Inflation in the Reconstruction of Poland 1918-1927

by Goetz Henning von Thadden

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Abstract

The thesis is concerned with the dynamics of inflation and their effect on production, using the example of the Polish reconstruction process after World War I. In 1918, Poland had to be re-established as a state after 123 years of foreign rule as well as reconstructed due to severe destruction experienced during the war. Nevertheless, the reconstruction process was extremely rapid, and the thesis argues that it was inflation which provided the means to build up the state. Inflation redistributed wealth within the society and imposed a high savings quota on the economy. The printing press inflation carried the economy through to hyperinflation. The positive effects of the process already explain in part why inflation could last so long and why the economy went all the way through to hyperinflation. The thesis then argues that stabilisation was a political problem and was only achieved once the inflationary process ceased to create winners and losers. The positive business climate began to deteriorate when traders no longer used past inflation as an indicator for price setting, but instead used changes in the exchange rate. However, inflation reappeared shortly after fiscal reform, due to the inevitable credit requirements of Polish industry. Inflation had eroded savings and distorted the economy: this was the major short-coming of this peculiar way of mobilising the country's resources. Consequently, a credit inflation emerged still in 1924 as industry tried to adjust to market requirements in the post-inflationary crisis. Stabilisation was only finally achieved when the economy moved out of recession in 1926. Lastly, the thesis sheds new light on the generalisation about the European inflationary experiences of the 1920s. It introduces a distinction between exogenously and endogenously imposed inflation, which suggests a more specific definition of the transition into hyperinflation as well as of the exact requirements for stabilisation. It also reduces these exceptional economic occurrences to reparations, on the one hand, and reconstruction, on the other.

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ABBREVIATIONS

AAN	Archivum Akt Nowych, Warszawa, Poland
LN	League of Nations Archive, Genève, Switzerland
MP	Mark Polski = Polish mark
PKKP	Polska Krajowa Kasa Pozyczkowa = Polish State Loan Bank
PRM	Protokoly pos. Rady Ministrów = Minutes of the meeting of the council of ministers
PRO	Public Record Office, Kew, UK
x. Sejm	*Short-hand Minutes of the x. Meeting of the Sejm*

I

INTRODUCTION

When the Polish Republic was founded in November 1918, Europe saw a country re-emerging that had disappeared from the map for 123 years. There had been several Polish attempts before to regain statehood, but none of them had been successful. It was only the changing political atmosphere at the beginning of the twentieth century that brought the Polish question back to the political agenda. During World War I, Germany and Austria created a Kingdom of Poland in 1916, when they needed Polish recruits, and, shortly afterwards, the Russian revolution addressed the Polish people in a reminder of self-determination. Yet only when, at the end of 1918, Germany and Austria lost the war and their monarchs abdicated, while, at the same time, Russia was paralysed by revolution, was the historical chance given that the Polish people could take their future into their own hands. The foundation of the Polish Republic was one of the consequences of the outcome of World War I. The peculiar way of the Polish foundation was due to the fact that the Poles made use of the temporary weaknesses of their partitioning powers to emancipate themselves, supported, of course, by the favourable attitude of the victorious powers. The other side of the medal was, however, that what they took over was barely more than bits and pieces of three different empires. What these parts had in common was the Polish language, a feeling of cultural unity and the tradition of the once Polish-Lithuanian Commonwealth. When the period of partition ended, there seemed, at first sight, to be more division or, at least, diversity than unity. Also, the worst was not yet over, but was only about to begin. The fighting on Polish soil continued when Poland got involved in a series of combats with all of its neighbours about the borders of the new state. This continuation of warfare caused further destruction and hardship while, at the same time, the economy was hampered by the situation of being an unstructured and misaligned new entity. C. Phillips, who was a member of an American Red Cross relief group, described the situation in the Warsaw of 1920 as:

