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and Finland

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EXCHANGE RATE POLICY OF AUSTRIA AND FINLAND

Two Examples of a Peg

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*) Austrian National Bank and International Monetary Fund respectively. The views expressed are those of the authors and do not necessarily represent those of the Bank and the Fund.

Eduard HOCHREITER and Adalbert KNÖBL

EXCHANGE RATE POLICY OF AUSTRIA AND FINLAND

Two Examples of a Peg

1. Introduction

Following the closing of the gold window by the United States in 1971 and the subsequent demise of the Bretton Woods system, small countries, such as Austria and Finland, had to reconsider their exchange rate policies. The options available to these countries ranged from a free float to various kinds of pegs. Later, in the 1980s, the dismantling of exchange controls and closer monetary integration in Europe added new challenges. Presently, the discussion about forming a European central bank system and ultimately a single European currency requires the attention of monetary policy makers in these two countries, assuming that eventually both will join the EC.

In this paper we analyse the evolution of the exchange rate policies of the two countries and explore the reasoning behind their adoption and /or adaptation. It is not well known that Austria has pioneered various exchange rate policies during the past two decades, most importantly, the explicit use of a (temporary) real appreciation as an anti-inflation tool.

Finland's exchange rate policy, in contrast, has evolved from using the exchange rate as an instrument of external adjustment

toward the Austrian approach of using it as an anti-inflation tool. We contrast both exchange rate concepts and emphasize the issue of credibility of monetary policy.

Furthermore, we draw some lessons for the exchange rate policies of small open economies from Austria's and Finland's experiences. First, we note that credibility has to be earned. Second, despite the exchange rate peg some limited independence for economic policy remains, constrained by the need to secure a sustainable current account in the medium term. Third, an exchange rate peg does not necessarily imply the import of unemployment from the center country. In conclusion we find that the choice of the peg, in the long run, determines the inflation path but not the development of the real economy. The final section contains some concluding remarks.

2. Austria's experience with the hard-currency policy

2.1. An overview

When the United States closed the gold window in August 1971, Austria, like other countries, had to adapt its exchange rate policy. A free float was never seriously considered because of exchange rate uncertainties connected with it. Instead, Austria opted for pegging its exchange rate against a basket of currencies, which was dubbed the "indicator" in line with a seminal article by Fred Hirsch (1970). It was a pioneering concept, indeed, the first application of the nominal effective

exchange rate concept. The indicator originally contained 6 currencies (representing 9 countries)¹⁾ comprising Austria's most important trading partners, weighted according to trade weights²⁾. The main reason for adopting the indicator concept was to reduce uncertainty in the wake of the general float in the first few months after August 15, 1971. Over time, the currencies of the countries which used the freedom of floating for inflating their economies (Pound Sterling, Lira), or which were devalued to safeguard competitiveness (e.g., Swedish Krona³⁾) were eliminated from the basket. Finally, the basket was collapsed into a single currency, the DM, at the beginning of the 1980s⁴⁾.

In May 1974, Austria once again implemented a novel exchange rate concept. At the time, inflation had surged world-wide in the wake of the first oil price shock. The rate of inflation was approaching 10 percent in Austria. The Austrian policymakers urgently sought measures to bring inflation down. Recognizing the pass-through of world prices to domestic prices, as well as that from domestic prices to wages that was inherent in the Austrian system of the social partnership⁵⁾ the so called "hard currency" policy was developed. In May 1974, the Schilling was revalued by

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- 1) The following currencies were included in the indicator basket: the DM, Swiss Franc, Dutch Guilder (representing also the Belgian Franc), Swedish Krona (representing also the Danish Krone), Lira and Pound Sterling.
 - 2) A detailed history can be found for example in Kienzl (1987), Hochreiter (1981) and Winckler (1989). For a summary of Austria's policies in the 1970s, see, for example, Arndt (1982).
 - 3) For a comparison of Austria's and Sweden's exchange rate policies, see Hochreiter and Törnqvist (1990).
 - 4) An informal DM peg had also existed between July 1976 and December 1977.
 - 5) For a brief description of the salient features of Austria's social partnership, see Hochreiter and Schubert (1990).

4 1/2 percent against the DM to bring inflation down.⁶⁾ Initially, such an approach would result in a real appreciation and in a worsening of the external current account, both of which were accepted by the policy makers. However, they were confident that in due course the domestic economy would adjust to the new exchange rate level. Indeed, there was a clear perception that a competitiveness or employment-oriented exchange rate policy (implying that the exchange rate is adjusted to domestic developments), which was for example employed in the Nordic countries, would not succeed because wage earners would react to the devaluation-induced price increase. Experience in so called "soft-currency" countries has amply borne out this point of view, although it is theoretically correct that such a vicious circle depends on monetary accommodation. In practice, the authorities in "soft-currency" countries found it impossible to resist such pressure. Austria can be regarded as a pioneer in the application of a price stability-oriented exchange rate policy, which now has become a widely accepted approach, not only within the European Monetary System (EMS), but also in the Nordic countries.

In the context of a policy accepting a temporary real appreciation it was also recognized that this would squeeze profits in the exposed sector until prices and costs have fully adjusted. The initial costs in terms of employment were mitigated through an expansionary fiscal policy (to some extent through temporary subsidies)⁷⁾. There was also the view, very strongly held by the

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- 6) Between May and July of that year the Schilling appreciated by 4.4 percent in nominal effective terms and 4.0 percent in real effective terms.
- 7) The combination of the hard currency policy and partially off-setting fiscal policy has subsequently been dubbed "Austro-Keynesianism", see Seidel (1982).

unions, that the hard currency policy would result in an improved structure of the economy by forcing higher productivity⁸⁾. A real appreciation would squeeze profit margins in the exposed sector. Entrepreneurs, therefore, had to rationalize and to innovate to stay in business. As a consequence, productivity would rise. This would then be the basis for sustaining the higher real wages that resulted from the initial appreciation, while the real exchange rate reverts back to its previous level. Indeed, productivity growth in the Austrian manufacturing sector has been higher than in Austria's 12 most important OECD trading partners (See Table 1).

It has been argued in Austria that the hard currency approach requires capital restrictions⁹⁾, because a situation of high current account and fiscal deficits would, in a liberalized environment, lead to unsustainable capital outflows, if the exchange rate remained fixed. Indeed, there were a number of capital restrictions in the 1970s that effectively segmented domestic financial markets from foreign markets. In effect, the balance of payments ended with the current account deficit, which was predominantly financed through official capital imports. Private capital flows were very small. Subsequently, however, most capital controls were lifted with no negative consequences for the hard currency policy. The removal of capital controls in Austria reflects the international trend toward liberalization, the strength of the economy and last but not least Austria's

8) For an analysis of this question, see, for example, Marin (1985), Sitz (1981), and Dockner and Sitz (1986).

9) Giovannini (1990) acknowledges that capital controls were important for the EMS because they allowed members to deviate (temporarily) from the center country's monetary policy stance and protected monetary policies from speculative pressures.

application for EC-membership in July 1989. The few remaining restrictions will be abolished as of November 4, 1991.

Financial market segmentation also allowed the Austrian National Bank in the 1970s to pursue a policy of "nominal interest rate constancy"¹⁰⁾, leading to significant gyrations of the interest differential between Austria and abroad. By 1979, however, international market segmentation, especially at the short end, had weakened enough to link domestic and foreign interest rates. It was in that year that the Austrian National Bank attempted to resist a rise in international interest rates and, in the process, lost about one third of its foreign exchange reserves¹¹⁾. Henceforth the interest differential between Germany and Austria assumed an important role as an instrument of monetary policy. Austria had become a small open economy with high capital mobility.

2.2. Theoretical background

The theoretical model underlying Austria's monetary and exchange rate policies since the early 1980s is relatively simple. It is a typical model of a small open economy with a fixed exchange rate in the tradition of the monetary approach of the balance of payments. It assumes long-term neutrality of money; long-term purchasing power parity with exogenously given terms of trade; and demand determination of the money supply, with the domestic source component determining the foreign reserve position.

10) See Winckler (1980).

11) For a description of developments, see the Annual Report of the Austrian National Bank 1979.

The success of the hard currency policy in terms of securing low inflation depends on the price stability of the center country; in the case of Austria, the Federal Republic of Germany. This anchor has served Austria well, and despite risks involved in the German-German monetary union, the track record of the German authorities with regard to stabilization policies suggests that it will continue to do so.

2.3. The road to credibility¹²⁾

By the beginning of the 1980s, both the single currency peg and the link between domestic and foreign financial markets had been firmly established. Inflation had been reduced to an acceptable level, the current account was in balance, and the government deficit had been brought down¹³⁾.

At that time, the international recession set in, talk about Euroclerosis was in vogue, the debt crisis broke out, and major problems in the important nationalized sector of Austrian industry surfaced. These factors had a strong effect on Austria's economy, equivalent to a significant negative supply shock.

Given this environment, the economy - notably real wages - had to adjust. This could be achieved through adjusting nominal wages or raising prices. The latter could come about through a devaluation.

12) For a formal analysis of Austria's policies between 1977 and 1979 to establish the credibility of the hard currency policy see Hochreiter and Winckler (1991).

13) See Charts 1-3 and Tables 2-4.

However, the option of a devaluation was ruled out because of the long held conviction that for a small open economy, relative prices could not be changed lastingly by manipulating nominal quantities such as the exchange rate. Moreover, and this had become of utmost importance, it was recognized that in the environment of high capital mobility expectations would drive capital flows.

Consequently, expectations regarding the future exchange rate could lead to vast capital flows or gyrations in the interest rate differential. The task was to properly anchor expectations by eliminating as much as possible uncertainty about the future level of the exchange rate. The Austrian National Bank, therefore, had made a point to ensure the credibility of its exchange rate policy. In the short term, this can be done by limiting exchange rate fluctuations to the absolute minimum¹⁴⁾ through permanent presence of the Bank in the foreign exchange market and adjustment in interest rates, while in the long run it could only be achieved if the economic fundamentals converged toward those in the anchor country.

