INSTITUT
FÜR
HÖHERE STUDIEN

Institute
for
Advanced Studies

EXPERIENCES WITH MONETARY REFORM IN WESTERN EUROPEAN COUNTRIES WITH DIFFERING LEVELS OF DEVELOPMENT

Theresia THEURL

No. 4 April 1994

Reihe Osteuropa East European Series

The following studies on Eastern Europe and the NIS have been recently published by Bank Austria

- ☐ Russia, Ukraine, Kazakhstan and Belarus – Debt Situation in Late 1992 and Outlook (no longer in print)
- ☐ The Slovak Republic – Country Report 1993 (no longer in print)
- ☐ Many-faced Russia: The Impact of Transition on the Russian Regions
- ☐ The Czech Republic, More than Prague

Please order directly:

Bank Austria
Publications Department
Am Hof 2
A-1010 Vienna
Tel.: + 43 1 531 24 3115
Fax: + 43 1 531 24 113

INSTITUTE
FOR
ADVANCED STUDIES

"EXPERIENCES WITH MONETARY REFORM IN WESTERN EUROPEAN COUNTRIES WITH DIFFERING LEVELS OF DEVELOPMENT"

Theresia THEURL

University of Innsbruck

Presented at the Institute: March 18, 1993

Bestellungen: Institut für Höhere Studien
Bibliothek
Stumpergasse 56
A-1060 Wien
Tel.: (1) 59 991-237
Fax: (1) 59 70635

Einzelpersonen	70,– öS
Institutionen	220,– öS
Abonnement (10 Papers)	
Einzelpersonen	300,– öS
Institutionen	1.000,– öS

Experiences with Monetary Reform in Western European Countries with Differing Levels of Development

Theresia Theurl

1 Monetary Reform

History is replete with examples of monetary reform.[1] Usually they are seen as singular events, as episodes in the economic history of countries. As a result, their causes, techniques and results are often analyzed as single events. The information gained from these many "single" historical examples is, of course, used for the preparation of current reform programs; yet the general lessons have rarely been analyzed.[2]

Monetary reforms are complex processes with political and social as well as economic aspects. A common denominator to most monetary reforms is the introduction of a new currency. Stressing this seemingly superficial, yet highly symbolic aspect, poses, how ever, the threat of neglecting the specific cause, course, and result of the reform. Monetary reforms have been elements of comprehensive macroeconomic stabilization programs introduced to end chronic hyperinflation, as for example in Argentina, Brazil, Israel[3] or temporary hyperinflation as experienced in a number of European countries after the two world wars. Other currency reforms were necessary to help national monetary orders adapt after the transformation of the international monetary order or after the temporary suspension of its network of rules. Important examples were the introduction and the return to gold standard. Other reasons for monetary reforms were the foundation of new states, the transfer of the monetary sovereignty between existing levels of government, or the formation of monetary unions (monetary unification, currency separation). Finally, monetary

[1]In this context, the term "monetary reform" is used synonymously with "currency reform".

[2]See Dornbusch, R./Fischer, S. (1986), p. 1.

[3]See especially Montiel, P. (1989) and Kiguel, M./ Liviatan, N. (1991).

reform is an essential part of transforming socialist economies into private market economies, as is presently the case in Central and Eastern Europe.

This enumeration makes it clear that the reform process can very well be characterized by multiple causes and goals. It is obviously impossible to reduce a discussion of monetary reform to the inspection of the technical act of introducing a new currency. It is necessary to integrate this act into a comprehensive network of additional (also nonmonetary) measures.

For this reason, it is appropriate to define "monetary reform" in general terms and keep in mind at the same time that there are political, structural, institutional, and topical differences in nearly each case. We can thus say that monetary reforms include all discretionary measures which lead to a change of some or all elements of an existing monetary order.[4] The monetary reforms which are to be analyzed in this paper are those showing far-reaching modifications and pursuing one or more of the goals mentioned above.

There is sequence of identifiable phases which is common to all reforms. These phases will be used in the second part of this paper as a framework for analyzing the selected monetary reforms. These phases are:

- the existence of a functioning monetary order,
- the emergence of a need for reform,
- the temporary maintenance of the inadequate monetary order for the time needed to prepare the reform,
- the decision for content and sequencing of the reform program,
- the implementation of the program,
- the introduction of safeguards to maintain the new monetary order.

Four monetary reforms will be analyzed in this paper. The decisive factor in selecting the particular details of the individual reforms was the content of the different phases. In addition, it is also desired to discuss those aspects which are potentially relevant to the introduction of a new monetary system in the

[4]The rigidity of this definition may be ostensible when applied to some special measures. But in our context this is without major relevance.

Ukraine. We assume that this reform has a complex network of targets to meet. The reform should be an essential element of the transformation to a market economy. This process requires the creation of a monetary order which takes into consideration the fundamental change in the significance of money. This includes the creation of a new monetary infrastructure through the foundation of monetary institutions (central bank, commercial banks) and markets (for credit and foreign exchange). The introduction of a new currency should allow the Ukraine to separate itself (for the present partially, if not completely) from the current currency area, the ruble zone. As the intended reform should also stop inflation, it is therefore also an element of a stabilization program. The integration of the Ukraine in the international (especially the European) economic and monetary system is a step which should be prepared in advance. In order for the reform to be successful, it should be conducted with external support and supervision.

2 Four cases

2.1 The introduction of Swiss "Franken" currency after the political unification (1850 – 1853)

The causes behind this monetary reform are different from those of the three reforms which are to be analyzed later.[5] The need for reform in this case was due to the political unification of the Swiss canton system. In the new Swiss constitution of 1848, the power to organize the coinage was transferred to the federal level. The creation of a common currency "as the first national work of the new federal government"[6] was to symbolize the political unification. Efforts to centralize the coinage were, however, since 1832 already underway. Economic considerations were the basis of these attempts. A multitude of cantonal, foreign, valid, and locally invalid coins circulated throughout the country. Many were exchangeable at variable rates and thus led to confusion and uncertainty in payment transactions. The population characterized this situation as a "currency chaos" which hampered economic and political development.

[5]See for details Theurl, T. (1992); Jöhr, A. (1915); Weißkopf, E. (1948).

[6]Blaum, K. (1908), p. 44.

Based on this assessment and the political unification, several Swiss experts offered proposals for a reform of the coinage. Even before political unification, it became obvious that an autonomous Swiss solution would not be possible and that the organization of coinage should take into account the international orientation of the Swiss economy. Eastern Swiss cantons recommended that the southern German "Gulden system" be introduced in the entire country, as most of their markets were situated there.

But the French standard gained increasing importance as a model for the organization of the Swiss coinage. It was thought to be the predominant system of the future, maybe even worldwide. The Swiss monetary system's lack of its own coinage and its acceptance of foreign coinage (based on the French standard) as legal tender became its special feature. In contrast to the French gold-silver standard, the new Swiss franc currency was designed as a pure silver currency. The regulation of paper money and of issuing banks were not included in the reform program. The power of regulation of these points remained at the cantonal level. This was due to the insignificant role of paper money in payment transactions, the commercial character of the issuing banks, as well as requirements set out by the Swiss constitution which was molded by these factors. The unification of the coinage, the conversion of part of the coinage circulation, and the unilateral pegging to a foreign system were the elements which were to be realized with this reform.

