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In Memoriam Karl Waldbrunner 1906–1980
First Vice President of the Oesterreichische Nationalbank

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From Bretton Woods to the Euro: the Evolution of Austrian Monetary Policy from 1969 to 1999

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1. Introduction

The objective of this introductory chapter is to provide the background for the papers presented at the symposium "From Bretton Woods to the Euro – Austria on the Road to European Integration" in order to make it accessible to an international audience. The symposium was held in memoriam of Karl Waldbrunner, who held the office of the First Vice President of Oesterreichische Nationalbank (OeNB) between 1972 and 1980, when the new stability oriented Austrian economic policy framework was developed.

Streissler (1998) argues that only four countries managed to maintain a foreign exchange rate peg after the collapse of the Bretton Woods system: Luxembourg vis-à-vis the Belgian franc (the latter also served as Luxembourg franc), Saudi Arabia, Hong Kong and Austria.[1] The Austrian monetary policy after the collapse turned out to be an operational success in so far as the Austrian schilling (ATS) always managed to maintain its exchange rate targets from the collapse of Bretton Woods to the adoption of the euro.[2] This introductory chapter addresses the question how the nominal anchor of Austrian monetary policy emerged and why it worked well? To do so, it draws on the available literature as well as on the internal chronology and many related internal documents from the OeNB archives to give a comprehensive overview of this historically important period.

The chapter is organized as follows: in the first section we describe the OeNB's role within Austrian economic policy framework after 1945. It addresses the

[1] Luxembourg did not have a central bank until 1998; Saudi Arabia had a U.S. dollar peg backed by oil that traded in U.S. dollar and Hong Kong had a Currency Board that effectively made an autonomous monetary policy impossible.

[2] An assessment of its success in terms of broader economic objectives (economic growth, unemployment, price stability and balance of payment equilibrium etc.) is provided in Ewald Nowotny's contribution to this volume. He argues that it was a success in this respect as well.

following questions: what is the broad economic policy strategy after World War II (WW II)? What is the role of the Bank within this strategy? What is the Bank's institutional foundation? The second section provides a chronology of the Austrian monetary policy over this period. The third section analyses the motives for the policy decisions and investigates how they changed over time. The fourth section describes the instruments chosen to implement them.

2. Background: the Central Bank and the Economic Policy Framework in Austria after 1945

Austrian (economic) policy followed a stoutly consensual approach after WW II. A broad consensus also formed the basis of the long-term economic development strategy.[3] After WW II Austria was an economy with a largely destroyed capital stock and a low GDP per capita. Immediately after the war full employment was the main policy objective. Once it was reached, it was replaced by the objective of long-term stable economic growth. The objectives in the areas of fiscal, monetary and incomes policy were subordinated to the envisaged export led catch-up process of the Austrian economy.[4] The various areas of the growth policy mix were assigned to different institutions: fiscal policy, structural policy (i.e. infrastructure investments, export and private investment promotion) and international trade (incl. the liberalization of the capital account) were the domain of the federal government, incomes policy that of the Social Partners, and monetary policy that of the central bank. Despite this assignment of primary responsibility, consensus of all institutions was sought in all areas.

From 1945 to 1966, all governments in Austria were coalition governments of the two largest political parties (Grand Coalition). Together these attracted more than 90% of the votes in each general election: the Conservative Party (Österreichische Volkspartei) and the Social Democratic Party (Sozialistische Partei Österreichs). From 1966 to 1983, a series of single party governments were in office. After a brief coalition of the socialists with the Freedom Party (FPÖ), a series of Grand Coalition governments was formed from 1986 until the adoption of the euro. But despite the changing majorities in the Austrian parliament after 1966 economic policy remained consensus oriented until 1999, which was to a large extent due to the role of the Social Partners in the economic policy framework.

The Social Partners had a substantial influence on economic policy. They consisted of the Austrian Trade Union Federation, the Chamber of Labour, the

[3] Though, European economic integration was exempt from this broad consensus. Oliver Rathkolb discusses this issue in his contribution to this volume.

[4] On the emergence of the export led growth strategy see Heinz Kienzl's and Hans Seidel's contributions to the panel discussion in this volume. For a comprehensive account of the history of the Austrian economy in the first decade after WW II see Seidel (2005).

Federal Economic Chamber and the Chamber of Agriculture.[5] The Social Partners represented a large share of the Austrian working population (employees, self-employed, and employers). In addition, they had large overlaps with the political parties. Formally, they exerted their influence via the Parity Commission founded in 1957: it consisted of the Subcommittee on Wages and the Subcommittee on Competition and Prices as well as the Advisory Council for Economic and Social Affairs (founded in 1963) and the Subcommittee on International Issues. Most prices were administered in Austria after WW II. In addition, the Social Partners negotiated the collective agreements that covered some 90% to 95% of private sector employees. However, the influence of these interest groups spread throughout all policy areas including monetary policy. A number of institutional affiliates of the four interest groups were shareholders of the OeNB and were represented in its General Council.

The monetary constitution in Austria adopted this consensual approach to economic policy, too. The Nationalbankgesetz 1955 (National Bank Act of 1955) constitutes the legal foundation of the Oesterreichische Nationalbank.[6] The institutional, legal and personal independence of OeNB dates back to its foundation in 1816. It was confirmed in the Nationalbankgesetz 1955.

The primary objectives were the maintenance of the internal purchasing power of the Austrian schilling (ATS) and the external stability of the exchange value of the currency relative to stable foreign currencies. In determining the overall monetary policy strategy OeNB had to take due regard to the economic policy of the government. However, that very general requirement was widely considered not to have compromised the independence of the Bank and its stability orientation.[7] On the other hand, the government was required not to conduct its economic policy in a manner that would obstruct the conduct of monetary policy by the Bank.

The OeNB was incorporated as joint stock company (with some special provision deviating from the Joint Stock Company Act). Her shares were held by stakeholders across the Austrian economic spectrum (banks, insurance companies, and the Social Partners), which ensured the participation, representation and legitimacy and increased the reputation of OeNB across the political and societal spectrum. Six members of the overall fourteen members of the "Generalrat" (Governing Board), which was in charge of monetary policy decisions until Austria's membership in the European Monetary Union, were chosen by the General Meeting of shareholders. The President of the Bank and his two Deputy

[5] The three chambers are self-administrating entities under public law. Membership is compulsory for the respective clientele. The Trade Union Federation is organized as a registered association and membership is voluntary.