As domestic adjustment might be incomplete for quite some time (e.g., during 1975-79, and again 1982-86), steadfastness in policy in these more difficult periods was seen as a precondition for credibility. The Austrian National Bank has never left any doubt

14) See also the announcement of the National Bank of Belgium to this effect, Financial Times May 22, 1990. In fact, the coefficient of variation of Schilling/DM-rate has moved only between 0.93 and 0.03 points (measured from monthly averages) since the inception of the EMS, less than any currency participating in the EMS. See Table 5.

that it would maintain the peg, and if necessary, intervene and (since the early 1980s) adjust the interest rate differential to whatever level required.

Indeed, the policy resolve was tested in April 1977, when a high OECD official said in Vienna in public that the Schilling ought to be devalued against the DM. Following this statement, the Austrian National Bank lost the equivalent of US-\$ 210 million (3.5 bill Schilling) in foreign exchange reserves within ten days and a further \$ 170 million (2,8 bill Schilling) in late August and early September following public speculation about an impending devaluation. These reserves were later recouped, when the devaluation proved not to be forthcoming¹⁵⁾. In addition, in June of that year, the Bank raised official interest rates by 1 1/2 %-age points and reactivated quantitative credit controls ("Limes") in order to strengthen its stabilisation effort and to improve the current account of the balance of payments. During the early 1980s the market tested the Austrian National Bank's commitment to the DM peg on several occasions; in each case the Bank showed its resolve.

Once earned, credibility properly anchors expectations; as long as they remain firmly based, capital flows tend to be stabilizing. It can therefore be argued that high capital mobility can facilitate monetary policy insofar as even small changes in the interest differential induce equilibrating capital flows. This may be important in the case of temporary current account deficits. Moreover, high capital mobility and liberalized

15) The authors are indebted to Ms. Trost for providing the data.

financial markets tend to reduce the equilibrium interest differential by raising the substitutability of financial assets.

2.4. Choice of a peg - the Austrian solution

There remains the interesting question whether a single currency peg might be preferable to a basket of some kind. According to the literature the optimal peg depends on the nature of the shocks the economy is exposed to, as well as policy preferences¹⁶⁾.

The position of the Austrian authorities on this question is as follows: A small open economy has no choice but to adjust, irrespective of the nature of the shocks and exchange rate regime chosen. Adjustment should not come through inflation, because Austria's experience suggests that higher inflation does not permanently lead to lower unemployment¹⁷⁾.

Given these policy objectives and the characteristics of the Austrian labor market, the optimal exchange rate strategy for Austria would be to peg the Schilling to a low inflation anchor currency rather than a basket that would yield a higher average inflation rate.

This also implies that other instruments than the exchange rate need to be used to achieve adjustment to shocks: incomes

16) There is vast literature on this subject, e.g., Flanders and Helpman (1979), Flood (1979), Lipschitz and Sundararajan (1980), Argy (1990).

17) See, e.g., Handler (1989). The author even concludes that there might be a negatively shaped Phillips-curve for Austria.

policy to achieve real wage flexibility in the short term; fiscal adjustment in the medium term, to maintain confidence in the financial markets; and structural adjustment in the long term (adjustment of the supply side, e.g., through deregulation). In slack periods wages, and in overheating situations (which, however, have not occurred so far) fiscal policy, would have to take the main adjustment burden. This would be so because in an overheated economy, wage restraint - even if incomes policy succeeded in limiting wage rates - would not be effective, as it would be undermined through wage drift.

2.5. Austria and EMU¹⁸⁾

With Austria's application for EC membership it is also clear that Austria intends to participate fully in European monetary integration. The blue print for monetary integration is contained in the Delors Report, which sets out a step-by-step approach to monetary union. The major aim of step one is to obtain greater economic convergence. This is to be achieved mainly through adjustment of the domestic economy. Exchange rate adjustments are still possible, but only as last resort. Austria has eschewed exchange rate adjustments.

The economic performance in the second half of the 1980s and the beginning of the 1990s, suggests that Austria is on a balanced, low inflation growth path, with strong gains in employment, a balanced current account, and no obvious signs of overheating. One could conclude that Austria is not only further

18) For a more detailed account see Hochreiter and Törnqvist (1990).

down stage one than many EMS-countries but also that it has already met most of the economic preconditions for stages two and three of the Delors Plan. Having accepted the principle of EC-membership and being a small country, the formal loss of sovereignty connected with EMU would not materially change the position Austria is in at the present time. The Austrian authorities intend to join the European System of Central Banks *uno actu* with EC-membership.

3. Finland's experience with its basket peg

3.1. An overview

In the 1960s and through the early 1980s, economic policy in Finland focused on economic development through promoting rapid growth of output and employment. The main instrument to this end was monetary policy, relying on low interest rates to stimulate investment. The growth orientation of economic management was supported by an active exchange rate policy aimed at maintaining a strong competitive position of Finnish industry. Domestic cost pressures were accommodated through occasional large devaluations. Fiscal policy was not used for the purpose of economic stabilization, and public sector finances were generally kept close to balance.

Following the breakdown of the Bretton Woods exchange rate system, the Finnish markka (Fmk) since 1973 had been pegged against a basket of currencies most important to Finland's foreign

trade¹⁹⁾. Initially this was the internal practice of the Bank of Finland. Later, in 1977, the peg was formalized in the amendment of the Currency Act. The value of the exchange rate index was maintained by the Bank of Finland within margins established by the Government on the basis of a proposal by the Bank. The fluctuation range of the currency index had been changed from time to time, e.g. in 1988, when the fluctuation margin was widened from 4,5 % to 6 %. The objective underlying the choice of the basket was to insulate the effective exchange rate (and thus competitiveness) from fluctuations among other currencies²⁰⁾. Since June 7, 1991 the markka has been pegged to the ECU, with the effect that Finnish exchange rate policy has come closer to the Austrian policy of a DM peg.

Faced with significant economic imbalances in the mid-1970s as evidenced by rapid inflation, a sizable loss of competitiveness, and a large current account deficit, economic policy was adjusted in 1977-78, with a sharp tightening of fiscal and monetary policies and large devaluations (by a cumulative 16 %). The current account improved sharply in response, and a relatively strong competitive position was maintained through the early 1980s. However, in late 1982, in connection with the devaluation of the

19) The weights were adjusted quarterly and were based on the average trade shares for the previous two years; the base year was changed annually. This had been the position until June 7, 1991. Effective from that date, the markka has been linked to the ECU with a margin of ± 3 %. A concise analysis of Finland's experience with the currency band can also be found in Lehmuusaari (1991).

20) In a single currency peg such fluctuations affect the effective exchange rate; e.g., the effective exchange rate of the Austrian Schilling is affected by movements of the US dollar against the DM.

Swedish krona, the markka was again devalued in two steps by about 10 % to protect competitiveness.

Since then, the focus of policy has changed, with more emphasis being put on reducing inflation. The shift in emphasis is based on the belief that with the economy now matured, bringing down the rate of inflation provides the best opportunity for attaining satisfactory growth of output and employment in the longer term. In support of this, the exchange rate has no longer been used for external adjustment, and monetary policy has been re-oriented, taking as an objective the defense of the exchange rate. This implies that fiscal policy should play a more active role in offsetting fluctuations in foreign demand; it has also been an objective of policy to limit the overall size of the public sector. In effect, the underlying philosophy and objective of Finnish exchange rate policy has approached that of the Austrian hard currency policy, if in slightly looser form. The markka remains pegged against a basket of currencies, now the ECU, with fluctuation margins that are wider than is normal in the EMS.

In the 1980s, Finland's economic performance compared favorably with other industrial countries. Growth was strong and the unemployment rate was well below the average in the other industrial countries. However, the current account stayed in deficit, and inflation was persistently above the average of Finland's main trading partners. Strains emerged in the late 1980s as economic growth pressed against the limits of capacity.

The expansion had increasingly been based on the buoyancy of domestic demand, with inflation rising, and the external current deficit widening despite a large improvement in the terms of trade. An important factor behind the strength of demand had been a sharp fall in the household saving rate, as credit financed consumption rose strongly following financial liberalization²¹). The improvement in the terms of trade further boosted demand. Moreover, although fiscal policy was to be used more actively for short term stabilization, it did not prove to be politically feasible to tighten it enough to check demand pressures, although the budget moved into surplus. Monetary policy on the other hand had been constrained through the fixed exchange rate policy, and efforts to tighten monetary conditions had been frustrated by capital inflows²²). Indeed, in an attempt to provide more room for a tighter monetary policy the fluctuation band of the exchange rate index was widened from 4.5 % to 6 % in November 1988, and the markka was revalued by 4 % in March 1989. This allowed the effective exchange rate of the markka to appreciate by 5 1/2 % from mid-1988 to mid-1990.

In response, and with the previous fall in the household saving rate partially reversed once the stock adjustment of consumer borrowing in the liberalized financial system was completed, the economy slowed in 1990 and moved into recession in 1991. Inflation has also slowed down to about that in trading partners, but the current account remained in large deficit (close

21) See Lehmussaari (1990).

22) Except in 1986, 1989 and 1991 when monetary policy had to defend the markka against occasional episodes of speculative pressure. See also section 3.3.

to 5 percent of GDP) as the large decline in competitiveness showed up in losses in export market shares.

3.2. Austrian and Finnish exchange rate policies - how do they differ ?

Although Finnish exchange rate policy has moved into the direction of the Austrian hard currency policy, important differences had remained until recently²³⁾. The markka was pegged against a basket of currencies rather than a single currency, the fluctuation margins were fairly wide and, as experience showed in 1989, were adjustable. Thus, some exchange rate flexibility still existed, though in the recent past it has been used only to appreciate the currency.