The conversion of coins was implemented according to conversion tables with binding character and which were based on metallic content. A regional concept was used, reaching from the Southwest to the Northeast, where the circulation was dominated by coins which did not correspond to the new standard. 319 different kinds of coins were brought to light by the reform.

The implementation of the coinage reform took three years and was impeded by several complications. Soon after the reform began, the price of silver rose. This event was mistakenly assumed to be a transitory change in the long-term price relation between gold and silver. The acquisition of the major part of silver coins from France turned out to be complicated and sluggish. A substantial amount of the coins left Switzerland as soon as it arrived. In 1853 the conversion of money was finished and the new monetary order was declared as completed.

Did the monetary order actually function? Was the reform successful? The immediate targets of reform were achieved. Nevertheless, the need for adaptation emerged as the outflow of silver coins from Switzerland continued. The pegging of the Swiss silver currency to the French gold-silver system enabled lucrative arbitrage transactions which led to this outflow of silver coins. The inflowing gold coins came to be willingly accepted in the payment system. It didn't take long before the young Swiss silver currency was reduced to a negligible quantity. By 1859, 90 % of the Swiss circulation consisted of French gold coins. They were accepted first by private agents, then by commercial banks and, in the end, by the government. In 1860 this status was sanctioned by the legislature. The Swiss currency thus changed officially to a gold-silver currency. The markets had simply not trusted the Swiss defense of the silver currency like an island in a bimetallic world in an atmosphere of continually rising silver prices.

When did the monetary reform as a consequence of the political unification of Switzerland end? According to contemporary experts, it was completed in 1853 when unification and conversion of coinage were finished. But a functioning monetary order was reached as soon as the gold-silver currency was officially implemented. Contrary to this view, the unification of the whole monetary system could be interpreted in retrospect as the real end of reform. If we follow this view, a far longer period must be take n into consideration. Following the unification of the coinage, the differing cantonal paper money systems did not disturb the monetary system and the economy. Nonetheless, the increasing importance of notes as a means of payment following the so-called "Geldkrisis" – a general shortage of coins in the early 1870's - caused a turning point. The stepwise unification of regulation of the paper money system was followed by its centralization. This process was completed in 1907 with the foundation of the central bank which took over the monopoly of emission three years later.[7]

[7]This interpretation is only permissible in a retrospective view. The comprehensive monetary reform following the political unification of Switzerland was not based on a consistent concept of reform with regard to its contents and its sequences. The dominance of the coinage was a peculiarity of the contemporary understanding of the monetary system. Therefore, a monetary reform first had to be a reform of coinage. Only the increasing integration of paper money gave need for its reform. Taking into account the conflicting interests of the federal and cantonal levels, these reforms could only be done in the complex democratic process of Switzerland.

2.2 The Austrian Monetary Reform after the First World War: The "Geneva stabilization" and the introduction of the Schilling currency

Compared with the Swiss case, the causes and individual steps of the Austrian monetary reform turned out to be rather complex. The reconstruction of the monetary order was only a part of a comprehensive network of reforms. Immediate tasks included the provision of food for the population and the removal of the direct impacts of the war. In addition to these essential goals, a concept for the future of the new Austrian economy had to be developed in order to deal with the shock from the breakup of the Austro-Hungarian Monarchy.[8]

The following problems had to be solved:

- The war economy had to be transformed into a peace economy: provision of food, restructuring of production, elimination of elements of the rationing system, etc.
- Important shifts in the Austrian economy became necessary as a result of the sudden interruption of the (previously smooth) division of labor within the monarchy: removal of the disproportionality within the economic structure, especially the reduction of high levels of services and public administration; development of the agricultural system; extension the energy supply system; integration of Vienna into a diminished economic area, etc.
- The search for a new position in the international economic system which had to take into account the high degree of dependence on foreign trade: balance of payments; new import and export markets; strategies for a new trade policy; adjustment world prices, etc.
- The definition of the relevant currency area for Austria: currency union with the successor states or currency separation

[8]See for extensive descriptions of economic, monetary and political situation after the end of the war, for example, Rothschild, K. (1947); März, E. (1981); Walré de Bordes, J. (1924); Butschek, F. (1985), Suppanz, C. (1976); Stiefel, D. (1978) Bachinger, K./ Mathis, H. (1974); Stolper, G. (1921); League of Nations (1920); Kamitz, R. (1949); Kernbauer, H./ März, E./ Weber, F. (1983).

- The monetary consequences of the war had to be removed. This included the restoration of a "monetary peace order" with the prohibition of financing government spending by printing money. In addition, a macroeconomic stabilization program was necessary to deal with the internal and external depreciation of the crown which began during the war. In wartime, the consumer price index had increased fifteenfold and the external value of the crown (on the Zürich foreign exchange market) had decreased to a third. The war expenditures were mainly financed directly through credits of the central bank or through the refinancing of war loans. The expansion of money during the war period was a result of this mode of financing.[9] Given the weak, limited, and fragmentary price controls, as well as the rationing of some goods, inflation was thus able to break out unchecked even during the war.

The latter two points demonstrated the need for monetary reform. Nevertheless, the currency reform after the First World War cannot be looked at in isolation from this group of tasks. It was one of the central factors influencing the length of the pre-reform phase and the change in the requirements for reform. According to the concept of economic policy at the time, monetary reconstruction had to include the stabilization of the exchange rate of the crown, perhaps the return to pre-war parity, the prohibition of financing public spending by printing money, and the consolidation of the budget.

The political, economic, and psychological environment hampered the immediate undertaking of monetary reform. A pessimistic and cautious basic mood accompanied the doubts about the economic survival of the Austrian state. Attempts to prove[10] this, considerations of a union with Germany, the uncertainty of the contents of the peace treaty, and the danger of revolution did not promote the reconstruction. The political environment was characterized by fragile political majorities, coalitions, and political parties without governing experience. "But it was the tragedy of the situation that the statesmen of the day, those of the right and the left alike, completely lacked the required conception of leadership. Instead of stimulating the patriotic and social aspirations of

[9] The development of money, prices, and exchange rates during and after the war and the enormous problems of estimation of them are shown in Walré de Bordes, J. (1924). Most of the later research on this topic is based on his data.

[10] Important arguments in this discussion are given by Stolper, G. (1921) and Hertz, F. (1925).

the masses and guiding them in the difficult tasks of reconstruction, the general attitude of the leading politicians, reared in a 50 million empire, was to profess complete disbelief in Austria's ability to exist as an independent entity."[11] The economic policies of the successor states of the Austro-Hungarian Monarchy were dominated by the target of internal consolidation and included the prohibition of imports and exports, as well as a policy of protective duties. The political and economic separation complimented each other. In Austria, neither the improving economic situation during the year 1920, nor the vanishing danger of revolution gave cause to monetary reconstruction.