[6] Federal Law Gazette 49 No. 184/1955.

[7] Explanatory notes to Article 4 of the National Bank ct. of 1955 (No. 602 of the Addenda to the Stenographic Records of the National Council, Legislative Period VII.)

Presidents as well as another five members were appointed by the President of the Republic based on the recommendation of the Federal Government. The President of the Bank had a five year renewable term and enjoyed strong independence during the terms. In appointing the additional five members of the Governing Board the President of the Republic had to take due regard to their competency and the representation of the main societal stakeholders (i.e. functionaries of the Social Partners). The Governing Board was in charge of the monetary policy strategy and the conduct of monetary policy (i.e. interest rates, minimum reserve requirements as well as the overall volume of open market operations). It appointed the six members of the Board of Executive Directors for five year renewable terms. The latter was in charge of day-to-day management of the Bank. The major part of operating profits had to be added to reserves until the late 1980s (when a certain predefined threshold was reached). Dividend pay-outs to the shareholders were minimal, residual profits after the provision of reserves were transferred to the general government (fiscal seigniorage). As of 1992, the OeNB was subject to a corporate income tax. The Bank was prohibited to finance public debt, be it at the federal, provincial or local level.

To sum up, the institutional design of the economic policy framework was based on the common commitment to the long-term development strategy. This system extensively relied on compromise to solve conflicts of interest. The necessary trust among the Social Partners was facilitated by the relatively small elite that spent their entire careers at one or more of the institutions. As a consequence, consecutive generations of functionaries and politicians became acquainted already at the beginnings of their careers and personal trust relationships could develop over years. The network extended into the political sphere as many of the functionaries held political positions and commanded substantial influence within their political parties. The Oesterreichische Nationalbank – without compromising its independence – was firmly integrated into that system. Karl Waldbrunner has been a key player in economic policy for decades.

3. Chronology of the Exchange Rate Policy from 1969 to 1999[8]

In this section we reconstruct the evolution of the German mark peg from the collapse of the Bretton Woods system onwards. In 1953, the exchange rate of the Austrian schilling (ATS) vis-à-vis the U.S. dollar was fixed at 26 ATS/USD and the gold parity at 0.0341796. In 1962, the Austrian schilling became fully

[8] This section builds, to a large extent, on the internal chronology of monetary policy measures and events kept by the OeNB as well as on internal documents from the OeNB archives.

convertible (Article VIII IMF Agreement). Full liberalization of the capital account was not completed until 1991.

In October 1969 the German mark floated against the U.S. dollar and appreciated by 9.3%. Austria left its parity vis-à-vis the U.S. dollar unchanged which implied a depreciation vis-à-vis Germany.

On 10 May 1971, the ATS appreciated by 5.05% to 24.75 ATS/USD and the bandwidth was broadened from ±0.75% to ±0.97%.[9] The gold parity increased to 0.0359059. After the Nixon administration decided to close the U.S. gold window (15 August 1971), the OeNB floated the ATS. When the foreign exchange (FX) markets reopened on 24 August the Bank had already put in place a new monetary strategy: a nominal anchor and a new exchange rate target. The so-called “Indikator” (“indicator”) was introduced. It was calculated as the sum of the daily changes of the value of a basket consisting of the currencies of the main trading partners. Each country’s share in Austrian foreign trade served as respective weight for the changes of the country’s currency vis-à-vis the U.S. dollar.[10] The indicator provided a benchmark for the ATS/USD exchange rate on the Vienna Stock Exchange; FX market interventions were implemented in the ATS/USD market. From 24 August 1971 until 22 December 1971 the ATS floated. In due course, the ATS appreciated further against the U.S. dollar: On 22 December 1971 a new central rate was announced at 23.30 ATS/USD (a decrease by 6.22% relative to 15 August 1971) and the bandwidth was widened to ±2.25% (in accordance with the Smithsonian Agreement). The gold parity remained unchanged at 0.0359059.

In June 1972, the pound sterling floated against the U.S. dollar. Its ensuing depreciation would have pushed the Austrian schilling outside its bandwidth. Consequently, the pound sterling was eliminated from the indicator. This led to a nominal appreciation of the Austrian schilling against its main trading partners and laid the foundations for the hard currency policy. It constituted the beginning of the consistent orientation of the nominal anchor towards stable foreign currencies as required by the Bank’s primary objectives (National Bank Act of 1955).

On 13 February 1973, the ATS/USD exchange rate decreased to 20.97 ATS/USD. On 29 March 1973, Austria readjusts the “Indikator” again. The depreciation of the Italian lira resulted in its elimination from the currency basket. The floating of the Swiss franc did not lead to its elimination, as it appreciated with respect to the U.S. dollar. However, once the Swiss franc would have pushed the ATS out of its own bandwidth, it was eliminated. Instead the French franc was

[9] Since the ATS was traded slightly below the central rate before the appreciation and slightly above afterwards, the effective appreciation was only 3.3%.

[10] The weights were based on the country’s share in the foreign trade of goods only and did not take into consideration trade in services and capital transfers. The currencies in the basket were: Belgian franc, German mark, Danish crown, Dutch guilder, Italian lira, Norwegian crown, Pound sterling, Swedish crown and Swiss franc.

included despite the small share in foreign trade with France.[11] So Austria effectively joined – without formal commitment – the floating block of the German mark (which included the French franc, the Belgian franc, the Luxembourg franc, the Dutch guilder, the Danish crown, the Norwegian crown and the Swedish crown). The bandwidth was ±2.25%. The participating countries comprise of all major partners in Austrian foreign trade with the exception of Italy. Consequently, participation in the floating block was a consistent further evolution of the "Indikator".

On 30 March 1973, the central rate of the ATS vis-à-vis Special Drawing Rights (SDR) was announced as 24.7405 ATS/SDR, which constituted an appreciation of the Austrian schilling vis-à-vis the U.S. dollar of 2.25%. The appreciation continued on 3 July 1973 (4.8% to 23.6073 ATS/SDR).

Inflation differentials between participants of the floating block eventually leaded to the adoption of the stepwise evolution of the ATS/ DEM exchange rate target until 1976. On 19 January 1974 the French franc floated against the other countries in the floating block. OeNB doubled the bandwidth from ±2.25% to ±4.5% while leaving the central rates vis-à-vis SDR unchanged. The French franc was dropped from the "Indikator".