It has often been argued in Finland that the different economic structure, with a significant share of forestry products and basic metals in Finnish exports, the Finnish economy is exposed to larger swings in its terms of trade than other industrial countries²⁴⁾, and this would warrant greater exchange rate flexibility.

As noted above in the case of Austria, if the exchange rate is to be fixed, other instruments need to be used to achieve adjustment to shocks. The recent experience in Finland suggests

23) With the ECU peg in June 1991 the differences have become fairly small. Indeed, in the absence of EMS-realignments the two pegs are almost identical, except for the fluctuation margin.

24) See Chart 4.

that fiscal policy did not prove to be flexible enough to achieve smooth adjustment to the shocks and prevent overheating; for this reason the exchange rate was still used to support adjustment. However, in evaluating the recent Finnish experience it should be borne in mind that the Finnish economy had been exposed to two significant shocks simultaneously: a large improvement in the terms of trade and a sharp fall in household savings following financial deregulation. It could be argued that the cumulative effects of both shocks were simply too large for fiscal policy to handle.

The greater exchange rate flexibility in Finland compared to Austria, however, had its price. While Austria's policy of limiting exchange rate fluctuations to the absolute minimum had aimed at, and succeeded in, reducing and stabilizing the interest differential vis-a-vis the anchor currency, Finnish interest rates had to be maintained at substantially higher levels than abroad to protect the exchange rate. While this has been welcome during the period of overheating, it will prove to be more painful now that the economy moves through recession. In the beginning of 1991, Finnish money market rates stood at over 14 percent, compared with a weighted average of 11 percent for the basket currencies, and some 9 percent in Austria. This, although Finnish inflation is now at the average rate abroad. Immediately following the announcement of the ECU peg Finnish money market rates declined a little, but remained well above rates in the EMS countries.

3.3. The road to credibility

As the Finnish strategy of using the exchange rate mainly for reducing inflation rather than external adjustment was applied later than the Austrian hard currency policy, its ultimate test is still outstanding.

Nevertheless, the policy resolve was tested in 1986, 1989 and 1991 when on several occasions speculative bouts led to large losses in foreign exchange reserves. These speculative bouts were countered through sharp increases in interest rates. In August 1986, the Bank of Finland decided to raise the call money rate for a brief period to 40 % until speculation subsided²⁵⁾. A further test occurred recently following the general election in mid-March 1991. Interest rates were again allowed to rise significantly to counter exchange market pressure resulting from uncertainties over the attitude of the new government concerning the exchange rate. Interest rates, however, fell again after the government stated to rule out devaluation. Indeed, the recent move to an ECU peg seems to be aimed at solidifying credibility of the Finnish hard currency policy.

25) For an analysis see Hochreiter (1988).

4. Lessons from the Austrian and Finnish experience with their exchange rate pegs

4.1. Credibility has its costs

Credibility is a crucial ingredient for the success of exchange rate policy. The experiences of both Austria and Finland show that credibility has to be earned. In the case of Austria, a substantial real appreciation of the Schilling was accepted for quite some time (some 15 percent from 1972 to 1977; see Chart 5). In order to limit the employment consequences of the real appreciation, fiscal policy was actively used (the so called "Austro-Keynesianism"). As a result the unemployment rate remained very low, below 2 percent of the labor force, but the current account moved into significant deficit and reached 4 1/2 percent of GDP in 1977. Moreover, a substantial loss of official reserves occurred in 1976-77 (Chart 6). This policy approach eventually had to be abandoned, and fiscal policy was tightened substantially to protect the balance of payments. The hard currency policy, however, was continued. An important lesson from this experience seems to be that exchange rate policy must --at least over the medium term-- be validated by domestic economic policies.

In the case of Finland, the policy resolve was tested in 1986, 1989 and recently in March and May 1991 when speculation was squashed through a sharp tightening in monetary conditions. But, as noted above, the ultimate test will require determination of policy makers to adjust other policies to conform to the exchange rate target, also now that the Finnish economy is in recession. As

in the Austrian case, steadfastness in policy in more difficult periods will be a precondition for credibility.

4.2. Some limited independence for economic policy

Pegging the exchange rate for anti-inflation purposes to a low inflation anchor currency or a basket of currencies implies giving up the exchange rate as an instrument of external adjustment, i.e., the exchange rate is no longer available as an instrument to achieve a sustainable balance of payments. Other instruments will have to be used for this purpose. The implications for financial policies are briefly discussed below. Obviously, Austrian monetary policy is constrained by that of Germany; the more so now that the capital account has been liberalized. But even before, the constraint had been quite binding. Indeed, Austrian interest rates have closely followed German rates, with the differential declining as the hard currency policy gained credibility and the financial markets were opened. More recently, German bond yields have risen above Austrian rates, perhaps reflecting uncertainties regarding the implications of German monetary union.

As noted above, an attempt was made in the late 1970s to keep Austrian interest rates below German rates at a time when economic fundamentals would have pointed in the opposite direction. The result was a sharp loss of foreign exchange reserves; the speculation was then successfully countered with intervention and higher interest rates.

Finnish monetary policy is also constrained. But unlike Austria's policy, which is constrained by that of Germany, Finland's policy is constrained by that of the weighted average of the basket currencies. To the extent that Germany's monetary policy is more stringent than the average abroad, Austria's policy would have to be more stringent than Finland's; but inflation would also be lower in Austria than in Finland; this has indeed been the case (Chart 2). The conclusion, therefore, is that there are no fundamental differences in the policy implications of the two pegs; but one peg anchors the economy at a lower rate of inflation than the other. Indeed, the recent ECU peg seems to be aimed at anchoring Finnish inflation also at a lower rate.

Some, though limited, independence of fiscal policy remains. In Austria, the room for manoeuvre was, however, used up in the mid-70s, and eventually fiscal policy had to be adjusted to protect the external current account. In recent years, a policy of fiscal consolidation, with a medium term target for the budget deficit, has been pursued. The important lesson from the Austrian experience seems to be that - over the medium term - fiscal policy needs to be geared at achieving a sustainable balance of payments on current account.

Some limited independence remains also for Finnish fiscal policy but, as noted above, fiscal policy did not prove to be flexible enough to prevent overheating, and a shift of the external balance into a large deficit. Therefore, in the present circumstances the fixed exchange rate seems to imply that fiscal

policy cannot be used to counter the current recession. The conclusion again seems to be that there are no fundamental differences in the implications of the two pegs for fiscal policy. In both cases a limited room for manoeuvre remains; but in both cases there is need to gear policy at least in the medium term at achieving a sustainable current account. In the case of Finland, this would be an important consideration at the present time.

4.3. An exchange rate peg does not imply the import of unemployment from the center country

A crucial question, that is often raised also in connection with the moves towards EMU, is whether pegging the exchange rate implies that the inflation/unemployment trade-off of the anchor country has to be accepted. It has often been argued that this is the case.

Indeed, unemployment is much higher within the EMS than outside (e.g., in EFTA). In 1988, the rate of unemployment in the EC (previous nine) stood at 10 1/2 percent of the labor force; in EFTA at less than 3 percent. Does this reflect that the EMS countries had to accept the German inflation/unemployment trade off?

In order to answer this question a closer look is taken at a sample of small open economies with close economic ties to Germany, but with some differences in economic policies²⁶). The sample consists of the Netherlands and Denmark from the EC, and

26) For details, see Knöbl (1990).

Austria and Sweden from EFTA. Denmark and Sweden have, in the past, made use of the exchange rate as an instrument of external adjustment; while Austria and the Netherlands, through the close link of their currencies to the DM, have used the exchange rate mainly as an instrument to hold down inflation. However, since late 1982, the exchange rate in all four countries has remained more or less fixed, either against a basket or the DM. Also, after an initial expansionary phase, all four countries have aimed at fiscal consolidation, though at varying degrees, with the fiscal adjustment the most striking in Denmark and Sweden.

Following the second oil price shock, inflation did come down in all four countries, though more in the Netherlands and Austria than in Denmark and Sweden: the close link to the DM seems to account for this. More recently, inflation performance in Denmark has matched that of Germany, reflecting the close link of the Krone to the DM in recent years. On the other hand, in an overheated economy, inflation has been rising significantly in Sweden since 1988.

Unemployment is much less in Sweden and Austria than in Denmark and the Netherlands. What can account for these differences? It seems that differences in fiscal policy cannot account for it. The strongest fiscal adjustment occurred in Sweden and Denmark; relatively little in Austria and the Netherlands, countries with quite divergent unemployment performances. Monetary policy also can hardly account for the differences. Interest rates have tended to converge in the 1980s, reflecting the tendencies toward

greater internationalisation of financial markets and greater fixity of exchange rates.

Exchange rate policy seems to account for the differences in inflation performance; and seems to have been a factor in the better employment performance of Sweden, as part of the competitive gain from the devaluations of 1981 and 1982 was protected²⁷⁾. But the differences in the development of unemployment in countries with similar exchange rate policies (Austria and the Netherlands on the one hand, and Denmark and Sweden on the other) are remarkable.

It seems that differences in structural characteristics, relating to flexibility in the labor market, are responsible for the bulk in the differences in unemployment performance. Indeed, labor market flexibility, measured as real wage flexibility, is estimated to be substantially higher in Austria and Sweden, where unemployment is much lower than in Denmark and the Netherlands.

The estimated long run inflation elasticities in the augmented Phillips curves are close to unity in all four countries²⁸⁾. This would imply that in the long run the real exchange rate could not be changed by nominal exchange rate movements. This is indeed the core assumption of Austria's hard currency policy.