> "Meat was a rarity; five ounces per week was the ration. Rabbit was the most common meat. The Pasteur Institute of Warsaw stated officially, that practically all the cats and dogs in Poland had disappeared! There was neither butter, sugar nor milk. The black bread we ate always reminded me of the endless breadlines we passed, day and night, wherever we went - breadlines in which people stood eight and ten hours, through rain and sleet and snow, whole nights at a time, waiting for their meagre family rations."[1]

[1] C. Phillips: The new Poland, London 1923, p. 123

Then, however, the wars came to an end at the beginning of 1921, reconstruction and the adjustment of the economy towards the new conditions made fast progress, and only three years after these depressing descriptions the city presented itself in an entirely new light. The London based *Times* wrote in an article in November 1923:

> "The streets of Warsaw present a better appearance than they did even six months ago. The shops are well stocked, the people are well dressed, the droschke-horses almost sleek, and there is an air of prosperity. No wonder that the Poles as a whole are not very easily disturbed about the state of their finances. One is apt to forget that general conditions have been growing gradually better and better for them since the Republic started, although the mark has been falling all the time."[2]

The two quotes already indicate that this was an amazing reconstruction process, particularly if one considers the size of the task. Yet, the Polish historiography still lacks a consistent explanation to the question about how Poland managed to build up a national economy out of the bits and pieces it inherited in such a short time. This thesis will look at the state finances or, to be precise, at the political economy of inflation to answer this question. At the time of Phillips' observations, one dollar would buy 35 Polish marks. When the article appeared in the *Times*, however, the price for the dollar had increased to 3,500,000 Polish marks, and an end to inflation was out of sight. Thus, it seems only consequent to ask about the relation of inflation and economic upswing. Was inflation the price for it or was it the means? Was its character true growth or rather a feast to celebrate independence? What would have been without inflation?

Poland had inherited inflation from the three partitioning powers which had made use of the printing press to finance their participation in World War I. Then, however, the young state further increased the money supply when it took over an empty treasury and had to pay for the wars about the borders and the establishment of state institutions. In consequence, prices rose and the exchange rate of the Polish mark depreciated. When peace was concluded in 1921 and the state machinery had begun to be working, a first stabilisation attempt was made under Finance Minister Michalski in the autumn of that year. Yet the reforms collapsed after only a short period of fiscal and monetary stability. The fate was the same for the second stabilisation attempt under Finance Minister Grabski in the spring of 1923. The treasury inflation was only brought to an end in the beginning of 1924 after the highest peak of inflation had exceeded 400 per cent per month and workers had demonstrated against the fall in their real wages causing blood-shed when the police interfered. It was only then that political consensus was reached about the need for reforms. Grabski was again commissioned to stabilise public finances. This time, he was successful and in April 1924, the inflationary Polish mark was replaced by the stable zloty[3]. Yet, only shortly afterwards prices started to grow again, in spite of an economic depression, and new budgets deficits emerged which were covered by the issue of coins

[2] "Conditions in Poland", in *The Times*, 24 November 1923

[3] Polish for *guilder*.

and small change. Although this new inflation was on a much smaller scale than the first one, the pressure on the zloty resulted in the collapse of the fixed exchange rate in the summer of 1925. The budget was only balanced in 1926, after a campaign of massive savings reduced state expenditure while an economic recovery increased revenues. An international stabilisation loan finally guaranteed stability in 1927, and the exchange rate of the zloty was fixed on a new level.