From 13 July 1976, overshooting of the bandwidths (±4.5%) vis-à-vis the other currencies[12] (except the German mark) in the German mark block was accepted. ATS central rates were now oriented solely with respect to the German mark. On 18 October 1976, the floating block was reorganized, while OeNB maintained the ATS/DEM parity.

Two years later, 16 October 1978, the currencies of the German mark block[13] depreciated vis-à-vis the German mark. This also included the ATS which depreciated by 1% to 7.33 ATS/DEM.

From the beginning of the German mark orientation in July 1976 until to August 1979 the schilling depreciated by about 2.7% vis-à-vis the German mark. On 7 September 1979 the ATS/DEM exchange rate appreciated by 1.5% (and by a total of 4.5% until 1980 to 7.03 ATS/DEM). A few days later (24 September 1979) the German mark appreciated by 2% within European Monetary System while the Danish crown depreciated by 3%. The ATS/DEM parity remained stable; so that

[11] The inclusion of the French franc in the indicator was justified by the potential volatility of the German mark. It could stem from international flows of short-term capital out of the U.S. dollar which were targeted primarily towards the German mark. Keeping its weight in the basket inline with its trading weight should attenuate the volatility of the ATS' effective nominal exchange rate even in times of distress on foreign exchange markets.

[12] The Belgian franc, the Luxembourg franc, the Dutch guilder, Danish crown, the Norwegian crown and the Swedish crown.

[13] The Norwegian crown and the Danish crown depreciated by 4% vis-à-vis against the German mark and the Dutch guilder, the Belgian franc and the Luxembourg franc by 2%.

ATS effectively appreciated vis-à-vis all other currencies accept the German mark. Also the ensuing realignments within the EMS left the ATS/DEM parity unaffected.[14] A single speculative attack against the ATS/DEM central rate occurred in August 1993. It remained unsuccessful.

As of 4 November 1991, the last step of the liberalization of the capital account entered into effect. On 1 January 1995, Austria joined the EU and the EMS, on 9 January the Exchange Rate Mechanism (ERM) and as of 1 January 1999 the ATS/EUR exchange rate was irrevocably fixed at 13.7603 ATS/EUR.

To sum up, at the beginning, the exchange rate policy followed a very complex orientation: the exchange rate was to be kept stable with respect to an indicator; within a bandwidth; relative to a basket of currencies; expressed in a currency that was not part of the basket. In addition, the set-up kept evolving: currencies were dropped from the basket, if they devaluated; currencies were not dropped from the basket, if they appreciated, unless that appreciation would have pushed the ATS outside the bandwidth. For currencies that were dropped other currencies were included, even if the respective country's weight in Austrian foreign trade was low, in order to avoid the German mark gaining too much weight in the basket. In addition to the complexity of the rule, the Bank also retained a high level of discretion, as sometimes the ATS was allowed to overshoot the bandwidth (i.e. the rule was effectively broken under special circumstances). Nevertheless, the other currencies in the basket proved not to be stable enough in the medium-term. One after another had to be dropped and the German mark peg emerged. This is certainly not what economists today understand as "straightforward and credible rule […] observed and understood by the public" (Hochreiter and Winckler 1995, 101). Although the evolution can be rationalized ex-post under a complex rule, it is the outcome of a learning process at the Bank rather than a policy rule.[15] Step-by-step all currencies that endangered the stability of the domestic or international purchasing power of the ATS were dropped from the indicator until the German mark peg emerged. This raises the question whether this process was driven by changes to the monetary policy strategy or simply by a changing environment?

[14] These realignments took place rather frequently (30 November 1979, 4 October 1981, 21 February 1982, 14 June 1982, 21 March 1983, 22 July 1985, 7 April 1986, 12 January 1987, 14 September 1992, 17 September 1992 and 22 November 1992; Mooslechner, 1989).

[15] In this respect the historical evidence is hardly in line with the interpretation of the exchange rate policy as a rule based concept (Hochreiter and Winckler, 1995). It comes closer with Dorn's (1979) analysis, although one need not to share his rather extreme assessment of a lack of rules.

4. The Motivation for the Austrian Exchange Rate Policy

In order to answer that question, the following section analyses the motivations for the Austrian monetary policy strategy after the end of the Bretton Woods system. The analysis is based on the OeNB's Annual Reports, the Protocols of the Board and of the General Council, but also draws on the available literature[16]. The main questions addressed is why did the Bank choose an exchange rate target in 1971 and why did it tend to appreciate the schilling until 1979?

On 24 October 1969, the German mark appreciated vis-à-vis the U.S. dollar by 9.3% which led to a depreciation of the effective real exchange rate of about 4%.[17] Thus, the Minister of Finance advocated an appreciation of the ATS vis-à-vis the U.S. dollar, in order to avoid inflationary pressures due to imported inflation. The Bank, the opposition parties, and the Social Partners argued that Austria had a trade deficit and feared that an appreciation against the U.S. dollar would cause unemployment in those sectors of the Austrian economy that are exposed to international competition.[18] Finally, the "currency summit" met the decision not to follow the German mark and to combat the expected inflationary pressure by reductions of tariffs and taxes on imports as well as increases of import quotas. In addition, the Bank tightened monetary conditions. On the one hand, Socher (1996) conjectures that Austria's experience with the imported inflation due to the depreciation against the German mark in 1969 were constitutive for the monetary strategy chosen after the end of Bretton Woods in 1971 which basically set an end to the soft-currency policy[19] followed since 1953. On the other hand, Nowotny (in this volume) argues that the depreciation vis-à-vis the German mark was constitutive for the strong growth performance in the early seventies and that it was a success. The inflation figures – while indeed increasing – were still below the OECD average. However, the role of imported inflation gained importance in the exchange rate decisions in 1971.

The motivation for the appreciation in May 1971 is communicated in the OeNB's Annual Report for 1971. The Bank expected that the German mark and the Swiss franc would appreciate vis-à-vis the U.S. dollar. The imports from the countries that were about to appreciate accounted for more than 50% of the

[16] In particular Handler (1980, 1983), Androsch (1985) and Socher (1992).

[17] Handler (1989) argues that the nominal depreciation of the ATS vis-à-vis the German mark did not lead to real effective depreciation of the ATS, as it compensated basically an earlier real effective appreciation (due to depreciations of the British Pound in November 1967 and of the French franc in August 1969).