The initiatives of the other successor states forced Austria, and the Austro-Hungarian Bank in particular, to go forward with a currency separation. Following the collapse of the monarchy, the Austro-Hungarian crown remained legal tender in all of the successor states. The Austro-Hungarian Bank continued to act as the common central bank as well. No other bank or institution had the necessary monetary infrastructure, like printing offices and sub-offices, at its disposal. The sub-office of the Austro-Hungarian Bank in Prague was converted into a main office. "In spite of the collapse of the Habsburgian Monarchy, the management of the Austro-Hungarian Bank initially hoped to maintain a monetary union between the new created states (Austria, Hungary, Czechoslovakia). But the separation of currency was unavoidable, because the struggle for autonomy, also in the economic sector, was only realizable with the creation of individual currencies".[12]

For those parts of the former monarchy which were integrated into already existing states, like the Italian and Romanian provinces, currency separation[13] meant the integration into existing currencies. Newly formed states, like Czechoslovakia and Poland, had to introduce a new currency and to found a central bank. The reforms of the successor states included the marking ("Abstemplung") of the old crowns which had been issued by the Austro-Hungarian Bank, as well as a reduction in the circulation of notes. This was then followed by the emission of their own notes. The separation away from the common currency of the Austro-Hungarian Monarchy took place without any coordi-

[11]Rothschild, K. (1947), pp. 19.

[12]Kernbauer, H. (1991), p. 25.

[13]For details of the separation of the common currency and the introduction of own monetary orders in the successor states, see Preßburger, S. (1976), pp. 2021 and Kerschagl, R. (1920).

nation and without the participation of the old common central bank. Each successor state tried to shift the burden of separation to the other states. They expected unavoidable, negative impacts on their economies as a result of the monetary policy of the Austro-Hungarian Bank.

Yugoslavia was the first successor state to mark the old crowns in early 1919; Czechoslovakia followed. Unmarked notes floated to those regions of the old monarchy where they were still legal tender. Austria was forced to react. The marking of the notes with "Deutschösterreich" took place during March 1919. In the beginning of the marking activities, unmarked notes had a better exchange rate abroad. They were no longer legal tender anywhere, however, after the successor states had introduced their own currencies and in Austria only marked notes were issued and accepted. Counterfeits of the mark followed; this led to uncertainty and panic in Austria. The Austro-Hungarian Bank reacted initially by changing its stamps and finally by issuing new notes.[14]

The Peace Treaty of St. Germain sanctioned the previously realized marking actions and dictated further monetary conversions. It also laid down the rules for the compensation of the owners of notes out of the gold and foreign currency reserves held by the Austro-Hungarian Bank. To put things to an end, the treaty also ordered the liquidation of the central bank.

But the task of monetary stabilization, the second essential element of monetary reform, had not yet been dealt with. The conditions had not improved in the meantime either. An unfavorable balance of trade, the flight of capital, the hoarding of foreign money, the subsidizing of basic food prices, measures of social policy with a high impact on the budget – like the introduction of an unemployment insurance system –, the financing of budget deficits by printing money, the indexing of wages – which was gradually expanded to all sectors of employment –, the switch to a calculation of prices based on real terms, American dollars or Swiss francs, the complete loss of confidence in the "crown" in Austria and abroad, the failure of all plans of reform in their early phases, the rejection of support by the League of Nations, the debt-reducing effect of inflation, ... occurred in combination with high budget deficits, high growth rates of nominal money, increasing rates of inflation and the decreasing value of the crown in foreign exchange markets. It was obvious, that the Austrian currency could no longer provide the basic services of a usable form of money.

[14]See Preßburger, S. (1976), p. 2116.

This mixture of bilaterally conditioned and reinforced events, reactions and expectations, contained all the requirements for the perpetuation and acceleration of inflation. The theoretically interesting question remains unsolved as to whether the depreciation of the crown caused internal inflation or whether price expectations moved the exchange rate. But, according to the economic circumstances of the period, the answer seems to be irrelevant. The internal and external depreciation of the crown proceeded in steps and finally ended in hyperinflation in the second part of 1921. The external value of the crown had been decreasing faster than its internal value since 1920. In July and August 1922 both depreciated to a quarter.

During this process, a temporary stabilization of the exchange rate only then occurred, when, in the course of an intended reform program, it seemed likely that foreign support in the form of foreign capital or assistance from international organizations was to be forthcoming. Once these expectations were disappointed, however, the vicious spiral continued. In retrospect, it seems that foreign aid was the engine of expectation formation. "A foreign loan would both help to balance the government's budget and to stabilize the foreign exchange rate, the barometer of the country's confidence in the crown."[15] Several different reform programs were initiated after 1919, but each of them were grounded before implementation. Their essential elements were the introduction of a general property tax, the access to public or private foreign capital, the foundation of a private and independent central bank, the consolidation of the budget, and the removal of food subsidies (which by the end of 1921 were abolished).

Finally, the hyperinflation, in combination with the failure of all initiatives concerning reform, led to a tour de force, which again included an attempt to reach foreign aid and which was linked to the fate of Austria in general by the federal chancellor Seipel. "If, against all expectations this last hope were also to prove chimerical the Austrian Government ... would have to call together specially the Austrian Parliament and to declare ... that neither the present nor any other Government is in a position to continue the administration of the State."[16]

This was the beginning of the Austrian stabilization after the First World

[15] Rothschild, K. (1947), p. 31.

[16] Walré de Bordes, J. (1924), p. 27.

War.[17] Successful negotiations on an international loan, which was under the patronage of the League of Nations and which was guaranteed by Great Britain, France, Italy and Czechoslovakia (650 million gold crowns) led to a change in general economic expectations. Speculation concerning the appreciation of the crown followed immediately. In August 1922, the crown's exchange rate was stabilized at a level 14,400 times higher than the pre-war parity. The stabilization succeeded although borrowing from the bank of issue had not yet been stopped, although the budget was not yet consolidated, and although the terms of the loan, as well as the whole stabilization program, were not yet known. The inflation rate reached its peak turning point in September 1922; remaining under 5 % in the following years.

In addition to the international loan, which offered very favorable conditions to the subscribers and the revenues of which had to be used to equalize the budget deficits emerging in the following two years, other essential elements of the reform included a program for budget consolidation and the foundation of the independent Oesterreichische Nationalbank. The budget was to be put back in balance by cutting back public sector employment (100000 employees at the federal level), reducing expenditure the public railway system, the increasing taxes and fees, and introducing a sales tax. State borrowing from the National Bank was forbidden. This provision was met in November 1922. Tax revenues and expenditures, higher than expected, led to the early equalization of the budget.[18] The budget deficits of 1923 and 1924 only reached approximately 50 % of their estimated levels. The loan turned out to be oversized for fiscal purposes.

The conditionality of the program was institutionalized. A "Völkerbundkommissär" was appointed in Austria[19] to monitor the implementation and to release the loan payments. Kienböck pointed out, that "Austria would have been foolish, not to accept this control and to wreck the whole plan of the League of Nations because of this provision. Without this control the quick success in

[17]See for details and for the case history of Geneva Stabilization, Kienböck, V. (1925); Gärtner, F. (1923); Kernbauer, H. (1991).