The Polish inflation of the interwar period coincided with the German, the Austrian, the Hungarian and the Russian inflationary experiences. They all showed similar economic patterns, and they all were examples for extreme monetary disorders that are generally referred to as hyperinflation. Hyperinflation is an economic phenomenon that has been widely discussed in the literature, and interest in it still has not ceased. Three different approaches towards it can be roughly distinguished: the historical, the economic and the political economy approach. This division might seem a bit arbitrary, but it is useful for the discussion of the historiography. First, one has to keep in mind that a hyperinflation is always a historical experience. It is an episode of economic disorder that ruins large parts of the society involved in it. The knowledge about the German hyperinflation of 1923, for example, helps to understand the German "paranoia" about monetary stability and the role of the Bundesbank. Yet, apart from the historical interest, such an experiences also seems to be a good "laboratory" for many questions dealing with monetary theory. Few opportunities arise in macroeconomics to conduct laboratory type experiments, except for recorded episodes of hyperinflation. They allow the testing of fundamental macroeconomic theories dealing with the coherence in the movements between money and prices, their causal relationship and the relation between monetary policy and output among other issues. Yet, the fact that they never result from a conscious decision, but apparently always stem from political failures, leads one to the last, the political economy approach. Episodes of hyperinflation are also laboratories in this respect since they exemplify some of the political restrictions on economic development and the interaction of politics and economics in general. This approach is particularly interesting in connection with stabilisation attempts. It is a striking feature of past examples of hyperinflation that all of them saw more than one fiscal and/or monetary reform. Yet, while these stabilisation attempts never seem to have constituted an economic problem since they all just involved the balancing of both the budget and the foreign payment obligations, the failure of early attempts apparently stemmed from political reasons.

The Polish case, however, has been almost neglected in the literature, although it provides one of the few classical examples of this phenomenon. The only monograph is E. Taylor's "Inflacja Polska" which was published as early as 1926 and which is definitely out of date.[4] Although Taylor observed very carefully and had some very interesting

[4] E. Taylor (1926): Inflacja polska, Poznan. - Taylor stemmed from British immigrants who had come to Poland as entrepreneurs in the early days of the industrial revolution. He himself was one of the most

ideas, he lacked the knowledge of macroeconomics that we have today. Thus, he was unable to explain the acceleration of the inflation rates as well as the inherent dynamics of the process. Consequently, he also misinterpreted some of the political interferences into the inflationary regime. Nevertheless, it is still an interesting book which is full of facts and which describes well the whole atmosphere of the time. Furthermore, his political economy approach is particularly useful as an introduction into the topic. Yet, the shortcomings of his book and the lack of other monographs on the topic make further research necessary. At last, the inflation was an integral part of a very interesting period in Polish history. It is probably fair to say that it was vital for the development of modern Poland. Its importance was shown again when a statue of W. Grabski, the father and executor of the successful stabilisation attempt of 1924, was uncovered by the current Polish president, L. Walesa, in Warsaw in 1994. It seems thus important to shed new light on the events of the early days of the Second Polish Republic. Yet, the Polish inflationary experiences provide also a good laboratory for some macroeconomic problems. In this thesis, the major point of gravity in this respect will be on the relation of monetary policy and output. How does inflation influence the savings rate within the state and what are the distributionary effects of the process?

The question about the relation of inflation and economic reconstruction has not been made a central thesis in any of the major monographs about the simultaneous inflationary experiences in Poland's neighbouring countries. In the German and, likewise, in the Austrian case, the discussion normally focused on the reparation issue, a problem which Poland did not have. In Poland, on the other hand, reconstruction seems the obvious starting point for an analyses of the inflationary experience. This in itself already appears to be an interesting observation since it is a first hint at the thesis that the interwar inflations were not alike. Their underlying causes have been an often discussed problem in the literature.[5] The different interpretations range from bad war finances, over the negative balance of payments and mistakes in the monetary politics to the deliberate decision to finance the reconstruction with the means of the inflation tax. The Polish example seems best suited to show that at least the Polish government used inflation according to the last interpretation, namely deliberately to build up their country. One has to add, however, that they evidently did not understand the whole mechanism. They saw no alternative sources of revenue that would have allowed a similar reconstruction process. Polish politicians seemed helpless with a whole bunch of tasks in front of them, but with no revenues to meet them. In this situation, inflation appeared to them a given necessity.

A major difference with the German example was that Poland attracted much less foreign

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prominent economists in Poland in the 1920s.

