labour costs clearly triggered inflation pressures.

On the other hand, appreciation of the markka – reflected in a slight decline in import prices – helped to curb inflationary pressures.

The strengthening of the markka may also have constrained the propensity to pass on higher costs to prices. Thus exchange rate developments, along with lower food prices, tended to dampen inflation expectations.

In mid-1995 it seemed that the low inflation target was gaining ever wider acceptance. Labour market organisations considered it important to conclude a long-term pay settlement that would keep labour costs in check. As a result, a centralised two-year pay settlement covering

Chart 8  
**Consumer prices**  
 Twelve-month percentage changes



\* CPI excl. indirect taxes and subsidies and capital costs on owner-occupied housing (mortgage interest payments and depreciation).

virtually all wage and salary earners was concluded. So far, wage drift has remained moderate.

In 1996, the rise in consumer prices continued at a moderate pace as a result of decelerating domestic costs, declining fixed costs (as interest rates fell) and continued stability of import prices. Despite improved economic prospects and rapid growth in consumer demand, inflation expectations have remained subdued.

For 1998, inflation is forecast to accelerate to 2% or slightly higher. The forecasts are based on stable international price developments and wage increases that are consistent with low inflation expectations. There is, however, some risk that inflation prospects could deteriorate. Although current output is probably still below potential GDP, the gap is narrowing rapidly. Rapid growth may lead to bottlenecks and thus to rising prices. The rise in housing prices may boost consumer demand more rapidly than forecast, which in turn could increase the risk of demand-pull inflation.

## 2.2 Macroeconomic policies and inflation expectations

The Bank of Finland adopted a direct inflation target because of the need for a new, transparent nominal anchor for the economy after the changeover to a floating exchange rate regime. Because the exchange rate had lost its role as nominal anchor and it was not possible to specify some other intermediate target – such as a monetary aggregate – the only practical alternative as a nominal anchor was a specific inflation target.

The credibility of the new monetary policy regime was soon strengthened when, in the spring of 1993, the Government announced its support of the inflation target and its adoption of a programme of sizable central government budget savings covering several years (Lehtonen (1996)). The markka began to appreciate rapidly against the major currencies, reaching its pre-float level in 1995.

Inflation and inflation expectations rose again in the autumn of 1994. This led to some monetary tightening in December 1994, although unemployment was still high. By June 1995 the Bank of Finland's tender rate had been raised three times by a total of 1 percentage point (Chart 9). Although the rise in the tender rate was moderate, it demonstrated

Chart 9  
**Central bank interest rates**

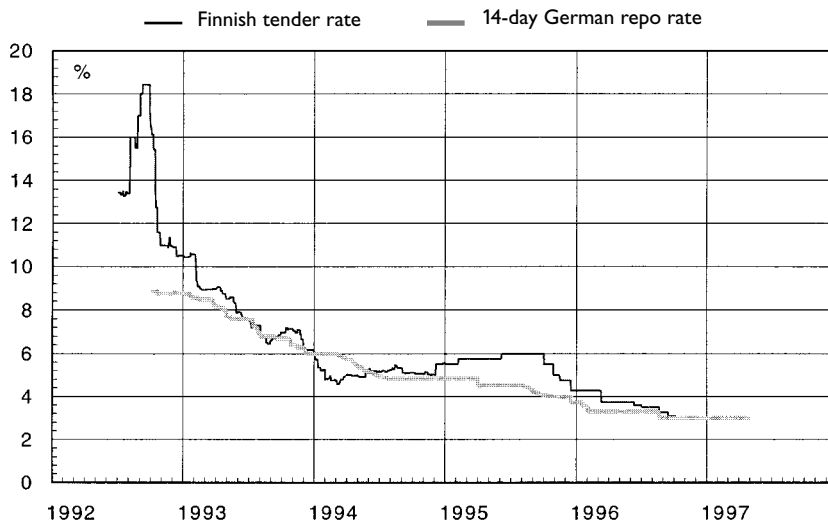
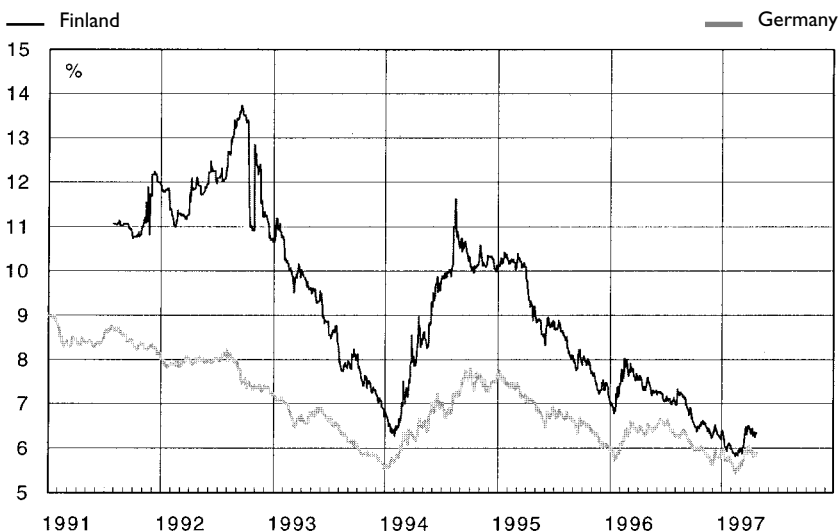


Chart 10  
**Long-term interest rates**  
Government bond yields, close to 10-year maturity



that the central bank was serious about the inflation target and that the essential factor was expected inflation rather than current inflation.