[18]See Franco, G. (1990). Franco analyzed the chain of impact between the stabilization of the price level, the tax revenues and the balance of the budget. He concludes, that the effect of the stabilization of the price level on tax revenues was underestimated.

[19]There also was an external consultant located in the new central bank.

the first year of consolidation never would have been given credit abroad".[20] In addition to this external supervision, the Parliament had to delegate emergency powers to the government to conduct the consolidation program for the next two years.

From the very beginning, the sole aims of the Geneva stabilization program were to stabilize only the currency and budget. Therefore, it was formulated and implemented isolated from the problems of the real sector of the Austrian economy. This goal was reached efficiently and completed in 1924 when the schilling currency was introduced. The schilling developed into a symbol of strength during the years between the two world wars. 10,000 paper crowns were converted to 1 schilling. The pre-war crown was equivalent to 1.44 schillings. A legal parity to the US dollar was fixed. In 1926, foreign exchange operations were completely deregulated. This final step marked the end of the implementation of the new monetary order in Austria under the control of the League of Nations. It had taken a relatively short period of time and was accomplished without major complications. But did the new order work?

In an isolated observation of the monetary sector of the economy, and based on indicators which were used to measure the success of stabilization and which revealed the requirements of economic policy in the future, and also compared with the economic standards before the war, the reattainment of which was the declared aim of the reform program, the answer is definitely "yes". The stabilization was followed by a period of monetary expansion which was caused by the return flow of flight capital, a bull movement on the stock exchange, and the revenues of the international loan. The monetary expansion gave rise to inflationary fears. A discussion followed concerning the appreciation of the schilling, but in the end, it was without any consequence.

The question as to whether there was an economic crisis caused by stabilization cannot be answered with certainty. In any case, special causes were responsible for the fact that the outbreak of the economic crisis did not take place immediately after stabilization, but rather followed the end of the bull movement and the "franc speculation" during the year 1924. In the work of contemporary experts, the period between 1924 and 1926 is characterized as a persistent depression, the growth rates of real gross product allow such a

[20] Kienböck, V. (1925), p. 127.

characterization only for 1923. Beginning with 1923, unemployment rates increased dramatically and remained at high levels until the Second World War. But this increase in unemployment was caused by factors which were not solely related to the stabilization.[21]

But in a more comprehensive reflection, we have to take into account that up to this point in time, only a part of the group of postwar tasks which were mentioned in the beginning of this discussion (see pp. 6) were solved. The consolidation and restructuring of the real sector of the Austrian economy had not yet been undertaken. The Geneva stabilization program did not take into consideration the entire economy. Nonetheless, it substantially changed the environment of the real sector.[22] In the following years the worldwide economic development and the political environment in Austria hampered the successful completion of this task.

2.3 The Austrian monetary reform after the Second World War: The reintroduction of the Schilling currency

The "quiet financing of war" in combination with a rigorous system of rationing and price regulation during the Second World War, brought about a monetary overhang of – until 1947 – unknown dimension. This liquidity, hoarded and held in deposits, faced an enormous shortage of goods. A potential danger of inflation was the result. Therefore, the primary goal of monetary reform had to be the prevention of the outbreak of open inflation. Additional goals included the separation of the Austrian currency from the German currency area and the integration of a new Austrian currency into the international monetary order.

The monetary reform was the first of three separate attempts at stabilization.[23] Concentrating on the macroeconomic stabilization in Austria after the Second

[21]See, for example, Butschek, F. (1985), pp. 45 and Rothschild, K. (1947), pp. 36. See also Wicker, E. (1986). Wicker analyzed the effects of stabilization on employment assuming the existence of rational expectations.

[22]See also März, E. (1981), pp. 502 and Kernbauer, H. (1991), pp. 247.

[23]See for details Theurl, T. (1987); Österreichisches Institut für Wirtschaftsforschung (1945); Butschek, F. (1985); Gurley, J. (1953), Metzler, L. (1946); Bachmayer, O. (1960).

World War, the period of reform lasted from 1945 until 1952. The second and third steps were necessary as stabilization was not achieved by the monetary reform. This unplanned sequencing was an important feature of the Austrian stabilization program.

The monetary reform itself was successive and implemented by a number of laws in the years from 1945 to 1947. No overall concept existed. The central idea behind the reform was that the elimination of excess liquidity and the introduction of a new currency system would help create ideal conditions for recovery. This had to occur as fast as possible, as the money circulation had already begun to expand and was supplied by uncontrollable sources. The first of which was the military government, which issued occupation money (Allied Military Schillings). In addition, there was an inflow of notes from the former "Reichsmark area". There was no clear idea concerning the present circulation and the future demand for money. Because of the general shortage of goods, the system of rationing as well as price and wage controls remained in force. The external component of the reform was excluded as a result of the shortage of foreign exchange, the rigorous rationing of such, and the small volume of foreign trade, which was mainly handled on a barter basis.

In July 1945, the restoration of the prewar statutory law concerning the "Oesterreichische Nationalbank" was accompanied by a partial blocking of deposits in the Soviet zone (Schaltergesetz). The population was urged to deposit its ready money. It was promised, that these deposits would be preferred in the following step of the reform. As it turned out, this did not happen. In November 1945, the "Schillinggesetz" marked the second step of reform. From now on the schilling was the Austrian currency. The per capita quota of the new currency was 150 schillings. Amounts beyond this limit were transferred to a conversion account. All deposits which were created during the war were then blocked across the country. Permitted withdrawals from "free accounts", generous approvals and special approvals for reverse transfer of blocked deposits, the release of necessary operating expenses, the financing of occupation costs, etc. were responsible for excess liquidity which thus continued to exist, now in schillings.

In December 1947, the "Währungsschutzgesetz" controlled the conversion from old to new schillings. The conversion rate was 1:1 for the per capita amount of 150 schillings and 1:3 for amounts beyond this limit (including the new deposits). The "Währungsschutzgesetz" also included the cancellation of blocked deposits, the settlement of public assets, as well as the introduction of a liquidity aid for commercial banks.

A correct characterization of the "philosophy" of the monetary reform is expressed in the following statement of the "Österreichisches Institut für Wirtschaftsforschung": "Having in mind the different ways of solving the monetary problems, the way of a stepwise consolidation was selected. Radical techniques of reform were dismissed, the effects of every measure taken were observed carefully."[24]

While this statement stresses the avoidance of friction, the following statement centers around the effectiveness of the reform. It is taken from a comparative study of several monetary reforms: "Significant for the postwar situation in Austria was the implementation of several monetary actions, which were taken ad hoc and without a clear concept for a comprehensive reform and for a future monetary policy".[25]

The stepwise monetary consolidation was associated with an excessive uncertainty concerning the final measures which were to be taken. The reaction was in general of substitutional and protectional nature. The primary goal was to profitably dispose of money which was expected to be absorbed. Such activities were especially taken in the period between the announcement and the coming into force of the Währungsschutzgesetz. This three week period was the result of the veto power of the occupation forces. Also the variety of different accounts was the result of the delayed implementation and the missing overall concept. "The distinctions were based on the zone in which the individual resided, the date the bank deposit was opened, and the reform under which the deposit was regulated. By the time the third reform came along – the provisions of which cancelled outright some deposits, converted others on a deflated basis, left others untouched, converted a few into forced loans, and blocked still others for a short period of time and the remainder for longer periods – the average depositor was sorely pressed to determine what he fully, only partially, or did not own."[26] The losses during the implementation of the monetary reform, stressed above, increased the economic costs which emerged due to the failure

[24]See Österreichisches Institut für Wirtschaftsforschung (1946), pp. 8.