[5] See, for example, League of Nations (1946): The Course and Control of Inflation, Genève; C. Bresciani-Turroni (1937): The Economics of Inflation. A Study of Currency Depreciation in Post-War Germany, London; C.-L. Holtfrerich (1980): Die deutsche Inflation 1914-1923. Ursachen und Folgen in internationaler Perspektive, Berlin; S. Webb (1989): Hyperinflation and Stabilization, New York

capital after the war. In consequence, reconstruction had to be achieved by mobilising the country's own means. It is important to point at this difference since there seems to be consensus now that hyperinflation broke out in Germany when foreigners suddenly withdrew their credits and returned the German marks they had previously held after the murder of Rathenau in the summer or 1922. If foreign investments in Poland took place on a much smaller scale, this leads one to conclude that the outbreak of hyperinflation in Poland must have been due to other reasons. In this context, it is interesting to ask why hyperinflation broke out in the first place and in how far the two examples are similar. Furthermore, the Polish example also allows us to question the shock that Sargent emphasised as being a necessary precondition for the outbreak of hyperinflation. He argued that only sudden changes in inflationary expectations can bring about the qualitative change that distinguishes inflation from hyperinflation. Roughly speaking, his thesis implies that inflation can only continue as long as there is hope that the economic situation will eventually improve. In the event of an exogenous shock that shatters this hope, the inflationary regime collapses and hyperinflation breaks out.[6] Poland, however, saw one political event that should have triggered hyperinflation according to Sargent's hypothesis, namely the murder of the first freely elected president shortly after his oath on the constitution which coincided with an economically extremely instable phase. The data, however, do not seem to support any changes in the monetary development after this political shock. The currency and the share index depreciated for one day only. Consequently, one can ask how important inflationary expectations are for the course of the inflation.

Also unlike the German example, the final stabilisation in Poland was achieved without foreign aid. Poland did not get foreign stabilisation credits, but introduced an extraordinary capital levy to finance the government's financial needs. This was certainly the more difficult way. Yet, it can be doubted if it would have been at all possible in Germany, given the fact that there, it was not only necessary to balance the budget, but also to mobilise foreign exchange to pay for reparations. This fact marks another important difference between the two examples. On the other hand, it also seems to support the view that Poland was successful in building up the country using extraordinary means since it got from chaos to a proper working state by using only the country's own resources. The problem of stabilisation was, however, also interesting for another reason. The Polish inflationary process saw the continued debate of two different schools of stabilisation that both got their try in economic practice. The different stabilisation attempts, their respective failure and, likewise, the one successful stabilisation, might answer some questions about the phenomenon of hyperinflation and the protracted dynamics in general. One stabilisation attempt seems to be of particular interest since it was all but orthodox. Like Russia, Poland tried, at one stage, to introduce a stable sec-

[6] T.J. Sargent (1986): Rational Expectations and Inflation, New York; see also chapter II.

ondary currency in order to "smoothen" the process of stabilisation and counteract the process of dollarisation, i.e. the flight from the Polish mark. The government thus attempted to follow the example of dollarisation and issue a new and stable local currency that could "drive out the bad money". Simultaneously, the Treasury would use the meantime to improve its budgetary situation since the seigniorage would cease to play any role at the end of the process. Unfortunately, the government did not get sufficient time to follow this path for a sufficiently long period. Yet, on the other hand, Poland did not experience similarly high inflation rates at the end of the inflation as Germany, although its rates had started much higher. The Polish inflationary process seemed much more homogeneous than the German one which is another phenomenon worth discussing. Why did the dynamics of inflation differ in Germany and in Poland? Are the reasons to be found in the political interference into the process or rather in the underlying causes of the individual inflationary example?

Finally, A. Rosenberg wrote in 1946: "At the present time the inflationary forces are gathering strength in many countries in the aftermath of World War II, it seems appropriate to publish a study which will refresh the reader's memory of the monetary disorders that swept over Europe after World War I. Even though conditions today are not the same, there are lessons to be learnt from the earlier experience."[7] Now, in the 1990s, in the aftermath of the Cold War, extreme inflations appear once more in Eastern Europe. Poland and the lands of the former Soviet Union are again affected. Studying the case of the Polish Inflation of the 1920s could help to understand some of the features of this phenomenon. Some questions could be related directly to the situation today, like what were the benefits and what the misfortunes of inflation? Is inflation *per se* negative? What are the politics involved? Why did inflation turn into hyperinflation? Was this turn inevitable? Why did not the orthodox stabilisation of 1924 ultimately succeed? Would the same stabilisation plan have been possible at an earlier stage, or was the Argentinean Finance Minister right when he argued in 1985: "Let the country fall into hyperinflation first."?