[18] In addition, an appreciation against the U.S. dollar might have violated the IMF Agreement that restricted revaluations to fundamental imbalances. That was not the case in Austria at the time (Kloss 1972, 256).

[19] Handler (1989). See also the contributions of Kienzl and Seidl to the discussion at the end of this volume.

Austrian imports. Most of Austria's trading partners featured inflation rates above the domestic rates. Maintaining stable rates vis-à-vis the U.S. dollar would have implied an effective devaluation and the danger of importing inflation. In addition, Austria became subject to the large speculative inflow of capital for the first time in 1971. Adjusting the value of the schilling was also motivated by the objective to set an end to these inflows that threatened to swell the money supply in Austria. The appreciation of 10 May 1971 was motivated largely by monetary policy concerns (rather than by balance of payments concerns). When it introduced the "Indikator" in August 1971, the Bank's intention was to reduce the uncertainty stemming from exchange rate fluctuation for Austrian exporters.[20] To that aim it also bought U.S. dollars on a daily basis to take over currency risk from exporters, facilitated hedging operations, and reduced the associated transaction costs. In this case the main objective was neither based on monetary policy considerations nor on balance of payments disequilibria, but on the macroeconomic aim of contributing to economic growth by creating a stable environment and reducing transaction costs for Austrian exporters.

In 1973, the Bank argued that its foreign exchange policy had been guided by its legal objective. The OeNB motivated the floating against the U.S. dollar in March 1973 and the unofficial participation in the German mark block by the continuation of this strategy. The additional appreciation of the ATS vis-à-vis the SDRs was justified by the danger of imported inflation, as the Austrian balance of trade deficit increased at the time. Nevertheless, one must bear in mind that the Bank's policy was controversial. Those sectors of the Austrian economy that were exposed to international competition (incl. the export and the tourism sectors) were opposed on grounds of potential competitive disadvantages. The bank made clear that the monetary policy objective prevailed over these demands.

The decision to broaden the bandwidth in 1974 was again justified by the legal objectives and by the negative price stability implications of potential devaluations vis-à-vis the stable foreign currencies. Given the weakness of other currencies within the snake, maintaining the narrow bands of the "snake" would have lead to devaluations vis-à-vis the German mark which became more and more synonymous with "stable foreign currencies". The schilling was allowed to overshoot the narrow bandwidth vis-à-vis the weaker currencies. As a

[20] Schmitz (1972). This was not the first time that the Bank followed an exchange rate target. In 1892, the gold currency was introduced in Austria. The new crown replaced the old guilder with a ratio of 2 crowns to 1 guilder. However, the crown bank notes were not redeemable into gold. Instead, the Bank maintained a stable gold value of the bank notes via indirect redeemability. It targeted the exchange rates of the crown on the foreign exchange market vis-à-vis other gold currencies. The balance of payments of the Austro-Hungarian Empire was positive at the time and the Bank managed to accumulate sufficient foreign exchange reserves. It intervened on FX markets to smooth the fluctuations of exchange rates.

consequence, the ATS appreciated in the following months by up to 4.5% vis-à-vis the German mark. The Bank emphasized its legal objectives to justify its exchange rate policy.

Also in 1976, the Bank invoked its legal objective. But for the first time it also argued that the exchange rate target provides constraints for the evolution of the production costs in those sectors of the Austrian economy that are exposed to international competition. That in turn can enhance the competitiveness of the Austrian economy in the long-run. Thus, it added a structural dimension to justify its strategy. These arguments were targeted primarily towards the exposed sectors of the economy that were sceptical with respect to the exchange rate target.[21] They would have preferred a more lenient approach that would have focused more on short-term competitive advantages by nominal effective depreciations. But the arguments also addressed the growing balance of payments problem and stressed that it should be resolved by incomes and fiscal policy rather than by depreciations. In the same year the position of the German mark within the exchange target was further enhanced: the depreciations of the weaker currencies in the snake and the expected appreciation of the German mark also dragged the schilling down against the German mark. Therefore, the Bank decided to handle the bandwidth "elastically", i.e. it allowed the schilling exchange rate to decrease below the bandwidths vis-à-vis the weaker currencies. The German mark's highest and lowest valuations vis-à-vis the schilling over the past 1½ years were defined as points of orientation.

In 1978, the Bank argued that the appreciation of the German mark vis-à-vis the other currencies in the snake reestablished realistic exchange rates. The Austrian depreciation vis-à-vis the German mark in this context was not mentioned explicitly. The OeNB used the term "Hartwährungspolitik" (hard currency policy) for the first time in its Annual Report for 1978. The Bank emphasized that it interprets this policy approach as a framework to stabilize prices and to create the optimal environment for the enforceability of an incomes policy that enhances the competitiveness of the Austrian economy. It also mentioned the increasing competitive pressure that stems from its monetary policy approach. Both incomes policy and international competition should help to increase productivity growth and to enforce structural reform. Again the arguments addressed the large balance of payments deficit and the increasing criticism voiced by the Chancellor, the Association of Austrian Industrialists, and the Chamber of Commerce.

The decision to appreciate the ATS vis-à-vis the DEM in September 1979 was motivated by the Bank's desire to reverse the real effective depreciation and to

[21] The second half of the 1970s was characterized by large balance of payment deficits and the pressure of the exposed sector to ease the hard currency policy increased (see the contribution of Adolf Wala to the panel discussion summarized in this volume). For an overview over the early debate about the hard currency see Schmitz (1975).

stabilize the real effective exchange rate. Adapting the exchange rates to inflation differentials vis-à-vis the main trading partners should help to stabilise domestic prices by its impact on the prices of imported goods and by stabilising inflation expectations which in turn would facilitate moderate wage increases.