[25]See Sauermann, H. (1961), p. 466.

[26]Gurley, J. (1953), p. 85.

of the Austrian currency to provide the services of money. Monetary overhang, rationing, price regulation, and the possibility of circumvention and loopholes in the rationing system were responsible for this failure.

Initially, the dominating opinion was that the monetary reform had been completed with the realization of the "Währungsschutzgesetz", that excess liquidity was absorbed, that the danger of inflation was banned, and that the monetary preconditions for recovery were laid. It soon became apparent, however, that this opinion was wrong. The constellation described above was mitigated but not removed. Now open inflation resulted. The following years experienced the highest inflation rates realized in Austria after the Second World War. They were also high in international comparison.[27] The overcoming of the aftermath of the war, the foreign aid given by ERP, the beginning of recovery, the missing medium-term stabilization program with clear "ordnungspolitischen" ideas, the preceding "sound" monetary reform in combination with the monetary accommodation by credit expansion, the releases from the "Gegenwertfonds", as well as the budget deficits created an inflation-furthering environment. Therefore, experts were convinced that the necessary abolishment of rationing and price regulation would not be possible without inflation. It was felt that if it was not possible to avoid inflation, economic policy should be used to at least control it and see to it that its burden remain fairly distributed. The realization of true price relationships for goods and resources and the linkage to the world prices was to be achieved with a minimum of inflation and within the framework of special distributive goals. These included the avoidance of losses of real income as well as excessive burden for the lower income brackets.

The second round of the postwar stabilization program was enforced by a cooperative income policy. Between August 1947, and July 1951, five "wage-price agreements" were negotiated by the representatives of employers and employees. The negotiations were coordinated by the involved ministries and were sanctioned by parliament and government. Regulated prices, tariffs in the public sector, transfers, subsidies, wages, as well as tax rates, were the central points in these agreements. Every new agreement was preceded by an estimation of living costs. Increases in wages and transfers were oriented on

[27]In this period the development of the official price level overestimated inflation, because transactions in black markets are not included.

this estimation. Increasing costs caused by this agreement led to a raise of prices for goods. Each agreement interrupted the wage-price spiral only for a short time. It was the main feature of the chosen way of an "administrative search for the true set of prices". Each agreement solved pressing problems for a short time. In this way a permanent stabilization was impossible.

The fading effectiveness of each agreement and the increasing aversion against inflation led to pressure for action, which resulted in the last step of the post-war stabilization program. In September 1951, the "Sozialpartner" agreed on price reductions and on a stop of wage growth. The prices for important goods were cut. This action was interpreted as a signal that the tradition of sanctioning and perpetuating rising prices was to be abandoned. An "orthodox" stabilization package was executed which included the reduction of the planned budget deficit, a rise of the bank rate, and an agreement on credit controls. In the beginning of 1952, the first signs of stabilization (increased savings, decreased prices, decreased sales, increased unemployment) emerged. They were followed again by a restrictive monetary policy in June. An increase in money and credit had renewed the apprehension of an inflationary spiral. Finally, the stabilization was achieved with these measures. The announcement and implementation of this coordinated stabilization program and its targets, showing also an "ordnungspolitischen" change, resulted in a breakdown of the existing inflationary expectations. The transition to a normal economic situation had begun. A short stabilization crisis was followed by the recovery of the first postwar business cycle. The monetary order was functioning and stable. It proved to be an essential element of the "Raab-Kamitz-Kurs", the Austrian way of introducing the social market economy.

Until this time, the external value of the currency was only of minor importance. The exchange rate, initially fixed by the Allies, was later supplemented by regulations such as "Belassungsquoten" and "Ausgleichskassen". A variety of different exchange rates emerged. In 1949, a system of multiple exchange rates was introduced which was maintained through the rationing of foreign exchange. It was unified after the internal stabilization in 1953. In 1959, the realization of the European convertibility steps ended in the transition to de facto convertibility.

2.4 The West German monetary reform after the Second World War: The introduction of the DM currency

The monetary heritage of the Second World War for Germany was a monetary overhang and a lot of "Reich securities" without any value, held by German commercial banks. After the end of the war, the expansion of money circulation continued. Occupation currency was issued by the military governments to finance their expenditures. The supply of commodities diminished to a minimum. The occupying powers retained the existing system of rationing commodities and foreign exchange as well as the price and wage freeze.

During 1946, the system of rationing largely collapsed. There was a shortage of raw materials, energy, and primary products. The shortage of foreign exchange made it impossible to import raw materials from abroad. The destroyed transportation and information infrastructure hindered an adequate use of the existing resources and goods. The low productivity of resources contributed to the low level of production.

In other sectors of the economy, serious problems of coordination also appeared. Official functioning markets hardly existed. In black markets the legal currency was replaced by some other means of exchange. Barter economies emerged at the local level. The "Reichsmark currency" failed to perform the services of money to an adequate degree. These circumstances contributed a disorganizational tendency to the economy. They reduced the incentives to produce and sell for money or to work for money wages. "The West German case is, of course, an outstanding example of how excessive liquid holdings can destroy a controlled system and lead to a decrease in incentives throughout an entire economy."[28] The destruction increased in size the longer it lasted.[29]

At the same time, the basic concepts of the German currency reform were being developed. Even during the last months of the war, different proposals were elaborated and in the following three years many plans were added.[30]

[28]Gurley, J. (1953), p. 100. See also Casella, A./ Feinstein, J. (1990).

[29]See for the description of the monetary developments in the period until the currency reform for example Möller, H. (1976); Abelshauser, W. (1983); Klump, R. (1985); Stucken, R. (1964); Buchheim, C. (1988) and Sauermann H. (1979).

[30]Approximately 250 different projects. See a selection in Möller, H. (1961).

"The liquidation of the war economy and the creation of a new economic order could only mean the restoration of a competitive market economy. This, of course, was impossible without a functioning price system, and one of the preconditions for this was the renewal of the monetary system."[31] An essential part of the reform also had to be the restoration of realistic bank balance sheets and the reintegration of the German currency into the international currency order. German experts stressed the equalization of burden, that was, the compensation for damages resulting from the war and its aftermath, as an important element in the monetary reform.

But conception and implementation depended on the military governments of the occupation powers. This played an important role in determining the length of the preparation period and the effectiveness of the reform. "To some extent, this was to be welcomed, for the reform involved encroachments of such gravity upon existing property rights that it would have been simply impossible to carry them out through the normal democratic and parliamentary legislative process. Moreover, to conduct the reform in the latter way would have forfeited the features of secrecy and surprise, essential if the reform was to succeed, which characterized the measures of the occupying powers until the very moment before they were put into effect."[32]

The negotiations between the four allied powers started quite early, but lasted for several years. Different expectations and goals concerning fundamental questions, such as the sequencing and preconditions for reform, as well as topics of minor importance, such as the location where the new notes were to be printed, led to the failure of several rounds of negotiations. Finally, it was decided that a common reform for all four zones would be impossible.[33] Assisted by German experts in the spring of 1948, the final conception was elaborated and prepared.