Several indicators showed that inflation expectations abated rapidly in the summer of 1995. Monetary policy probably played an important role in curbing inflation expectations, but equally important was the new Government's commitment to further budget deficit reductions over the next four years. The new Government also announced its support of the Bank of Finland's inflation target. Finally, the two-year moderate pay settlement confirmed the accomplishment of a fundamental lowering of inflation expectations. The pay settlement and budget cuts paved the way for a substantial easing of monetary policy starting in the autumn of 1995.

The substantial decline of the long-term interest rates and the narrowing of the differential vis-à-vis the German rate reflects improved fundamentals, including lower inflation expectations and the improvement in government finances (Chart 10).

### **3. Monetary policy framework**

#### *3.1 Considerations in the formulation and implementation of monetary policy*

Defining an inflation target in terms of a gauge other than the change in the overall level of consumer prices always presents problems, as it is impossible to define a completely unequivocal indicator of underlying inflation. Further problems may also arise from the fact that decisions affecting wage determination tend to be based on “headline” rather than on underlying inflation. Although an appropriately defined indicator of underlying inflation will track the consumer price index over the long run, the two measures may from time to time deviate to a significant extent. Therefore, using the consumer price index as a basis might be as readily justified as using an indicator of underlying inflation (Pikkarainen (1996)).

An appropriately defined indicator of underlying inflation would exclude “correctly defined” temporary factors and economic policy effects and thus would not affect the conduct of monetary policy. On the other hand, if temporary factors can be precisely identified, it should be possible to justify the same monetary policy stance by specifying the exceptional factors that affect the course of consumer prices but which should not elicit monetary policy responses.

As examples of exceptional factors, one can cite the harmonisation of taxation and the fall in food prices that followed Finland’s entry into the EU. An increase in value-added taxes in June 1994 raised the CPI but did not affect the indicator of underlying inflation. The fall in food prices had only a temporary effect on both the CPI and the indicator of underlying inflation. Although the Bank of Finland noted these factors, the stance of monetary policy was not changed as a result. In public debate, however, appeals were repeatedly made for an easing of monetary policy, in light of an inflation rate that was below the announced target level.

When Finland changed over to a floating exchange rate regime, the conceptions of roles and relative information content of different indicators were murky. Subsequent research conducted at the Bank of Finland went a long way toward clarifying the picture (Pikkarainen and Ripatti (1995)). The findings were put to good use while the markka was floating, both in assessing the stance of monetary policy and in communicating interest rate policy decisions.

The markka joined the Exchange Rate Mechanism (ERM) of the European Union on 14th October 1996 in order to ensure that Finland would



fulfil all the EMU convergence criteria. The markka's central rate was set at a level close to its average exchange rate level for the previous couple of years, which was slightly weaker than the prevailing market rate. The markka's ECU central rate was set at 5.80661, with a corresponding DM central rate of 3.04. Following the ERM linkup of the Italian lira, the markka's ECU central rate became 5.85424. The agreed central rate level is consistent with the Bank's estimates of the long-term fundamental equilibrium exchange rate. These estimates are based on calculations of both purchasing power parity and exchange rate pressures based on the Bank's quarterly macroeconomic model.

The ERM link-up did not cause any essential change in the conduct of monetary policy, because low inflation, which remained the primary objective of monetary policy, is consistent with the objectives of other ERM countries. However, the central rate will probably act as a kind of restraint on monetary policy. Under normal circumstances the aim will be to maintain a stable exchange rate. The wide fluctuation range is significant mainly as a deterrent to speculation but also could serve as a buffer in case a conflict arises between the price stability objective and the selected central rate.

### *3.2 Changes in operating procedures*

Earlier, during the fixed exchange rate regime, the Bank of Finland's tender rate was partly determined by market forces in that the Bank conducted variable-rate tenders. The Bank also intervened at different maturities, mostly one and occasionally three-month maturities and in exceptional circumstances even at the twelve-month maturity. In the early stages of the float, the Bank of Finland operated in the money market much as it had under the fixed exchange rate regime, although it did steer interest rates to a somewhat greater extent than before.