At the beginning of the 1970s, the Bank's legal objective and monetary policy considerations (to avoid imported inflation) constituted the central pillars of its motivation for maintaining the exchange rate target.[22] From 1976 onwards the Bank added structural arguments to this set. The role of incomes policy was to reduce inflation pressures by moderate wage and price increases. The implicit theoretical foundations were cost push/structural theories of inflation. The growing balance of payments problem led to an increasing emphasis on the structural implications of the exchange rate target. Incomes and fiscal policy were not in line with the exchange rate target, hence the balance of payments deficit. From 1961 to 1974 the growth rate of the nominal unit labour costs was 0.5 percentage points p.a. lower in Austria than in Germany. But from 1975 to 1979 that relationship changed and they grew 2.7 percentage points p.a. faster in Austria than in Germany. Also the fiscal stance was expansionary given the growth figures and the balance of payments deficit. The budget deficit averaged 2.6% p.a. from 1975 to 1979. This was the time in which the hard currency policy faced strong criticism from representatives of the exposed sector and strong scepticism from academics.[23] The Bank's determination to stick to the hard currency policy and its communication policy aimed at motivating the Social Partners and the government to subordinate their policies to that of the exchange rate target. It was successful as from 1980 to 1999 the growth rate of nominal unit labour costs in Austria was broadly in line with that in Germany, i.e. it was 0.2 percentage points p.a. higher than in Germany. This is confirmed by the empirical evidence presented in Glück, Proske and Tatom (1992. table 1, p. 30). They show that the inflation rate, interest rates, unit labour costs in manufacturing, the current account balance and the growth rate of real GDP in Austria and Germany showed much closer convergence in the period 1979–1984 than in the period 1971–1978.

After the last unilateral appreciation vis-à-vis the German mark the communication of the Bank's monetary policy strategy becomes quite brief. In the early 1980s the main justifications for the Bank's monetary policy approach invoked were to avoid imported inflation without endangering the competitiveness of the exposed sector, but it made the prerequisite of the incomes policy to ensure the international competitiveness of the Austrian economy more explicit. Incomes policy was reduced to wage policy. Price setting was not considered a policy field anymore, since prices were mostly liberalized and left to market forces. From 1985

[22] Handler (1980, 390) calls it the vicious circle argument: "[An] exogenous depreciation will result in an explosive succession of inflation and depreciation."

[23] See the literature overview in the editorial for details.

onwards the role of stabilizing expectations with respect to the ATS/DEM exchange rate was added with occasional explicit emphasis on the contribution of a credible exchange rate target to financial stability. The main justifications for the hard currency policy were monetary policy consideration combined with structural objectives.

In the 1990s, the Bank invoked its legal objective regularly. The role of stabilizing expectations in the context of financial stability featured more prominently due to the liberalization of the capital account. From 1991 onwards the OeNB explicitly provides a theoretical underpinning for its hard currency policy retrospectively: the Optimum Currency Area theory. The adjustment mechanism for balance of payments disequilibria within the currency union (with Germany) rested on the flexibility of wages and prices. Therefore, the Bank emphasized the important role of a productivity oriented incomes policy and the contribution of the consensus and cooperation of the Social Partners to maintain the international competitiveness and to support the credibility of the exchange rate target.

To sum up, the Bank's legal objective[24] was central to its motivation for maintaining an exchange target in 1970s and in the 1990s. Monetary policy considerations and the emphasis on structural objectives were invoked regularly. Resolving balance of payments disequilibria did not play a very explicit role in the exchange rate policy after the collapse of the Bretton Woods system. That was primarily delegated to the incomes policy of the Social Partners (and to the macroeconomic policy mix). The theoretical framework of the exchange rate target changed somewhat during the period of interest. The early focus on imported inflation and the role assigned to incomes policy revealed a leaning towards a cost push/structural theory of inflation until the mid-1980s.[25] The early focus was replaced by a strong emphasis on inflation expectations and on the credibility of the peg, respectively. The role of incomes policy was to support the credibility of the exchange rate target by an accommodating incomes policy. Also macroeconomic policy was subordinated to the exchange rate target more strictly. The theoretical background shifted towards the optimum currency area theory. Pech (2002a) relates the changes in the motivation for the OeNB's strategy by the changing conditions on international financial markets (i.e. the liberalization of the capital account and financial innovation).

What does the evidence concerning the motivation for the Austrian exchange rate target tell us about the fundamental question whether the evolutionary process from the "indicator" based exchange rate target to the German mark peg was

[24] These provisions dated back to 1922 and originally referred to a Gold Standard rather than floating exchange rates, but they turned out to be a useful common ground for the various interest groups in Austrian economic policy at the end of the Bretton Woods system, too.

[25] For the relationship between the hard currency policy and structural models of inflation see Nowotny's contribution to this volume.

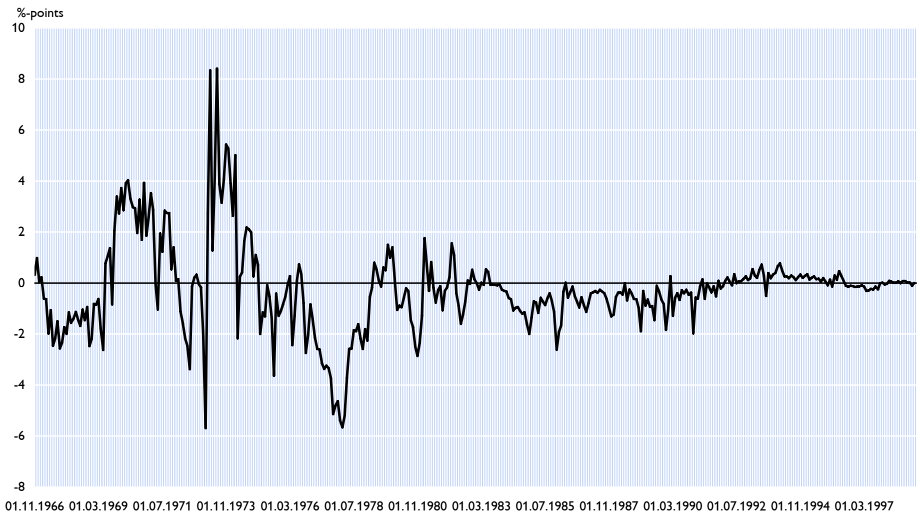
driven by changing policy strategies or by a changing environment? Our interpretation of the evidence is more in favour of the second explanation: the evolution was driven by a changing environment. Throughout the period the Bank adhered to its stability oriented objective (despite recurring pressure from the exposed sector), but one foreign currency in the "indicator" after another proved to be an inadequate component of a nominal anchor to reach that objective.