The conclusion seems to be clear: the experiences of these four countries suggest that pegging the exchange rate does not imply that the inflation/unemployment trade off of the anchor

27) At least through 1988; by now all of it has been lost.

28) See Knöbl (1990).

country has to be accepted; at least not in the longer run, when the structural characteristics of the labor markets dominate²⁹⁾.

5. Concluding remarks

In this paper we have analyzed the evolution of exchange rate strategies in Austria and Finland since 1973. Whereas Austria pioneered the use of the exchange rate as an instrument to achieve a lower inflation path in 1974, Finland continued to employ it as a means to ensure international price competitiveness of Finnish products. In the 1980s Finland has shifted its exchange rate strategy to one more similar to Austria. Indeed, with the decision of the Finnish authorities to peg the markka to the ECU in June 1991, the DM peg of the Austrian Schilling and the ECU peg of the markka are, in the absence of EMS-realignments, almost identical.

The decision to peg and to maintain the peg implies that the domestic economy has to adjust to foreign and domestic shocks because the exchange rate is no longer available as an instrument to support adjustment. In the past the flexibility of the Austrian economy to react to shocks appears to have been higher than in Finland, while the shocks to the Finnish economy have been larger, explaining, in part, the different pegs adopted. The recent decision to peg the markka to the ECU poses a challenge in this regard.

29) It is interesting to note that although the Schilling was continuously pegged to the DM (with even a 4 1/2 percent appreciation of the Schilling against the DM since the inception of the EMS in 1979), Austrian unemployment has remained well below German levels throughout the 1980s.

The following lessons for exchange rate policy emanate from the Austrian and Finnish experience: First, earning credibility takes time and is not costless. While Austria's exchange rate policy by now appears to be fully credible, the ultimate test for the Finnish exchange rate policy is still to come. Second, even with an exchange rate peg some limited independence for fiscal policy remains, it is constrained, however, by the need to secure a sustainable current account in the medium term. Third, an exchange rate peg does not necessarily imply the import of unemployment from the center country. Finally, the choice of the peg, in the long run, determines the inflation path but not the development of the real economy.

July 23, 1991

B i b l i o g r a p h y

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- Akerholm, J. (1987): "Fixed Exchange Rate Policy in Finland", Bank of Finland Monthly Bulletin, Vol.62, No 6.
- Akerholm, J. (1988): "Exchange Rate Policy: The Experience of the Nordic Countries - A Comment", mimeo.
- Argy, V., McKibbin, W. and Siegloff, E. (1989): "Exchange Rate Regimes For a Small Economy In a Multi-Country World", Princeton Studies in International Finance, No 67.
- Arndt, S., Ed., (1982): "The Political Economy of Austria", American Enterprise Institute, Washington DC., 1982.
- Austrian National Bank: Annual Report 1979.
- Bank of Finland: Annual Report, various issues.
- Bank of Finland: Monthly Bulletin, various issues.
- Dockner, N. und Sitz. A. (1986): "An Investigation into Austrian Export Pricing: Price Taking or Price Setting of a Small Open Economy?" *Empirica* 13(2), 1986.
- Financial Times May 22, 1990.
- Flanders, J.J. and Helpmann, E. (1979): "An Optimal Exchange Rate Peg in a World of Generalized Floating", *Review of Economic Studies*, Vol. 46, 1979.
- Flood, R.P. (1979): "Capital Mobility and the Choice of an Exchange Rate System", *International Economic Review*, Vol.20, 1979.
- Frenkel, J.A. and Johnson, H.B. (1976), Ed.: "The Monetary Approach to the Balance of Payments", Allen and Unwin Ltd., Old Woking, Surrey, 1976.
- Frenkel, J.A. and Razin, A. (1987): "The Mundell-Fleming Model A Quarter Century Later: A Unified Exposition", *Staff Papers*, Vol, 34, No.4, December 1987.

- Frisch, H. (1983): "Stabilization Policy in Austria 1970-80", in: De Cello, M. (Ed.), "International Economic Adjustment - Small Countries and the European Monetary System. Basil Blackwell, Oxford, 1983.
- Genberg, H. (1989): "In the Shadow of the Mark: Exchange Rate and Monetary Policy in Austria and Switzerland", in Argy, V. and De Grauwe, P. (eds.) "Choosing an Exchange Rate Regime: The Challenge for Smaller Industrial Countries", International Monetary Fund, Washington D.C., 1990.
- Giovannini, M. (1990): "The Transition to Monetary Union", Centre for Economic Policy Research, London 1990; quoted in IMF-Survey Nr.13, Vol.19, July 2, 1990.
- Handler, H. (1989): "Grundlagen der österreichischen Hartwährungs politik", Recht-Wirtschaft-Außenhandel. Band 14. Hrsg.: Doralt, P. und Haschek, H.H., Manz, Wien, 1989.
- Hochreiter, E. (1981): "Wechselkurspolitik und Wettbewerbsfähigkeit - Eine längerfristige Analyse für Österreich 1967-1978", Schriftenreihe der Bundeswirtschaftskammer, Nr.42.
- Hochreiter, E. (1988): "Währungspolitik kleiner offener Volkswirtschaften bei hoher Kapitalmobilität", Wirtschaftspolitische Blätter, Nr.1, 1988, 76-83.
- Hochreiter, E.(1990): "The Austrian National Bank Act - What Does it Say About Monetary Policy?" - Konjunkturanalysen Nr.3, 1990, DIW, Berlin.
- Hochreiter, E. and Schubert, A. (1990): "The Management of Economic Power in Selected OECD-Countries - Austria, Australia, Canada and Sweden -" in Salvatore, D. (Ed.) Comparative Handbook of National Economic Policies, Chapter 5, Greenwood Press, New York, forthcoming.
- Hochreiter, E. and Törnqvist, A. (1990): "Austria's Monetary and Exchange Rate Policy - Some Comparative Remarks With Respect to Sweden -", De Pecunia Nr.4, 1990, Brussels.
- Hochreiter, E. and Winckler, G. (1991): "Signaling a Hard Currency Strategy: The Case of Austria", forthcoming.

- Hirsch, F. (1970): "An Indicator of Effective Exchange Rates", IMF Staff Papers, Vol.17, No.3, 453-487.
- Kienzl, H. (1987): "Why Peg the Schilling to the D-Mark?", Austria Today, No.1/1987.
- Knöbl, B. (1990): "EC-EFTA: Why Does Unemployment Differ?", WIFO-Working Paper No.38, 1990.
- Kotilainen, M. and Peura, T. (1988): "Finland's Exchange Rate Regime and European Integration", Bank of Finland Discussion Papers, 33/88.
- Lehmussaari, O.: (1990): "Deregulation and Consumption - Saving Dynamics in the Nordic Countries", IMF Staff Papers, Vol.37, No. 1, 71-93.
- Lehmussaari, O.: (1991): "Experience With Managing the Exchange Rate of the Markka Within the Currency Band", Bank of Finland Bulletin, Vol.65, No.3, March 1991, 3-8.
- Lipschitz, L. and Sundararajan, V. (1980): "The Optimal Basket in a World of Generalized Floating", IMF Staff Papers, Vol.27, 1980.
- Marin, D. (1985): "Structural Change Through Exchange Rate Policy", Weltwirtschaftliches Archiv, Band/21, Heft 3, 1985.
- Rich, G. (1989): "Comments on: In the Shadow of the Mark: Exchange Rate and Monetary Policy in Austria and Switzerland", in Argy, V. and De Grauwe, P. (eds.) "Choosing an Exchange Rate Regime: The Challenge for Smaller Industrial Countries", International Monetary Fund, Washington D.C., 1990.
- Seidel, H. (1982): "Austro-Keynesianismus", Wirtschaftspolitische Blätter, Nr.1, 1982, 11-15.
- Sitz, A. (1981): "Wechselkurse und Produktionsstruktur", Quartalshefte der Girozentrale, Vol.16, 1981.
- Swoboda, A.K. (1986): "Ongoing Changes in Finnish Financial Markets and Their Implications for Central Bank Policy", Bank of Finland, A:62, 1986.

Whitman von N.M. (1975): "Global Monetarism and the Monetary Approach to the Balance of Payments", *Brooking Papers on Economic Activity*, 3:1975.

Winckler, G. (1980): "Das Ende der aktiven Nominalzinspolitik in Österreich", *Wirtschaftsanalysen der Ersten*, Nr.4, 1980.

Winckler, G. (1989): "Geld und Währung", in Abele H., Nowotny E., Schleicher S., Winckler G.; Eds: "Handbuch der österreichischen Wirtschaftspolitik", 3.Auflage, Manz, Wien, 1989.