Apart from the general questions that are related to the relation of inflation and reconstruction, the thesis will also attempt to fill some gaps in the Polish historiography. Unfortunately, the economic history of this period is not covered very well in the literature. Many questions remain unanswered. Research is still needed for most branches of industry, the development of institutions as well as the process of cartelisation. Full of facts about the period under discussion are the works of Landau and Tomaszewski, but they are rather narratives providing only little analysis.[8] The same is true for the currently best book on the Polish reconstruction process, "The Reconstruction of Poland, 1914-23"

[7] A. Rosenberg, in League of Nations (1946), op. cit., p. 1
[8] Z. Landau, J. Tomaszewski (1985): The Polish Economy in the Twentieth Century, London, and (1967-75): Historia gospodarki Polski miedzywojennej 1918-1939, 4 vols, Warszawa

edited by Latawski. Since it is a collection of articles on different aspects of reconstruction, there is no linking structure that would bring it all into one line. It rather tells how the new Poland was built up than explain why it was this way and no other.[9] The Polish inflation as such, on the other hand, has been almost neglected in the literature. As has been mentioned before, the only monograph is E. Taylor's "Inflacja Polska" which was published in 1926 and which needs a serious revision.[10] The inflation is, of course, touched upon in all works that deal with Interwar-Poland. Yet, there are significant differences in all of them, different interpretations which, so far, no one has tried to quantify. There only seems to be consensus about the outbreak of inflation: The increase of the money supply that was in large measure due to expenditure on railways and the army, and the necessity to create the Polish state apparatus anew, led to a depreciation of the currency. At the same time, the negative balance of trade caused a steady devaluation of the mark which complemented the first trend in the inflationary spiral. Credits given to private investors as acknowledged subsidies further increased the depreciation of the currency.[11]

Controversies arise over the failure of the first stabilisation attempt of Finance Minister Michalski in the autumn of 1921. Landau and Tomaszewski argued that Michalski failed because he did not valorise taxes and tariffs. When inflation re-appeared due to credits given to industry, the government's revenues were also inflated, and the budget deficit increased. New money had to be printed to cover it, and the stabilisation collapsed.[12] This answer fell actually short of the one given by E. Taylor in 1926 who went one step further and asked why new credits were given to industry, why taxes were not valorised and, above all, why they were not increased. His argument was political in that the ruling camp was not interested in a successful stabilisation since the people who actually profited from the inflation, i.e. industrialists and entrepreneurs, constituted a majority in the government. Yet, also this explanation might not give the full picture. After all, the first steps of the stabilisation programme were followed by a phase of industrial depression. It might be one argument to say that the lobbyists of industry rather preferred inflation to depression, but, on the other hand, given the general state of the Polish economy in 1921, most other politicians might have chosen this option as well. The minutes of the parliamentary sessions of both chambers suggest that the positive impact of inflation on industrial growth and the rate of reconstruction was a general *credo*. Given the fact that the public explained monetary disturbances with the general disorder in the country, the reactions towards the first signs of depression would be an obvious factor to look at. It needs to be explained what were the political obstacles to stabilisation. The existing liter-

[9] P. Latawski (1992): The Reconstruction of Poland, 1914-23, London
[10] E. Taylor (1926), op. cit.
[11] This was best described by R. Nurkse, in League of Nations (1946), op. cit., pp. 4-17 passim
[12] Z. Landau, J. Tomaszewski (1967): W dobie inflacji (=Historia gospodarki Polski miedzywojennej 1918-1939, vol. 1), Warszawa, p. 269

ature does not analyse later stabilisation, probably because none of them was successful. Yet, their failure might provide an explanation why Finance Minister Grabski finally succeeded in reforming the economy in 1924. Politics might be one explanation to the question why one stabilisation was successful while the others were not.