5. The Instruments Chosen to Implement the Exchange Rate Target

A number of currencies in the ERM tried to import stability by pegging their currencies to the German mark. They committed to maintain the peg even at high adjustment costs in terms of high real costs and in the face of political tensions – but, in the end, only a few succeeded. The question emerges why the strategy worked in the Austrian case and how the exchange rate target acquired lasting credibility? In practise, OeNB employed a large and complex set of instruments to implement the target that helped to avoid some of the costs associated with it. Especially until the mid-1980s they helped to attenuate the negative side-effects of the hard currency policy and to avoid political conflicts over the distribution of the costs associated with maintaining a peg in times of distress.

Despite the explicit exchange rate target, the OeNB retained a large (but shrinking) degree of autonomy in the conduct of monetary policy after the turbulences in the international monetary system that began in 1969. The short-term interest rates between the German mark and the schilling markedly differed until the end of the 1970s and to some extent and for different reasons until the 1990s (chart). However, from 1979 onwards the Austrian rate was mostly higher (corresponding to a negative value in the chart). At that time, the OeNB lost its autonomy in setting money market rates and markets charged a small (and decreasing) premium vis-à-vis the German rates due to the lower liquidity of the Austrian money market and due to the (decreasing) exchange rate risk.

Chart: Overnight Interest Rate Spread between the German Mark and the Austrian Schilling from November 1966 to January 1999



Source: BIZ.

The Bank managed to maintain relatively low interest rates while the international interest level increased quite sharply between 1969 and 1974 and continued a low interest policy until 1979. To some extent that was due to the restrictions of the capital account until its full liberalisation in 1991. But the Bank employed a large number of additional instruments to retain some degree of autonomy despite the (sometimes conflicting) objectives of low inflation, stable exchange rates vis-à-vis the stable foreign currencies of Austria's major trading partners, and the imbalances in the balance of payments, but also the broad economic policy of the government and the liquidity situation of the financial sector and the credit demand of an expanding economy.

5.1 The Restrictions Concerning Foreign Exchange Transactions and the Capital Account

In 1946, the Devisengesetz (BGB. 162/1946) entered into force containing the regulations concerning the control of foreign exchange transactions.[26] It was motivated by the low level of foreign exchange reserves. The inflow and outflow of foreign currency should be managed in a way that ensured that the demand of foreign currency by the Austrian economy could be satisfied and that the external

[26] For details see Schwarzer, List (1992) and Lachs (1986, 1989, 1991).

value of currency was maintained. It required the prior authorisation for each individual foreign currency (incl. gold) transaction: the import and export of foreign currency, the sale of domestic financial assets and real estate to foreigners; credit contracts between Austrians and foreigners. Foreign currency had to be exchanged for schilling at the OeNB which was also in charge of the execution of the law. From 1946 to 1953 the law was interpreted and executed very restrictively as the foreign currency reserves were very low.

The important steps of the liberalisation of foreign exchange transactions were taken after 1953.[27]

- Between 1954 and 1959, foreign exchange transactions related to exports and imports between Austria and its main trading partners were liberalised.
- In 1959, the schilling became convertible for foreigners (i.e. residents of countries with convertible currencies). This also applied to capital transfers that were allowed.[28]
- In 1962, the step-wise liberalisation of long-term capital transfers for Austrians banks and – more restrictively also for non-financial companies and households – commenced, too.[29]
- In order to deal with the increasing speculative inflows and outflows of capital foreign exchange transactions and capital transfers were partly re-regulated after the collapse of the Bretton Woods system (1971) for Austrians and for foreigners. Banks were generally admitted to conduct forward transactions in convertible currencies to reduce the hedging costs for Austrian companies in the face of increasing exchange rate volatility.
- In 1976, the pre-1971 status of foreign exchange liberalisation was largely restored.[30]
- In 1986, the restrictions for capital transfers and tourism were further liberalised for banks, non-financial companies and private households.[31]
- In 1989, the capital account restrictions applying to the own business of credit institutions were abolished and the restrictions applying to long-term capital transfers of domestic investors were further eased. The capital account is now

[27] To a large extent they were driven by the commitments that resulted from the membership in the IMF (1948) and the OECD (1961).

[28] In 1962 Austrian adopted Art VIII of the IMF Agreement.

[29] Portfolio investments and foreign direct investments abroad (1962), investments in foreign real estate and for the provision of credit to foreigners (1963) were partly liberalized (they were granted a general authorization) under certain conditions.

[30] The last remaining provisions of the re-regulation after 1971 were abolished in 1981.

[31] Many of the new general authorisations replace individual authorisations that were granted in general, so that this round of liberalisation amounted to an administrative reform rather than material liberalisations. All long-term investments abroad were liberalised for Austrians (i.e. foreign financial assets, participation in foreign companies, real estate) and inward foreign direct investments were further liberalised for foreigners.

largely liberalised and only four minor caveats with respect to the OECD liberalisation code remain in force.

- The last restrictions were finally abolished on 4 November 1991, which constituted the last step in the long process of liberalisation of the capital account in Austria.[32]

The liberalisation of foreign exchange transactions and the capital account in Austria followed a step-wise and gradual approach: foreigners before Austrians and within Austria banks before non-financial companies and private households; the balance of trade before the capital account and within the capital account long-term before short-term capital transfers. The gradual approach enabled the OeNB, the banking sector, and the companies to adapt to new circumstances step-by-step and to identify and address problems at each stage of the process. The OeNB could react to potential destabilizing effects at each stage by reintroducing the restrictions quickly when needed (i.e. 1971), as the necessary legal foundations remained in force. The liberalisation was conducted via the more liberal administration of the necessary applications which was communicated to the public via Official Announcements (Kundmachungen) without abolishing the legal provisions themselves.[33] Pech (2002b) argues that this gradual approach largely avoided instabilities in the capital account and, as a consequence, shocks to domestic financial markets.

5.2 The Instruments of Monetary Policy

The Oesterreichische Nationalbank employed a complex set of complementary instruments to implement monetary policy, which also helped to attenuate the negative side-effects of its exchange rate target.

The main instruments were *short-term interest rates* and *open market operations*.[34] Although the terms sound familiar, the system differed from today's implementation of monetary policy.[35] The Bank announced a discount rate, a Lombard rate (which again differentiated between government bonds and privately issued bonds) and a bank rate. Despite the exchange rate target and the increasing liberalisation of the capital account, the OeNB followed an explicit "low interest policy" until the end of 1979. It was motivated by the concept of "cost-push inflation" and by the desire to stimulate investment. Swelling outflows of short-term capital to Germany set an end to the remaining degree of autonomy in setting

[32] The issuance of shares on foreign markets was authorised for Austrian companies and that of shares on the Austrian market for foreign was authorised. Austrians were allowed to hold accounts with foreign banks.