Uebersicht I04

AUSLANDSBUERO

 PRODUCTIVITY IN INDUSTRY IN SELECTED COUNTRIES +)
 1979 = 100

I	OESTERR	BELGIEN	DEUTSCHL	FINNL	FRANKR	GROSSER	ITALIEN	JAPAN	NIEDERL	SCHWED	SCHWEIZ	SPANIEN	U S A
J1979 I	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
J1980 I	102.0	106.1	101.1	105.1	101.1	98.6	105.5	103.5	103.0	103.0	103.8	106.0	102.3
J1981 I	102.7	112.4	102.5	105.5	102.4	103.7	107.6	103.6	107.2	104.1	101.8	109.1	104.5
J1982 I	106.7	116.2	103.2	109.0	105.7	109.5	107.2	103.6	110.4	111.3	99.8	117.7	109.6
J1983 I	113.1	118.5	107.9	114.5	110.0	117.9	108.3	106.8	117.5	121.3	105.1	125.8	114.3
J1984 I	119.0	122.6	112.4	122.2	112.8	123.1	114.2	113.8	124.6	127.0	110.3	133.3	118.4
J1985 I	124.6	128.1	116.5	125.9	115.8	126.3	119.1	116.7	128.3	130.0	114.8	141.3	122.6
J1986 I	129.0	130.9	118.2	130.6	119.1	131.0	123.8	115.9	129.0	130.1	118.9	146.8	127.5
J1987 I	133.5	135.5	120.6	141.1	124.1	138.4	130.0	121.0	129.9	134.8	120.8	149.0	139.0
J1988 I	144.2	146.1	126.2	153.2	132.3	145.9	135.7	130.2	136.1	138.3	130.8	149.0	142.9
J1989 I	152.8	151.4	130.0	156.8	136.7	152.6	138.6	137.3	140.2	142.1	137.5	155.4	147.7
J1990 I	163.6	155.7	134.6	157.5	137.5	156.5	140.5	142.7	144.5	147.2	141.0	151.5	147.7

+) AUSTRIA'S 12 MOST IMPORTANT OECD TRADING PARTNERS

Uebersicht K36/ATSF1ENGL1

AUSLANDSBUERO

FUNDAMENTALS COMPARISON AUSTRIA - FINLAND

	AUSTRIA	FINLAND	AUSTRIA	FINLAND	AUSTRIA	FINLAND
I						
I						
I						
I						
	NET BUDGET IN	NET BUDGET IN	CURR. ACCT. IN	CURR. ACCT. IN	CONSUMER PRICES	CONSUMER PRICES
	% OF NOM. GDP	% OF NOM. GDP	% OF NOM. GDP	% OF NOM. GDP	IN %	IN %
					PREV. YR.	PREV. YR.
J1970 I	-4.6	.9	-4.4	-2.2	4.4	4.5
J1971 I	-4.4	.7	-4.5	-2.8	4.7	6.2
J1972 I	-3.3	1.2	-7.7	-1.8	6.3	6.8
J1973 I	-1.3	2.9	-1.0	-4.9	7.6	10.9
J1974 I	-1.9	.8	-1.4	-7.5	9.5	17.0
J1975 I	-4.5	-2.2	-5	-3.7	8.4	17.5
J1976 I	-4.6	-0	-2.6	-3	7.3	14.7
J1977 I	-3.8	-1.5	-4.4	-3	5.5	12.6
J1978 I	-4.2	-1.6	-1.1	1.9	3.6	7.5
J1979 I	-3.5	-2.5	-1.5	-4	3.7	7.9
J1980 I	-2.9	-2.2	-2.1	-2.7	6.4	11.3
J1981 I	-2.6	-1.9	-2.0	-1.0	6.8	12.3
J1982 I	-4.1	-2.1	1.1	-1.9	5.4	9.5
J1983 I	-5.5	-2.9	.3	-2.3	3.3	8.3
J1984 I	-4.5	-1.0	-3	-1	5.6	7.0
J1985 I	-4.5	-1.0	-2	-1.4	3.2	5.8
J1986 I	-5.2	.1	.3	-1.0	1.7	3.0
J1987 I	-4.7	-1.7	-2	-1.9	1.4	4.0
J1988 I	-4.2	.4	-2	-2.6	2.0	5.2
J1989 I	-3.7	2.0	.1	-5.0	2.5	6.6
J1990 I	-3.5	.	.5	-4.8	3.3	6.1

SOURCE: OECD, IFS, NATIONAL SOURCES

Uebersicht K36/ATSF1ENGL1

AUSLANDSBUERO

FUNDAMENTALS COMPARISON AUSTRIA - FINLAND

%-CHANGE AGAINST PREVIOUS YEAR: AVERAGES

I I I I	AUSTRIA	FINLAND	AUSTR-FINL		AUSTR-FINL LONG-TERM INTER.DIFF**)	AUSTRIA		FINLAND		AUSTRIA	FINLAND
			UNIT LABOR CHANGE IN %	COST INTER. DIFF.*)		SHORT-TERM INTER. DIFF.*)	M2' % PR. YR.	M1' % PR. YR.	M2 % PR. YR.			M1 % PR. YR.
J1970 I	4.1	.	.	.	.	6.0	14.0	15.5	7.7	10.3	10.5
J1971 I	7.4	.	.	.	.	11.5	12.0	16.5	10.3	16.8	23.3
J1972 I	3.1	.	.	.	.	17.3	16.5	15.5	16.8	12.6	19.3
J1973 I	12.2	.	.	.	.	14.2	15.5	15.6	6.3	11.0	17.7
J1974 I	6.1	.	.	.	.	6.6	12.2	13.9	12.6	7.3	32.6
J1975 I	16.1	6.1	-14.0	.	.	12.2	14.1	15.0	11.4	4.6	14.4
J1976 I	2.4	-5.9	-9.9	.	.	14.1	10.2	15.3	4.6	11.5	11.4
J1977 I	4.9	-14.8	-5.3	.	.	10.2	6.9	10.9	-1.5	16.5	16.5
J1978 I	.7	-1.3	-3.7	.	.	12.1	12.1	14.5	1.6	2.2	321.6
J1979 I	-6	1.7	-2.1	-1.2	-1.2	-0	10.9	14.7	2.2	2.3	11.6
J1980 I	4.7	4.1	-1	-4	-4	1.0	14.5	12.9	13.4	8.7	8.7
J1981 I	7.2	3.3	-2.9	-1.1	-1.1	6.7	13.1	15.7	4.0	8.5	8.5
J1982 I	2.4	-2.2	-9.3	-2.6	-2.6	11.6	15.7	14.1	1.5	9.3	9.3
J1983 I	-6	4.5	-9.9	-3.1	-3.1	5.3	14.1	12.2	4.5	9.3	9.3
J1984 I	-1.0	1.1	-7.3	-2.9	-2.9	7.9	17.3	17.3	9.5	7.5	7.5
J1985 I	1.6	-3.3	-7.4	-1.0	-1.0	13.7	14.0	17.3	5.8	4.1	4.1
J1986 I	2.8	-7	-6.8	-6	-6	5.4	7.5	7.5	7.5	7.5	7.5
J1987 I	1.4	1.9	-6.9	-6.5	-6.5	1.8	7.5	7.5	7.5	7.5	7.5
J1988 I	-4.3	5.1	-6.5	-6.5	-6.5	1.8	7.5	7.5	7.5	7.5	7.5
J1989 I	-1.1	.	-6.5	-6.5	-6.5	1.8	7.5	7.5	7.5	7.5	7.5
J1990 I	.0	.	-6.5	-6.5	-6.5	1.8	7.5	7.5	7.5	7.5	7.5

*) TABELLSAEITZE (MONATSDURCHSCHNITTE)
**) REGIERUNGSANLEIHEN (MONATSDURCHSCHNITTE)
+) M1 = BARGLD MINUS GOLD- U. SILBERMUNZEN
PLUS SICHEITLAGE BEI FKU

Uebersicht K36/ATSF1ENGL1

AUSLAND-SEUER

FUNDAMENTALS COMPARISON AUSTRIA - FINLAND

	AUSTRIA	FINLAND	AUSTRIA	FINLAND	AUSTRIA	FINLAND	AUSTRIA	FINLAND
I	INDUSTRIAL PROD. %	PREV. YR.	REAL GDP	% PREV. YR.	UNEMPLOYMENT	RATE	UNEMPLOYMENT	RATE
J1970 I	6.7	11.9	6.4	7.5	1.2	1.9	1.2	1.9
J1971 I	5.9	1.5	5.1	2.1	1.1	2.2	1.1	2.2
J1972 I	6.1	11.8	6.2	7.6	1.0	2.5	1.0	2.5
J1973 I	3.7	7.1	4.9	6.7	1.0	2.3	1.0	2.3
J1974 I	5.5	4.8	3.9	3.0	1.2	1.7	1.2	1.7
J1975 I	-6.3	-2.8	-4.4	1.2	1.5	2.2	1.5	2.2
J1976 I	6.6	.7	4.6	.3	1.6	3.9	1.6	3.9
J1977 I	3.9	.6	4.5	.1	1.4	5.9	1.4	5.9
J1978 I	2.0	4.9	.1	2.2	1.7	7.3	1.7	7.3
J1979 I	7.7	11.3	4.7	7.3	1.7	6.0	1.7	6.0
J1980 I	2.7	6.2	2.9	5.3	1.5	4.7	1.5	4.7
J1981 I	-1.6	2.4	-3	1.6	2.1	4.9	2.1	4.9
J1982 I	.8	.8	1.1	3.6	3.1	5.4	3.1	5.4
J1983 I	1.0	3.2	2.0	3.0	3.7	5.4	3.7	5.4
J1984 I	5.3	4.8	1.4	3.1	3.8	5.2	3.8	5.2
J1985 I	4.5	4.1	2.5	3.3	3.6	5.0	3.6	5.0
J1986 I	1.0	1.0	1.2	2.1	3.1	5.4	3.1	5.4
J1987 I	-4	4.2	2.0	4.0	3.8	5.1	3.8	5.1
J1988 I	6.4	5.2	3.9	5.4	3.6	4.5	3.6	4.5
J1989 I	5.8	2.6	4.0	5.2	3.2	3.5	3.2	3.5
J1990 I	6.4	-1.5	4.6	.0	3.3	3.4	3.3	3.4