Although there existed uncertainty about circulation and the future demand for money, the efficient implementation of a perfectly prepared monetary reform began on June 19, 1948. From the very beginning, it proved to be effective; no corrections were needed later on.[34]

[31] Sauermann, H. (1979), p. 307.

[32] Pfleiderer, O. (1979), p. 360.

[33] See Gottlieb, M. (1956).

[34] See for details of currency reform of 1948 Möller, H. (1976) and Sauermann, H. (1979).

The reform was proceeded by the foundation of the "Bank deutscher Länder", the predecessor of the "Deutsche Bundesbank" in March 1948. Its organizational apparatus was necessary for the measures following the monetary reform. Currency laws were announced two days before the conversion of the old currency into DM. The new DM were allocated in two steps and were distributed as per capita quotas (40 DM immediately, 20 DM in August 1948). The conversion rate amounted to 1DM = 1RM. The conversion of "RM assets" took place in the following way: for 100 RM, 5 DM were booked in an open account and 5 DM in a "temporarily" blocked account. In autumn 1948, a final conversion rate of 100 RM to 6.5 DM was fixed. Current payments, such as wages, salaries and pensions, were converted on a 1:1 basis. "Reichsmark assets" of public institutions and deposits between banks were cancelled. Also, the liabilities of the "Reich" did not qualify for conversion. The financial reconstruction of commercial banks, insurance companies, and building and loan associations were enabled by the allocation of "Ausgleichsforderungen". The assignment of the power of issuing notes to the "Bank deutscher Länder" and the introduction of a system of minimum reserves were additional elements of the reform. The power to realize an equalization of burden was assigned to German authorities.

The monetary reform was accompanied by a tax reform, which included the decrease of the rates of income-, property- and consumption-taxes. Immediately before the monetary reform, a law concerning basic principles of rationing and pricing policy for the period after the reform was passed by the legislative institutions. The combination of these reforms turned out to be an important signal for liberalization, although rationing was in no way eliminated abruptly. It ceased for most manufactured commodities. Three months later wage controls were abolished.

The new atmosphere helped bolster immediate trust in the new currency and it figured as the central incentive to sell goods and labor for DM. From now on, existing commodities were offered on a large scale in the official markets. Production was stimulated. The economy was remonetized immediately. The discussion is still going on about the comparative impact of the monetary reform, of the reform of the economic mechanisms of coordination, as well as the foreign economic aid given within the Marshall-Plan, on the growth rates in the postwar period.[35]

Immediately after the reform, demand and production grew while price level remained stable.[36] The velocity of money increased; based on the initial stock distributed to economic agents, money supply expanded. In October 1948, a slight inflationary pressure occurred. Revived expectations of inflation, the apprehension of a new currency reform, and the existing wage freeze promoted critical statements about the new market economy. Economic policy measures were taken. A part of the initially blocked DM deposits was cancelled. For the first time, a rigorous monetary policy was possible and was exercised. Surpluses in the public sector budgets were realized. Tax revenue exceeded expectations.

At the beginning of 1949, the price level decreased and unemployment increased. At this point the monetary policy of the new central bank was criticized because of its severity. The relaxation of monetary policy was an essential element of an employment scheme. The expansive measures supported the recovery induced by the Korean War which began in the autumn of 1950. The recovery ended in the "deutsche Wirtschaftswunder". The new monetary order proved its ability to function on a long-term basis.

The internal stabilization within a framework of regulated external trade and currency relations was also aspired in the German case. The reintegration into the international division of labor took place via bilateralism, the European Payment Union, and steps of liberalization within the OEEC. In 1958 the DM was declared fully convertible.[37]

3 Reform Experience: Conclusions

In this concluding part of the work some of the experience gathered from these monetary reforms will be summarized. Obviously its applicability to the Ukrainian case can only be judged by a close examination of its preconditions. But this examination was no task of this paper. The following conclusions can be drawn from the monetary reforms analyzed:

[35] See for example Möller, H. (1976); Abelshauser, W. (1975); Manz, M. (1968); Ritschl, A. (1985); Klump, R. (1985); Buchheim, C. (1988).

[36] See for the description of the economic development in the years following the currency reform for example: Stolper, W./ Roskamp, K. (1979).

[37] See for details Wallich, H./ Wilson, J. (1981).

1. A decision for monetary reform was taken when economic welfare losses reached a level which could no longer be accepted and were traced back to a monetary order characterized by an inadequate set of incentives. *If the official currency no longer performed the services of money, a need for reform was identified.*

2. Therefore, the general target of each reform program was the reconstruction of an environment which made it possible for the (old) official currency or for a new one to carry out the basic services of money. To reach the reform targets each program had to eliminate uncertainty and to reverse expectations. This resulted in a stable foundation for future decisions of the economic subjects. *The decision to undertake a monetary reform first indicated a change of regimes. But the confidence in this change had to be safeguarded by an adequate environment, preparation, content, implementation, and effectiveness of the reform process.*

3. On the one hand, monetary reforms were oriented on the framework of the past. Their main goal was the restoration of the old monetary order (after First World War). On the other hand, they figured as a substantial part of a future-oriented strategy. They were to prevent the failures of the past. *After overcoming the difficult transition period, the existence of a broad basic consent about the future economic, political, and social system facilitated the tackling and conducting of reform as well as the acceptance of the burden of reform.*

4. Delays in the decision about when to start the reform (as a result of paralyzed expectations after the First World War, missing information about the need of correction, constitutional problems, etc.) increased the economic costs arising from an "erosion of the currency". Therefore, the probability of an early reform was augmented. *Attitudes of moral hazard occurred. Individual reactions of substitution and protection were taken to avoid the expected burden. But this behavioral pattern accelerated the process of demonetization and disorganization of the economy and diminished the effectiveness of the reform.*

5. The effectiveness of the monetary reforms was not only influenced by the contents but also by the process of preparation and implementation. *Reforms which were prepared precisely, which were initiated unexpectedly*

for the public, and which were conducted rigorously without exceptions and in one step caused low "preparation and implementation costs". In this context it is especially fruitful to compare the monetary reforms performed in Austria and Western Germany after the Second World War. "One monetary reform(step) may not give rise to a flight from money, but it is extremely doubtful that most individuals will remain calm after a second or third program ... It is probably true that monetary reforms are also subject to diminishing returns."[38] It is not possible to entrust far-reaching monetary reforms to evolutionary processes, the intervention of a regulating institution is a must.

6. *There existed a trade-off between the speedy implementation of the reform* which had to take place in a situation of high uncertainty and had to avoid a perpetuation and deterioration of negative monetary preconditions, *and the delay of the reform* to a time when its need could be calculated more exactly and when the future environment could more easily be taken into consideration. The risks of the first strategy existed in the post-reform phase, that of the second, in the pre-reform phase. This trade-off existed quite independent from the constitutional and political setting.