[33] But one has to bear in mind that approach was subject to criticism on constitutional grounds (Knorreck, 1983).

[34] Article 54 of the National Bank Act of 1955.

[35] Scheithauer (1972).

short-term interest rates. From 1980 onwards, the interest rate policy followed an approach that attempted to keep the short-term interest rate as low as would be consistent with the prevention of speculative outflows of capital (mostly to Germany). It followed a covered interest parity approach vis-à-vis the rest of the world, but the indicator for the interest rate decisions were the German short-term interest rates, as the exchange rate risk was considered to be lowest with respect to the German mark.

Open market operations were introduced in Austria with the National Bank Act of 1955. At the time, the Austrian money market was not well developed and a liquidity surplus prevailed. The Bank therefore had to concentrate on liquidity absorbing operations, which was complicated by the fact that its holdings of government bonds were limited. To deal with the problem of an underdeveloped money market, the Bank arranged transactions with the credit institutions rather than transacting via the market. (Only in 1964 the government bonds held by the Bank were listed on the Vienna Stock Exchange.) Right from the beginning, this implied that monetary policy was implemented in close cooperation with the credit institutions. Although the Bank occasionally provided incentives for cooperation by threatening to increase minimum reserve requirements; a measure that would have implied higher opportunity costs for banks than the open market operations. The second problem was addressed by the securitisation ("Titrierung") of claims the Bank held against the Federal Government. Only in 1969 the Bank was authorised to issue its own money market securities ("Kassenscheine"). Open market operations were further complicated by the objective to promote exports and fixed capital formation. Since the autonomy to keep interest rates below international levels decreased in the mid-1970s, preferential open market operations were used enabling the respective institutions (special purpose banks) to offer loans at below-market interest rates. This form of interest subsidies was discontinued in the mid-1980s.

Also *minimum reserve requirements* were introduced with the National Bank Act of 1955.[36] The maximum amounts stipulated in the Act were quite high and the Bank enjoyed substantial discretion in determining the applicable ratios. The penalty rate for non-compliance was high (5% above the prevailing discount rate). The Bank made frequent use of its discretion to change the minimum reserve requirements. They were particularly suitable to absorb undesired inflows of short-term capital.[37] In general, this instrument was deployed to manipulate the broad

[36] Article 43 of the National Bank Act of 1955. The maximum amount for demand deposits was 25%, for time deposits and savings accounts 15%; liabilities vis-à-vis foreigners were subject to a minimum reserve requirement only to the extent to which they exceeded the respective assets (25%) and increases of these liabilities could be subject to a minimum reserve requirement of up to 50%.

[37] At the end of the 1960s, 84% of the central bank money supply was attributed to long-term capital imports, which were quite volatile (Kloss 1971, 254).

liquidity conditions in the Austrian monetary system, while the open market operations were used to fine-tune them.

At the same time the Bank sought *credit control agreements* with the credit institutions that ensured that the growth of credit in general did not accelerate beyond a certain limit.[38] The first agreements were negotiated in 1951 and consisted of liquidity reserves[39] and the commitment that the credit growth rate was limited by the growth rate of non-bank deposits. The limits for commercial credit were adapted frequently; they were discontinued in 1981. The limits for private households were in force until 1982. Initially they were confined to joint stock banks and private banks, but similar agreements were concluded with all other sectors (i.e. savings banks, rural cooperative banks, and insurance companies) until 1957. The applicable limits of credit growth were frequently adjusted. Credit growth limits had certain advantages vis-à-vis increases in the rate of interest to curb credit expansion: they did not lead to the inflow of short-term foreign funds. Due to the restrictions of the capital account the companies that were denied credit could not raise funds abroad without the explicit authorisation by the Bank. In addition to the quantitative components the agreements also encompassed qualitative ones: the credit institutions agreed to provide credit only for "economically justified purposes". That basically implied that credit was not to be provided for speculative uses or for the economically unjustified increase of the consumption of households (i.e. consumer credit). While the credit institutions were required to hold liquidity reserves by the Austrian Banking Act, the credit growth limits were based on the voluntary cooperation[40] of the credit institutions, in principle. However, the Bank later on defined the compliance with the credit growth ceilings as prerequisite for the participation in its refinancing operations.

Interest rate agreements complemented the credit control agreements from 1948 until 1997 However, in the first half of the 1980s those agreements were temporarily abolished. They governed the interest rates offered by credit institutions for deposits.

In addition, the OeNB attempted to sterilise the inflow of funds by *Gentlemen's Agreements with the banks*. The beginning of liberalisation of the capital account in the 1960s led to increasing capital imports. These were largely the result of the demand for capital by domestic companies and the government. The supply of

[38] Formally the agreements were concluded between the credit institutions and the Ministry of Finance on behalf of the Bank.

[39] The liquidity reserves were to be held partly in central bank money and partly in government securities so that their opportunity costs were lower than that of minimum reserve requirements.

[40] Klauhs (1972) argues that the voluntary character increased their efficiency, because diverging interests could more easily be reconciled and the enforcement costs were lower than in those countries in which the limits were stipulated by law.

domestic long-term savings fell short of domestic demand.[41] Capital imports were largely inline with the increasing money demand that resulted from economic growth. The sterilisation of the inflows of funds was not a problem. However, that changed in with the turbulences of the international monetary system in 1971. In order to avoid the spill-over of capital inflows into the money supply, the first Gentlemen's Agreement was concluded in 1971. It was modified and prolonged frequently until it was discontinued at the end of 1980. For example, the banks agreed to deposit financial inflows from foreigners on non-remunerated accounts at the OeNB, to advice their customers to switch from funding abroad to domestic sources, and not to raise funds abroad themselves. The Gentlemen's Agreements were necessary due to prevailing interest rate differentials between domestic and foreign rates and especially when the ATS was expected to appreciate relative to other (weaker) currencies. They were introduced to cushion the effects of the step-wise liberalisation of the capital account. If they did not suffice, capital account restrictions were reintroduced temporarily (e.g. 1974).