+) SAISONBEREINIGT
SOURCE: DECP, IFS, NATIONAL SOURCES; UNEMPL.-RATES ACC. OECD

Uebersicht D51/DM12EBE1

 AUSLANDSBUERO

 EXCHANGE RATE DEVELOPMENTS OF SELECTED CURRENCIES
 V I S A V I S T H E D M *

	J1979	J1980	J1981	J1982	J1983	J1984	J1985	J1986	J1987	J1988	J1989	J1990
100 ATS ...DM												
YEARLY AVERAGE	13.71	14.05	14.19	14.23	14.21	14.22	14.23	14.22	14.22	14.22	14.21	14.21
MAXIMUM	13.90	14.13	14.27	14.27	14.24	14.25	14.24	14.25	14.23	14.24	14.23	14.22
MINIMUM	13.58	13.92	14.12	14.19	14.19	14.18	14.23	14.21	14.21	14.22	14.20	14.20
STAND. DEVIATION	.13	.08	.06	.02	.02	.02	.00	.01	.01	.01	.01	.00
VAR. COEFFICIENT	.93	.53	.43	.17	.11	.16	.03	.09	.06	.05	.05	.03
100 FM ...DM												
YEARLY AVERAGE	47.16	48.85	52.46	50.59	45.87	47.39	47.44	42.79	40.88	41.95	43.83	42.24
MAXIMUM	47.70	51.07	54.13	52.48	46.95	48.21	48.27	45.11	41.41	42.48	44.90	42.73
MINIMUM	46.53	46.68	50.96	45.25	44.33	46.28	45.86	40.65	40.10	41.00	42.25	41.41
STAND. DEVIATION	.42	1.32	1.04	2.65	.90	.63	.80	1.59	.46	.46	.83	.35
VAR. COEFFICIENT	.88	2.70	1.98	5.24	1.95	1.32	1.70	3.71	1.12	1.11	1.90	.82
EC - CURRENCIES												
100 HFL ...DM												
YEARLY AVERAGE	91.38	91.46	90.61	90.90	89.50	88.70	88.66	88.64	88.74	88.86	88.65	88.75
MAXIMUM	92.64	92.29	92.03	91.71	90.83	88.98	88.91	88.82	88.87	89.24	88.77	88.91
MINIMUM	89.81	90.58	89.90	90.01	88.79	88.59	88.33	88.48	88.54	88.58	88.57	88.64
STAND. DEVIATION	1.02	.61	.76	.55	.64	.12	.19	.13	.12	.24	.06	.08
VAR. COEFFICIENT	1.12	.67	.84	.61	.72	.13	.22	.14	.13	.27	.07	.09
100 EF ...DM												
YEARLY AVERAGE	6.25	6.22	6.09	5.33	5.00	4.93	4.96	4.86	4.81	4.78	4.77	4.84
MAXIMUM	6.34	6.25	6.22	5.88	5.10	4.98	5.00	4.91	4.83	4.79	4.78	4.87
MINIMUM	6.15	6.15	5.91	5.10	4.91	4.88	4.90	4.81	4.77	4.77	4.76	4.77
STAND. DEVIATION	.06	.03	.09	.24	.07	.03	.02	.04	.02	.01	.01	.03
VAR. COEFFICIENT	1.04	.56	1.54	4.58	1.31	.64	.50	.79	.37	.13	.15	.64
100 DER ...DM												
YEARLY AVERAGE	34.85	32.24	31.74	29.16	27.93	27.46	27.77	26.82	26.28	26.09	25.72	26.12
MAXIMUM	36.08	32.59	32.51	30.59	28.40	27.90	27.99	27.28	26.58	26.30	25.83	26.27
MINIMUM	32.27	31.99	30.84	28.38	27.62	27.21	27.55	26.44	25.91	25.90	25.65	25.80
STAND. DEVIATION	1.12	.22	.50	.75	.25	.21	.17	.31	.27	.13	.05	.15
VAR. COEFFICIENT	3.22	.67	1.58	2.58	.89	.77	.61	1.15	1.04	.50	.18	.59
100 FF ...DM												
YEARLY AVERAGE	43.08	43.01	41.64	37.04	33.56	32.57	32.76	31.32	29.90	29.48	29.47	29.68
MAXIMUM	43.58	43.27	43.26	39.36	35.28	32.71	32.88	32.59	30.05	29.67	29.61	29.86
MINIMUM	42.62	42.67	39.51	35.30	32.73	32.44	32.67	30.45	29.44	29.27	29.27	29.38
STAND. DEVIATION	.37	.20	1.26	1.67	.90	.07	.06	.83	.20	.14	.11	.17
VAR. COEFFICIENT	.85	.47	3.02	4.52	2.69	.21	.17	2.67	.69	.49	.37	.57