7. All four monetary reforms resulted in economic costs for the agents. The distribution of these costs to the different groups of the society was quite uneven. *The preparation of each monetary reform therefore took place in a pronounced area of tension between the assurance of effectiveness and the maintenance of the basic rules of the democratic process.* Reforms which stressed the necessities of the democratic process led to

    - the delay of burden
    - the delay of the realization of reform targets
    - the necessity of additional reform steps
    - the extension of the length of reform
    - the increase of pressure group influence
    - the delay of unavoidable steps which in the end resulted in a burden for the economic agents.

[38]Gurley, J. (1953), p. 95.

When we look at the reform as a whole, the conclusion is valid that this pattern was significant for the reform in Austria after the Second World War as well as for Switzerland after the process of political unification. Contrary to these examples, priority was given to the immediate realization of the targets of reform in the rigorous monetary reforms (Austria after the First World War, West German currency reform after the Second World War). It is neither possible nor allowed to draw the conclusion that an effective reform has to be initiated by a (benevolent) dictator. In any case, a detailed examination of the political and social environment is necessary.

8. If the immediate success of monetary reform is weighed against the suspension of democratic rules, two additional aspects have to be taken into consideration. *When the problem-solving capacity of the parliamentary system is low and when the expectations of the (internal and external) economic agents are dominated by this fact*, the danger exists that the continuation of monetary disorder will destroy the political system. This danger will primarily occur in young democratic systems and after several failed attempts of reform. The Austrian situation before the "Völkerbundsanierung" is a good example for this. Under such preconditions, *a credible and effective reform cannot be undertaken by the politicians of this system.* Besides this, it is important whether or not the currency reform marks the beginning of a period of prosperity which has the potential to improve the economic position of all groups. This was the case in West Germany after 1948, but did not apply to Austria in 1922. "Yet the benefits which the West German economy derived from the reform brilliantly justified the robust methods employed, methods which were possible only under a regime of military occupation."[39]

9. Each monetary reform had to take into account that within a market economy, money plays a special role. With the exception of the Swiss reform, all reforms took place after wars, characterized by the partial (First World War) or total (Second World War) suspension of the price-mechanism. Therefore, a lasting success of monetary reform was only possible when a system of market-driven incentives was reintroduced.

[39] Pfleiderer, O. (1979), p. 360.

10. The distributive consequences of reform were influenced by the timing of the introduction of such incentives. Especially the income policy before, during, and after the reform played a decisive role. We have to separate measures of income policy, distribution policy, and "Ordnungspolitik" in the pre-reform period from those during and immediately after the implementation of reform.[40] Before the first monetary reform in Austria, the effects of an open inflation on the level and distribution of in come were absorbed by the indexation of wages and food subsidies financed out of the budget, while prices in general were free. This resulted in a continuation of inflation. After the Second World War, the internalization of the distributive consequences, which was based on administrative instruments, resulted in a lengthening of the reform period and in the delay of stabilization.[41] The reform in Western Germany was integrated into the existing price and wage freeze. The timing of the realization and primarily the announcement of the "Ordnungsreform" supported the effectiveness of the overall reform. *Monetary reforms were characterized by a trade-off between the realization of effectiveness and the fair distribution of burden. The coordination with strategies of income policy, distribution policy, and "Ordnungspolitik" differed between the analyzed cases.*

11. Monetary markets are interdependent with the markets of goods and resources. Therefore, a monetary reconstruction has to take into account the structural and global preconditions of the real sector. Besides the monetary rearrangements, a shock like a war yielded substantial real changes. *In all analyzed cases, the monetary consolidation was seen as an advance concession for the solution of problems in the real sector of the economy, such as adaptation in the structure or reconstruction. But they were not seen as an element of a comprehensive reform program.* In the Austrian and West German monetary reforms following the Second World War, the economic performance and an adequate economic policy released the realization of restructuring the real sector of the economy. In the interwar period in Austria the contrary was true.

[40] For the different consequences of "orthodox" and "heterodox" programs see Kiguel, M./ Liviatian, N. (1991), pp. 94.

[41] For a positive evaluation of this reform strategy see Butschek, F. (1985), pp. 117.

12. *The monetary system of an economy does not work in isolation, but has to be seen in its international context. Therefore, the reintegration into the international monetary and trade order was an essential step of all analyzed monetary reforms.* This was done in Switzerland and in Austria after the First World War in one step during the course of reform. After the Second World War internal reforms were released by measures of external protection (rationing of foreign exchange, European Payments Union, several steps of convertibility, etc.). This not only shows a change in the priorities of economic policy and the level of monetary integration, but also reflects a shift of the rules of the international monetary order (temporary arrangements, escape rules, common solutions, consideration of need for international coordination, etc.). A two-step strategy has to be preferred, if

    1. the task of reform is complex,

    2. the integration into the future-relevant currency order has progressed,

    3. this strategy is feasible given the preconditions of the past and future order.

13. *The separation of a political union was followed by the disintegration of the monetary union (Austro-Hungarian Monarchy). The uncoordinated separation of the crown currency led to a competition of marking within the former monetary union, joined by external costs for the former members of the union.* To avoid these effects, a separation of the common currency area should be based on a common reform program. If this strategy is not feasible because of political or other reasons, it is in the interest of the individual states to undertake a separation at the earliest point in time.

14. *All four monetary reforms included the introduction of a new currency. In all cases this was an act of high symbolic content and was meant to reflect the new state and/or a successful stabilization.* As a trust-furthering instrument, this aspect should not be neglected.

15. *All four reforms also included the founding of a state-independent central bank. This step was absolutely necessary after the enormous faulty developments in the monetary sector which could not be avoided by the existing central banks.* This was especially true when inflation was fi-

nanced by the "printing press". Besides this, an institution was necessary for conducting monetary policy following the monetary reform.

16. *Even during the course of monetary reforms or immediately after their realization, the environment for functioning monetary markets had to be reestablished* (i.e. banking reconstruction). This was an essential element for a functioning monetary order after the end of the period of adaptation.

17. *Whether a monetary reform is successful is also determinated by developments in the post-reform phase. Problems of adaptation and transformation emerged in all cases.* The Swiss coin order, for example, proved unable to function immediately after the reform. Crises occurred in the three examples of internal and/or total stabilization. In this post-reform phase, economic policy has to fulfill a very important task. In spite of the existing problems of adaptation, the defense of the new monetary order has to be credibly signaled. If the reform succeeded in interrupting the inflationary expectations, the length and depth of the "stabilization crisis" must be limited. According to Dornbusch/Fischer this is primary a task of the monetary policy. "Thus any policy package that makes a fetish out of limits on money growth to secure credibility is heading for trouble. The trouble shows up in high real interest rates ... that are prolonged to the point where either serious recession or a violation of the money growth limits result."[42] In the post-reform phase after the Second World War, Germany stressed the restrictive, Austria the expansive aspect.

[42]Dornbusch, R./ Fischer, S. (1986), pp. 40.

References

Abelshauser, W.: Wirtschaftsgeschichte der Bundesrepublik Deutschland 1945–1980 (Frankfurt 1983).