In order to improve its communication of monetary policy, the Bank of Finland, in the autumn of 1994, gradually revised its intervention procedure by starting to focus clearly on stabilising short-term – one-month and to some extent three-month – money market rates and by seeking to smooth fluctuations in the tender rate. The Bank effected this change quietly without informing the markets, which did not clearly perceive the change until the Bank of Finland actively tightened its monetary policy by raising the tender rate in December 1994 via a fixed-rate tender. In a fixed-rate tender, the Bank of Finland discretionally sets the tender rate.

Fixed-rate tenders are indeed well suited to the floating exchange rate regime: the central bank sets the tender rate according to its longer-term inflation forecast and thus signals the markets and general public as to the level of short-term interest rates it considers to be consistent with the inflation target. Whereas more flexible auction procedures might have been preferable from the viewpoint of bank's liquidity management, the fixed-rate tenders have more clearly communicated the stance of monetary policy and have thus probably reduced uncertainty about the policy stance. This may in turn have reduced the risk premium contained in market interest rates and thus lowered the level of market rates.

Within the Bank of Finland's liquidity credit facility, the interest rates on liquidity credit and excess reserves have followed the tender rate closely, being respectively 2 percentage points below and above it. The interest rate on excess reserves is decided separately.

The earlier agreement-based cash reserve system was changed to a statutory minimum reserve system in July 1993. Under the new system, deposit banks and branches of foreign credit institutions must hold a certain amount of funds in non-interest-bearing accounts at the Bank of Finland. The reserve requirement is calculated on the basis of the reserve base as at the last day of each calendar month. The lag between the end of the computation period and the end of the corresponding reserves maintenance period is two months.

The reserve requirement, which may not exceed 5% of a mandatory reserve holder's total liabilities, is determined on the basis of monetary aggregates. The reserve requirement on deposits payable on demand is 2%, on other deposits 1.5% and on other domestic liabilities 1%.

The minimum reserve system was revised so that reserve requirements are fulfilled on an averaging basis as from October 1995. This procedure was aimed at smoothing interbank overnight rates and facilitating banks' liquidity management.

The banks' ability to manage their liquidity was further improved by the new auction procedure, whereby the Bank of Finland only sets the interest rate while each bank determines its own quantities. As a result, the need to arrange tenders has diminished but, on the other hand, the volatility of bank liquidity has increased. The reform has at least not yet significantly dampened fluctuations in the interbank overnight rate. The rather large fluctuations in the overnight rate are partly explained by the oligopolistic structure of the Finnish banking sector. About 90% of

reserve deposits are accounted for by three large banks. Fluctuations in the overnight rate are not harmful as such, as the rate applies to overnight loans of excess reserves and apparently has no impact on longer-term rates in Finland (Kuosmanen (1996)).

#### **4. Lessons**

The biggest surprises were already experienced in the late 1980s and early 1990s and were connected with the liberalisation of capital flows in the financial markets.

The most difficult phases in the first half of the 1990s related to management of the banking crisis and external indebtedness. Borrowing from abroad by the central government increased rapidly, offsetting capital exports of the private sector. Without the central government's external borrowing, the markka would probably have weakened even more in 1993, which would have aggravated the recession.

Experiences from the float were surprisingly good and the inflation target set in February 1993 has functioned well as a nominal anchor. The changeover to a floating exchange rate regime could have been accomplished earlier, perhaps already in the mid-1980s when the final stage of financial market liberalisation started.

Since 1993, actual inflation in Finland has repeatedly been lower than forecasted (Hukkinen and Suvanto (1997)). This is not attributable entirely to monetary policy, because the recession played a part in slowing inflation, as did Finland's entry into the EU at the beginning of 1995. Other reasons for lower-than-forecast inflation rates were, first, that the markka's appreciation had not been taken into account in the calculations. Instead, the forecasts were based on the usual assumption of an unchanged exchange rate. Secondly, firms' pricing practice changed decisively during the recession: markups were narrowed when demand was weak. Finally, wage restraint has persisted very well during the last settlement period and wage drift has remained smaller than forecasted.

## References

- Hukkinen, Juhana and Antti Suvanto (1997): "Inflation forecasts and expectations". *Bank of Finland Bulletin*, no. 2, February.
- Kuosmanen, Hannele (1996): "Experiences with reserves averaging". *Bank of Finland Bulletin*, no. 12, December.
- Lehtonen, Martti (1996): "Fiscal policy and public finances". *Bank of Finland Bulletin*, no. 11, November.
- Pikkarainen, Pentti (1996): "Some perspectives on the principles of monetary policy with a floating markka". *Bank of Finland Bulletin*, no. 8, August.
- Pikkarainen, Pentti and Antti Ripatti (1995): "The role of monetary indicators in the design of monetary policy". *Bank of Finland Bulletin*, no. 8, August.
- Vihriälä, Vesa (1997): "Banks and the Finnish credit cycle 1986–1995". *Bank of Finland Studies*, E:7.