*) NO DATA AVAILABE FOR GREEK DRACHMA

Uebersicht D51/DM12EGE1

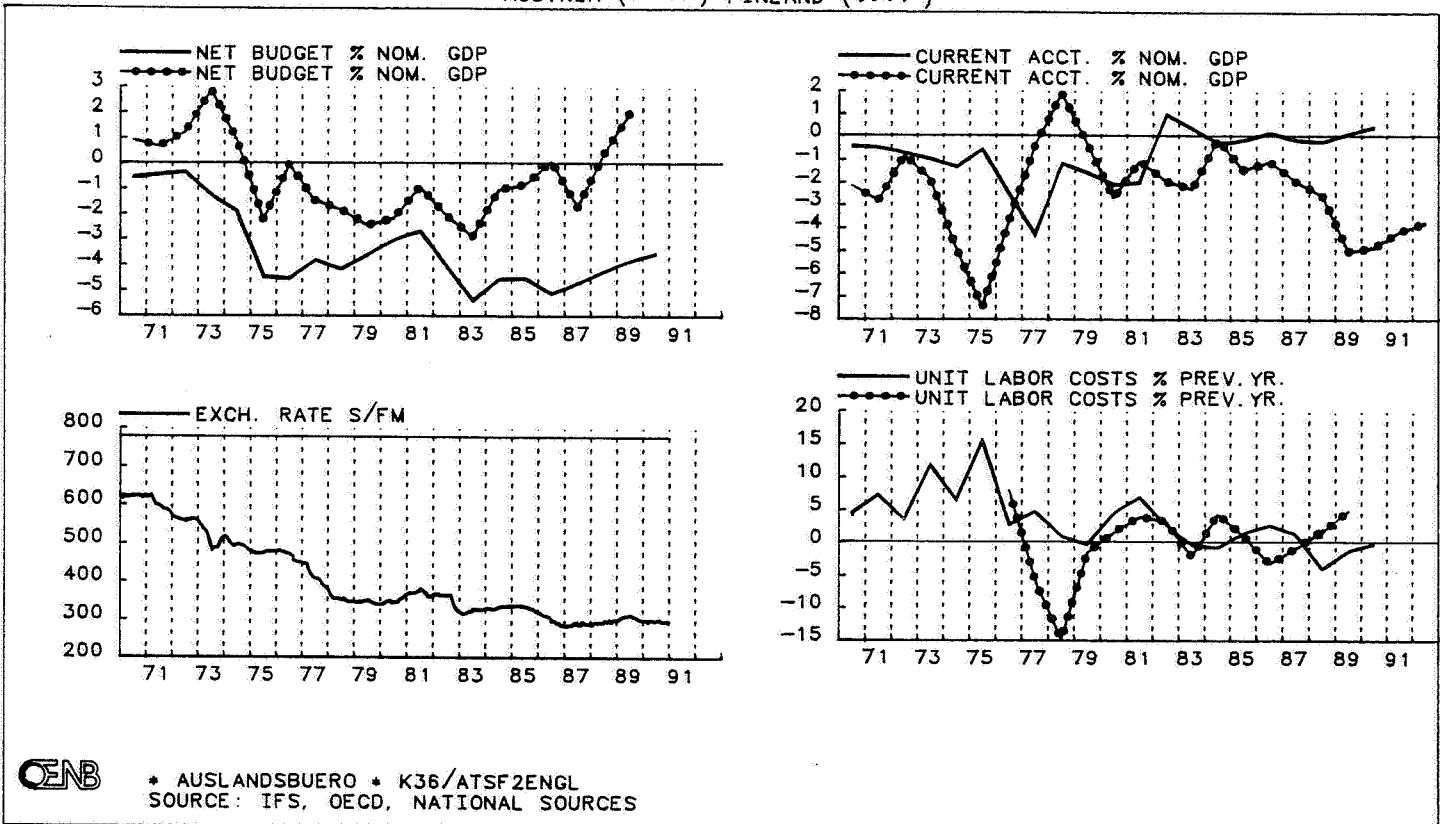
 AUSLANDSBUERO

 EXCHANGE RATE DEVELOPMENTS OF SELECTED CURRENCIES
 V I S A V I S T H E D M

	J1979	J1980	J1981	J1982	J1983	J1984	J1985	J1986	J1987	J1988	J1989	J1990
1000 LIT ...DM												
YEARLY AVERAGE	2.21	2.12	1.99	1.80	1.66	1.62	1.54	1.46	1.39	1.35	1.37	1.35
MAXIMUM	2.24	2.16	2.11	1.67	1.74	1.65	1.63	1.47	1.41	1.36	1.39	1.36
MINIMUM	2.14	2.10	1.87	1.73	1.64	1.61	1.47	1.44	1.36	1.34	1.35	1.33
STAND.DEVIATION	.04	.02	.08	.05	.03	.01	.06	.01	.02	.01	.01	.01
VAR.COEFFICIENT	1.63	.96	3.99	2.52	1.79	.62	3.68	.66	1.28	.45	.98	1.02
100 PTA ...DM												
YEARLY AVERAGE	2.73	2.54	2.45	2.22	1.78	1.77	1.73	1.55	1.46	1.51	1.59	1.59
MAXIMUM	2.89	2.67	2.51	2.35	1.89	1.81	1.81	1.60	1.52	1.55	1.61	1.63
MINIMUM	2.61	2.44	2.33	1.92	1.72	1.74	1.61	1.48	1.42	1.47	1.55	1.54
STAND.DEVIATION	.08	.07	.07	.11	.05	.02	.07	.04	.03	.02	.02	.03
VAR.COEFFICIENT	2.99	2.91	2.89	4.90	2.87	1.06	4.32	2.66	2.27	1.25	1.23	1.82
1 IR L ...DM												
YEARLY AVERAGE	.	3.73	3.64	3.45	3.18	3.08	3.11	2.91	2.67	2.67	2.67	2.67
MAXIMUM	.	3.78	3.73	3.53	3.32	3.12	3.13	3.04	2.68	2.69	2.68	2.68
MINIMUM	.	3.70	3.54	3.33	3.10	3.06	3.08	2.72	2.66	2.66	2.64	2.64
STAND.DEVIATION	.	.03	.06	.06	.08	.02	.02	.15	.01	.01	.01	.01
VAR.COEFFICIENT	.	.69	1.59	1.64	2.46	.62	.56	5.17	.29	.33	.42	.51
1 L ...DM												
YEARLY AVERAGE	3.89	4.23	4.56	4.24	3.87	3.79	3.78	3.19	2.94	3.12	3.08	2.88
MAXIMUM	4.12	4.62	4.92	4.37	4.01	3.96	4.02	3.48	2.99	3.21	3.25	2.98
MINIMUM	3.71	3.90	4.15	3.92	3.59	3.68	3.58	2.86	2.79	2.98	2.78	2.76
STAND.DEVIATION	.14	.23	.26	.12	.13	.07	.14	.23	.07	.08	.15	.08
VAR.COEFFICIENT	3.51	5.35	5.67	2.73	3.41	1.97	3.59	7.35	2.44	2.43	4.77	2.86
100 ESC ...DM												
YEARLY AVERAGE	3.76	3.64	3.68	3.08	2.33	1.94	1.72	1.45	1.27	1.22	1.19	1.13
MAXIMUM	3.97	3.73	3.80	3.45	2.63	2.07	1.84	1.55	1.30	1.23	1.22	1.14
MINIMUM	3.48	3.46	3.47	2.63	2.09	1.84	1.57	1.34	1.22	1.20	1.14	1.13
STAND.DEVIATION	.16	.07	.13	.29	.21	.06	.09	.08	.03	.01	.02	.00
VAR.COEFFICIENT	4.29	2.04	3.52	9.33	9.07	3.29	5.31	5.19	2.00	.69	2.02	.31

FUNDAMENTALS COMPARISON AUSTRIA - FINLAND

 AUSTRIA (—) FINLAND (—●—)

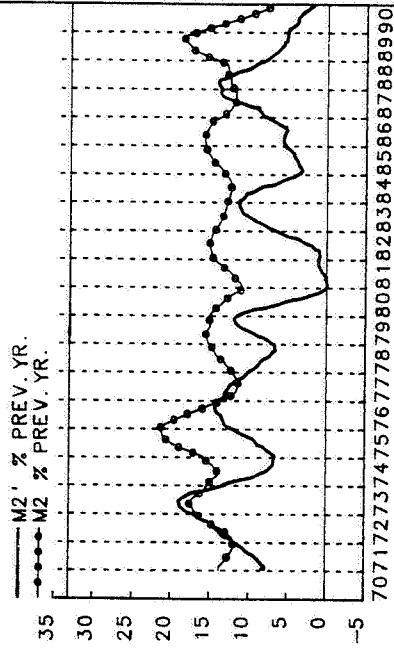
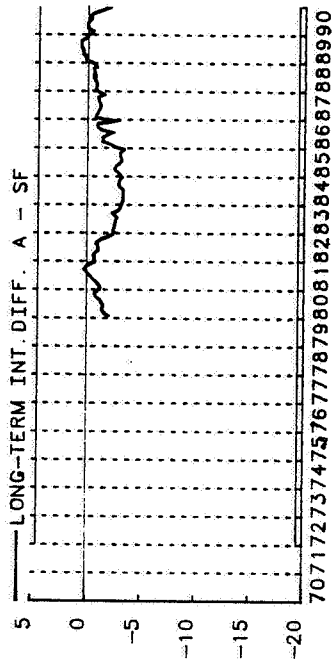
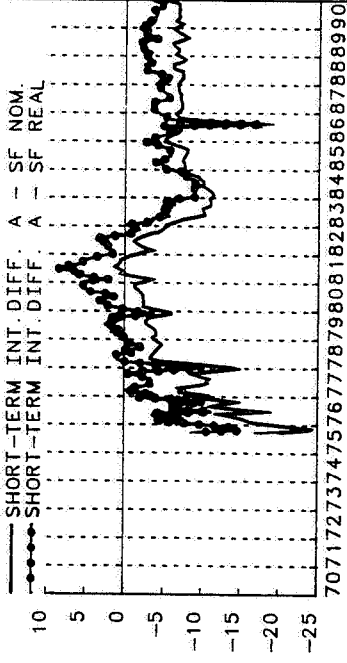
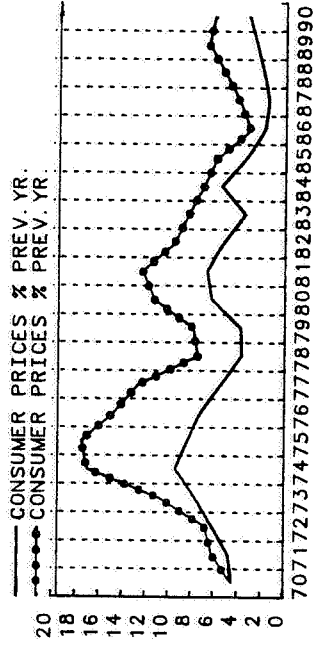


* AUSLANDSBUERO * K36/ATSF2ENGL
 SOURCE: IFS, OECD, NATIONAL SOURCES

24.2.91

FUNDAMENTALS COMPARISON AUSTRIA - FINLAND

 AUSTRIA (——) FINLAND (*****)

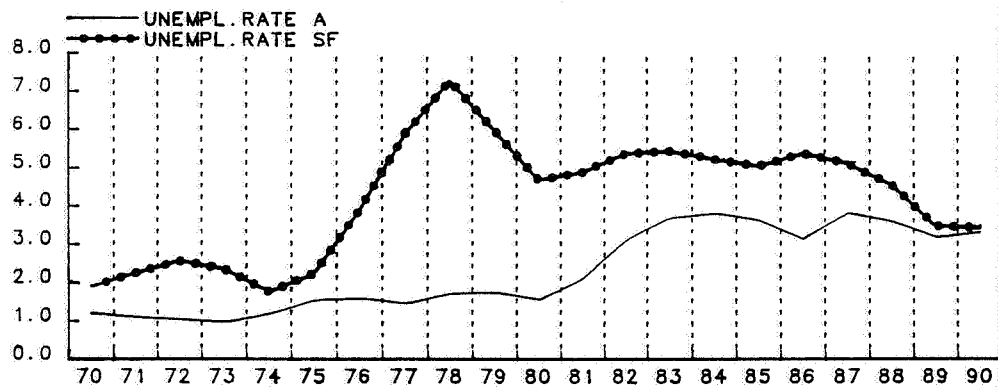
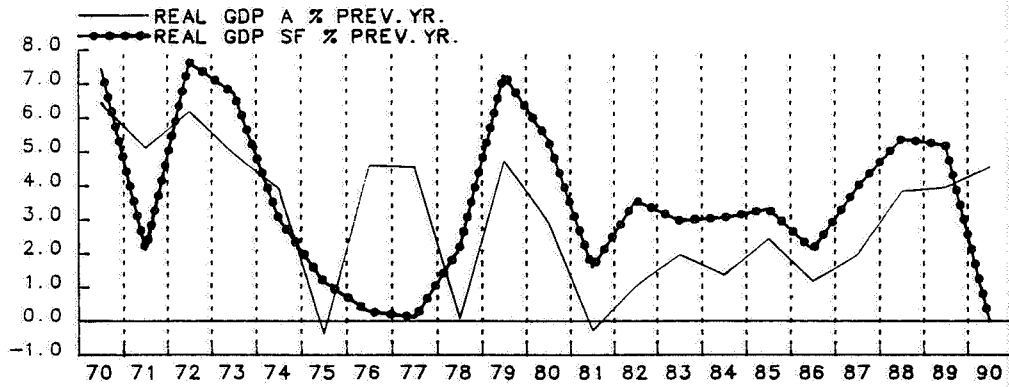
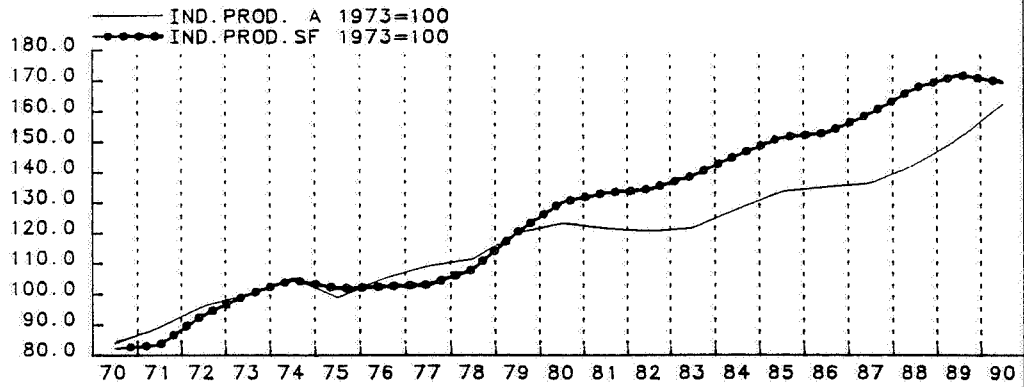