Abelshauser, W.: Wirtschaft in Westdeutschland 1945–1948 (Stuttgart 1975).

Bachinger, K.; Matis, H.: Der österreichische Schilling (Graz 1974).

Bachmayer, O.: Die Geschichte der österreichischen Währungspolitik (Wien 1960).

Blaum, K.: Das Geldwesen der Schweiz seit 1798 (Straßburg 1908).

Buchheim, C.: "Der Ausgangspunkt des westdeutschen Wirtschaftswunders", Ifo-Studien, Vol. 34 (1988), pp. 69–77.

Butschek, F.: Die österreichische Wirtschaft im 20. Jahrhundert (Stuttgart 1985).

Casella, A.; Feinstein, J.: "Economic Exchange During Hyperinflation", Journal of Political Economy, Vol. 98 (1990), pp. 1–27.

Dornbusch, R.; Fischer, S.: "Stopping Hyperinflations Past and Present", Weltwirtschaftliches Archiv, Vol. 72 (1986), pp. 1–47.

Franco, G.: "Fiscal reforms and stabilisation: Four Hyperinflation cases examined", The Economic Journal, Vol. 100 (1990), pp. 176–187.

Gärtner, F.: Die Stabilisierung der österreichischen Krone (München 1923).

Gottlieb, M.: "Failure of Quadripartite Monetary Reform 1945–1947", Finanzarchiv, Vol. N.F. 17 (1956), pp. 398–417.

Gurley, J.: "Excess Liquidity and European Monetary Reforms, 1944–1952", The American Economic Review, Vol. 43 (1953), pp. 76–100.

Hertz, F.: Zahlungsbilanz und Lebensfähigkeit Österreichs (München 1925).

Jöhr, A.: Die Schweizerischen Notenbanken 1826–1913, Vol. 1 and 2 (Zürich 1915).

Kamitz, R.: "Die österreichische Geld- und Währungspolitik 1918–1945", in: Hundert Jahre österreichische Wirtschaftsentwicklung 1848–1948, ed. by Mayer, H. (Wien 1949).

Kernbauer, H.: Währungspolitik in der Zwischenkriegszeit (Wien 1991).

Kernbauer, H.; März, E.; Weber, F.: "Die wirtschaftliche Entwicklung", in: Österreich 1918–1938. Geschichte der 1.Republik, ed. by Weinzierl, E.; Skalnik, K. (Graz 1983).

Kerschagl, R.: Die Währungstrennung in den Nationalstaaten (Wien 1920).

Kienböck, V.: Das österreichische Sanierungswerk (Stuttgart 1925).

Klump, R.: Wirtschaftsgeschichte der Bundesrepublik Deutschland (Wiesbaden 1985).

League of Nations: Currencies after the War (London 1920).

Manz, M.: Stagnation und Aufschwung in der französischen Besatzungszone (Mannheim 1968).

März, E.: Österreichische Bankpolitik in der Zeit der großen Wende 1913–1923 (Wien 1981).

Metzler, L.: "The Colm-Dodge-Goldsmith Plan, Appendix N: Considerations Regarding the Foreign Exchange Rate for the Deutsche Mark", Zeitschrift für die gesamte Staatswissenschaft, Vol. 135 (1979), pp. 474–479 (First published 1946).

Miguel, A.; Liviatan, N.: "Stopping Inflation: The Experience of Latin America and Israel and the Implications for Central and Eastern Europe", in: Reforming Central and Eastern European Economies, ed. by Corbo, V.; Coricelli, F.; Bossak, J. (Washington 1991).

Möller, H.: "Die westdeutsche Währungsreform von 1948", in Währung und Wirtschaft in Deutschland, ed. by Deutsche Bundesbank (Frankfurt 1976).

Möller, H.: Zur Vorgeschichte der Deutschen Mark (Tübingen 1961).

Montiel, P.: "Empirical Analysis of High-Inflation Episodes in Argentina, Brazil, and Israel", IMF Staff Papers, Vol. 36 (1989), pp. 527–549.

Österreichisches Institut für Wirtschaftsforschung: "Gedanken zur Neuordnung der österreichischen Währung", 1. Sonderheft (Wien 1945).

Österreichisches Institut für Wirtschaftsforschung: "Die wirtschaftliche Lage in Österreich", Monatsbericht 1946/1, (Wien 1946).

Pfleiderer, O.: "Two Types of Inflation, Two Types of Currency Reform: The German Currency Miracles of 1923 and 1948", Zeitschrift für die gesamte Staatswissenschaft, Vol. 135 (1979), pp. 352–364.

Pressburger, S.: Das österreichische Noteninstitut (Wien 1976).

Ritschl, A.: "Die Währungsreform von 1948 und der Wiederaufstieg der westdeutschen Industrie", Vierteljahreshefte für Zeitgeschichte, Vol. 33 (1985), pp. 136–165.

Rothschild, K.: Austria's Economic Development between the two wars (London 1947).

Sauermann, H.: "On the Economic and Financial Rehabilitation of Western Germany (1945–1949)", Zeitschrift für die gesamte Staatswissenschaft, Vol. 135 (1979), pp. 301–319.

Sauermann, H.: "Währungsreformen", HdSW Bd. 11, (Göttingen 1961).

Stiefel, D.: "Konjunkturelle Entwicklung und struktureller Wandel der österreichischen Wirtschaft in der Zwischenkriegszeit", IHS-Forschungsbericht Nr. 135 (Wien 1978).

Stolper, G.: Deutsch-Oesterreich als Sozial- und Wirtschaftsproblem (München 1921).

Stolper, W.; Roskamp, K.: "Planning a Free Economy: Germany 1945–1960", Zeitschrift für die gesamte Staatswissenschaft, Vol. 135 (1979), pp. 374–404.

Stucken, R.: Deutsche Geld- und Kreditpolitik 1914–1963 (Tübingen 1964).

Suppanz, C.: "Die österreichische Inflation 1918–1922", IHS-Forschungsbericht No. 111 (Wien 1976).

Theurl, T.: EINE gemeinsame Währung für Europa (Innsbruck 1992).

Theurl, T.: Die Entwicklung der monetären Theorie und ihr Einfluß auf die österreichische Währungspolitik der unmittelbaren Nachkriegszeit (Innsbruck 1987).

Wallich, H.; Wilson, J.: "Economic Orientations in Postwar Germany: Critical Choices on the Road toward Currency Convertibility", Zeitschrift für die gesamte Staatswissenschaft, Vol. 137 (1981), pp. 390–406.

van Walré de Bordes, J.: The Austrian Crown (London 1924).

Weisskopf, E.: Das schweizerische Münzwesen von seinen Anfängen bis zur Gegenwart (Bern 1948).

Wicker, E.: "Terminating Hyperinflation in the Dismembered Habsburg Monarchy", The American Economic Review, Vol. 76 (1986), pp. 350–364.

INSTITUTE FOR ADVANCED STUDIES
Department of Economics
Stumpergasse 56, A-1060 Vienna, Austria

Phone: (1) 59 991 – 149
Fax: (1) 59 991 – 163
e-mail: woergoet@ihssv.wsr.ac.at