In order to reduce inflation, the first *stability program* (Stabilitätspaket) was introduced in 1972. It was negotiated between the Bank, the government, the credit institutions and the Social Partners. The program was modified eight times and remained in force until 1977. It focused on fiscal restraint by the government, on a restrictive monetary policy by the Bank, and reinforced a number of measures that were also contained in the credit control agreements and the Gentlemen's Agreements. Unlike these, however, the stability programs were binding agreements and sanctions were included to enforce them vis-à-vis the credit institutions. The Social Partners agreed not to increase prices and wages for 6 month.

Finally, the OeNB routinely *intervened on foreign exchange markets* throughout the post-war period when necessary. Large and increasing foreign exchange reserves supported the implementation of the exchange rate target.

5.3 Accompanying Measures to Exert Influence on FX Markets

In addition to the wide range of activities mentioned above, the Bank implemented a number of accompanying measures to exert influence on the ATS/DEM market. That made it easier for the Bank to maintain its exchange rate target. According to the summary given by Streissler (1998):

1. The OeNB monopolised the market for market making in the ATS/DEM in Vienna. It acted as market maker in the ATS/DEM market. After 1980 – when

[41] The active capital import by foreigners was low, as the domestic capital market was neither deep nor liquid enough to attract international funds. In addition, currency risk was considered too high, since the schilling had not yet commanded the reputation it would acquire during the times of the "hard currency" policy.

the ATS/DEM target rate was fixed at 7.03 – the Bank offered bid/ask rates of 7.03 and 7.04 each day for the next day. This small spread was only possible because the OeNB had enough reserves to insure itself against fluctuations (so it did not have to charge a risk premium to cover potential losses), its market making activities were not motivated by profit maximisation, it was the largest market maker and profited form scale economies and it had an information advantage. As the authority responsible for monetary policy it had to trust itself and did not have to price agency risks into its own bid/ask spread. As consequence of the very small spread, all other market makers were driven out of the market. The German mark was the only foreign currency traded on the Vienna Stock Exchange. Transactions between the ATS and all other currencies were conducted at prices derived from the market prices in Frankfurt. By this type of price piracy, arbitrage opportunities were eliminated.

2. Price discovery regarding the daily exchange rate was based on a daily auction and bound within the OeNB's bid/ask spread. However, it was a precondition for participating in these auctions not to short-sell ATS. Therefore, one means for Austrian banks to speculate against the ATS was effectively eliminated. The respective provision was based on contractual law (the terms and conditions of participation in the auctions) rather than legal provisions.
3. The Bank held foreign exchange reserves that exceeded the total sum of ATS-assets held abroad. Therefore, also a (hypothetical) simultaneous flight of all foreigners out of ATS assets could have been absorbed by the Bank.

Altogether, to successfully implement its exchange rate target the OeNB developed and adhered to a complex set of policy instruments and measures over the years. These included restrictions of the capital account, monetary policy instruments, formal and informal agreements with the financial sectors and the government as well as measures to exert direct influence on the FX market. This set of instruments helped the Bank to cope with partly conflicting goals of an exchange rate target, low interest rates, liberalisation of the capital account, preferential credit policies and interest rate subsidies for the promotion of exports and fixed capital formation. Over the years the liberalisation of the capital account and the structural reforms of the Austrian financial sector diminished the remaining autonomy of monetary policy implementation in general and that of the interest policy in particular. It also diminished the efficacy of the other instruments of monetary policy implementation. In the 1980s, awareness with respect to their implicit costs – in terms of barriers to the development of the Austrian financial system – increased and accelerated their phasing out. However, until the mid-1980s they helped to attenuate the negative side-effects of the hard currency policy. In conjunction with the characteristics of the Austrian economic policy framework they helped to avoid political tensions concerning the distribution of the burden in the face of distress.

6. Conclusions

Why was the Austrian exchange rate policy credible and, thus, successful after the end of Bretton Woods? At the beginning, the indicator constituted a very complex mechanism and the set-up kept evolving over time. In addition, the Bank also retained a high level of discretion, as sometimes the ATS was allowed to overshoot the bandwidth (i.e. the rule was effectively broken under special circumstances). In reality, this was certainly not what one would call a simple rule-based approach. Over the years, the other currencies in the basket proved not to be stable enough in the medium-term. One after another had to be dropped and the DEM peg emerged. Although the evolution was sometimes rationalized ex-post as a complex "rule", it seems to have been much more the outcome of an ongoing learning process.[42] While the Bank's motivation for its exchange rate policy evolved over time, the respective objectives of the National Bank Act that explicitly refers to the stability of exchange rates with respect to stable foreign currencies served as strong principle and guideline. The evolution of the hard currency was driven by a changing environment rather than changing policy objectives or strategies.

The operational success of the Bank's monetary policy strategy can be explained by a number of factors: During the period from 1971 to 1979 the bank maintained some degree of autonomy in its monetary policy decisions. In the implementation of its exchange rate policy it relied on a complex set of complementary instrument. During this time the exchange rate target itself was evolving subject to a learning process. The complementary instruments were pivotal for this process as they reduced the costs of potential problems in coordinating economic policy. That in turn contributed to the credibility and stability of the peg. At the end of this learning process the DEM peg emerged. After 1979 the Bank largely lost its autonomy in monetary policy. But some of its instruments still helped to protect the exchange rate target against speculative attacks and to minimize the probability of a financial crisis. At this time, the role of the convergence of fundamental macroeconomic data with Germany also increased. However, already during the earlier period the Austrian economic policy framework demonstrated that it had been able to cope with the burden of adjustment resting on wage and price flexibility rather than exchange rates. The complex set of instruments helped to avoid political and distributional tensions that could have put the whole system at risk. It contributed to the well functioning of the system, so that the hard currency policy could acquire the necessary credibility to also work in a world of increasingly mobile capital.

The common trait over the entire period was a broad consensus of the important role of the exchange rate target within the macro-economic policy mix as well as the Bank's close cooperation with the government, the credit institutions, and the

[42] Socher (1996).

societal stakeholders. The cooperation with the societal stakeholders was facilitated by their representation in the Social Partnership, in the government and in the Bank itself. The cooperation with the credit institutions was eased by the low degree of competitiveness in the Austrian financial sector and by the large share of credit institutions controlled by public entities. In addition, the financial sector was well integrated into the Austrian economic policy framework. Finally, trust was a precondition for the close cooperation between the Bank and the financial sector. This trust was facilitated by the small size of the Austrian financial sector and by the close institutional and personal interlinkages with the other components of the economic policy framework.

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