* AUSLANDSBUERO * K36/ATSFJENGL1
 SOURCE: OECD, NATIONAL SOURCES

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FUNDAMENTALS COMPARISON AUSTRIA - FINLAND

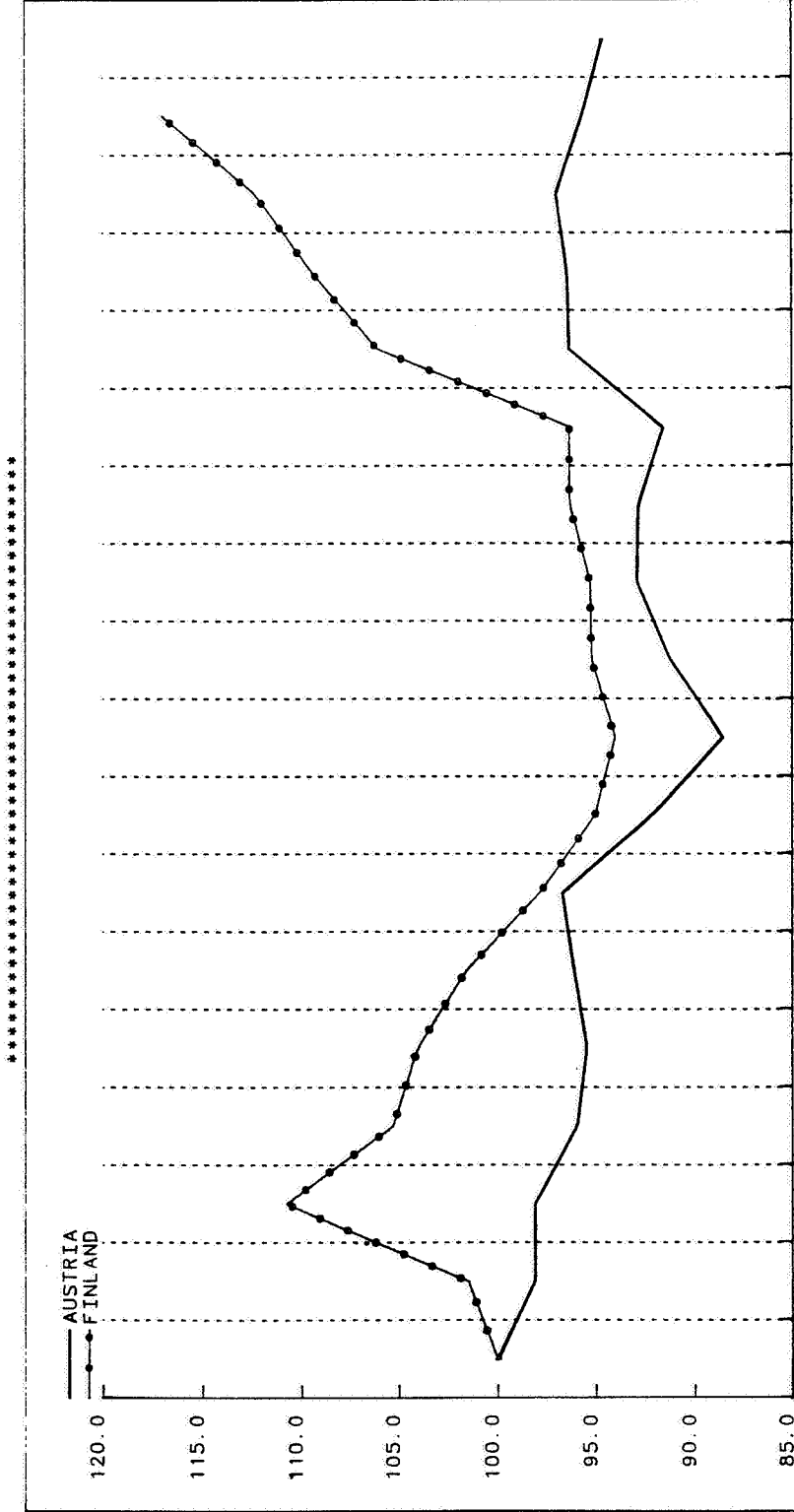
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 SOURCE: OECD, NAT. SOURCES;
 UNEMPL. RATES ACC. OECD

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COMPARISON OF TERMS OF TRADE
AUSTRIA - FINLAND
1973 = 100



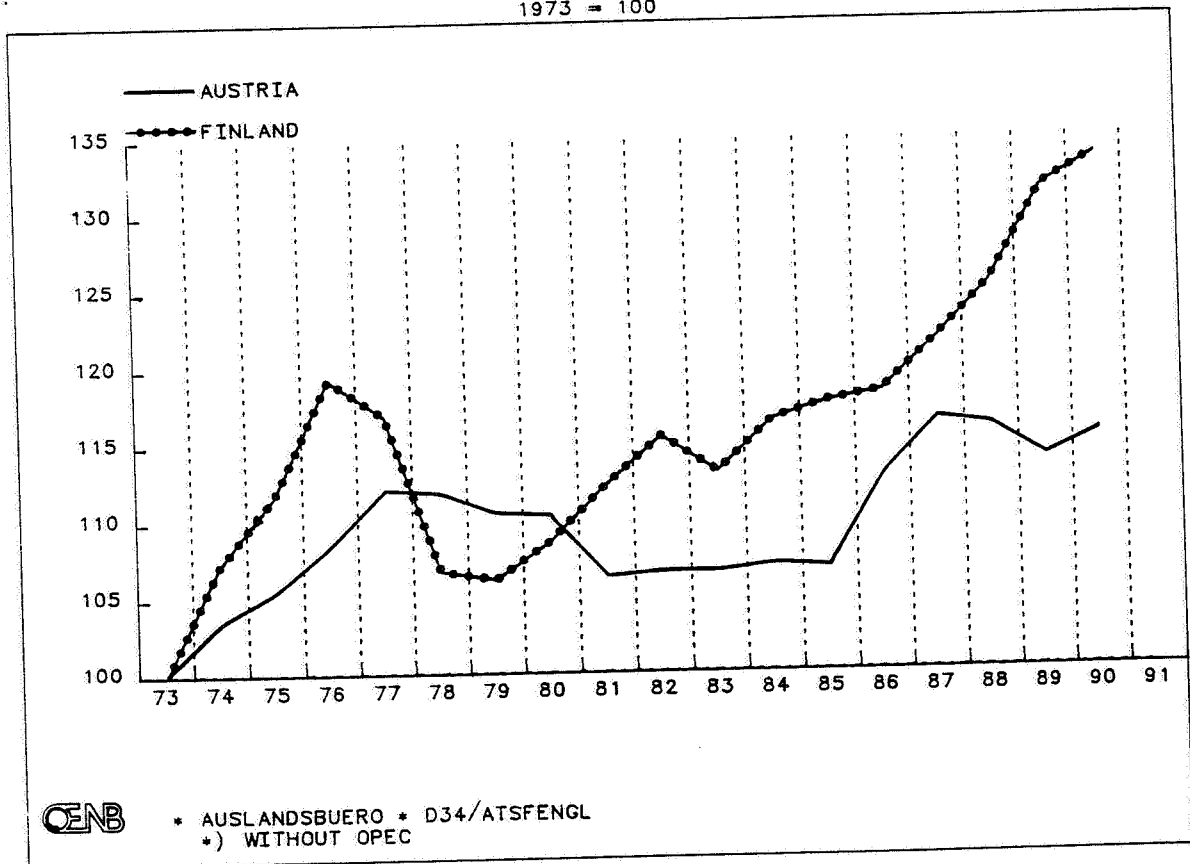


* AUSLANDSBUERO * P 17/ATSFZ ENGL
SOURCE: IFS, NAT. SOURCE

04/7 197

REAL EFFECTIVE EXCHANGE RATE *)

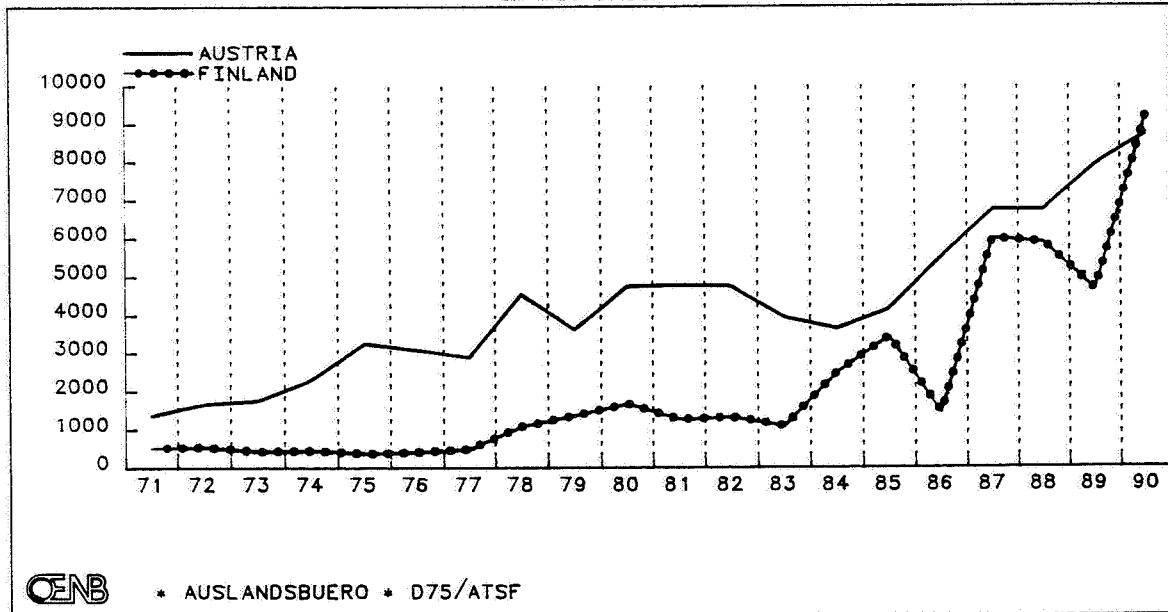
 1973 = 100



24.7 91

FOREIGN EXCHANGE RESERVES

 IN MIO DOLLAR



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