Why inflation turned into hyperinflation was explained by Polonsky, a political historian, as the consequence of the loss of confidence in Polish politics by the general public which followed the fall of the Sikorski government and which was paralleled by the peak of the German hyperinflation.[13] Studnicki, a theoretical economist, on the other hand, argued that hyperinflation was altogether imported from Germany through sudden changes in the real exchange rate.[14] Germany was Poland's main trading partner, and thus the Polish inflation could well have been initiated by the neighbouring country. The British economics attaché mentioned explicitly in a report in spring 1923 that in April, for the first time, the Polish mark "showed signs of practical emancipation from the German exchange."[15] This implied that Poland had followed the German pattern in a disturbingly close relation until that date. Yet, the Polish government never denied that it was responsible for the inflationary process. Its argument was that the Polish administration with its inexperienced civil servants was not yet prepared to collect a sufficient amount of revenues. Since an effective tax system was not to be established over night, the government had recourse to the printing press in the mean time.[16] Yet, also the argument that the German example caused a loss of confidence in the Polish currency and thus triggered hyperinflation is not satisfactory. Is hyperinflation really a political phenomenon as this explanation seems to suggest or would it not be more sensible to look at the monetary dynamics of inflation for an answer to this question? An apparently more interesting interpretation was given by E. Taylor in another economic argument who explained that during the inflationary process the local currency lost all its functions. When the Polish mark was only used as a means of payment, and this only for petty trade, the velocity of transactions increased to an ever accelerating speed. Prices and exchange rates exploded.[17] Dornbusch, Sturzenegger and Wolf arrived at similar conclusions 65 years later.[18] However, both papers failed to explain at what point the process was completed. Was the transition sudden or was it a gradual development? Can the outbreak of hyperinflation be dated?

There are also disagreements about the interpretation of Grabski's stabilisation of 1924.

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[13] A. Polonsky, in R. Leslie (1980): The History of Poland since 1863, Cambridge, pp. 148-149

[14] W. Studnicki (1935): Die wirtschaftliche und kulturelle Entwicklung des wiederauferstandenen Polens, Berlin, p. 120

[15] "Economic situation in March/April 1923", 5 June 1923, in Public Record Office, Kew, England (from now on: PRO), FO 371, N5087/164/55

[16] "Economic policy of Polish Government", 25 November 1920, in PRO, FO 371, N3382/236/55

[17] E. Taylor (1926), op. cit., pp. 183-184

[18] R. Dornbusch, F. Sturzenegger, H. Wolf (1990): "Extreme Inflation: Dynamics and Stabilization", in *Brookings Papers on Economic Activity* 2, pp. 1-84

While Sargent argued that stability was achieved by balancing the budget and the introduction of an independent central bank[19], Landau and Tomaszewski emphasised the establishment of confidence that followed the balancing of the budget.[20] Nurkse, too, focused on credibility as a vital precondition for reforms, but he emphasised the stabilisation of the exchange rate as the main stabilising factor.[21] However, none of them tried to analyse the different parts of the programme step by step. They all concentrated on single measures not giving credit to the others. Thus, the four pillars of the stabilisation programme, namely the valorisation of taxes, tariffs and loans, the stabilisation of the exchange rate, the establishment of confidence and the collection of the capital levy will have to be examined in greater length later in this thesis and weighed against each other.

The first inflation had hardly finished when a second one set in, the explanation of which also remains controversial. At the time, leading economists explained this new system of increases in the money supply and rising prices with the balance of payments theory. Mlynarski, for example, by then vice-director of the Bank Polski, elucidated that Poland had a negative balance of payments after the stabilisation of 1924. Consequently, the demand for foreign currencies was larger than the one for Polish zlotys. Thus, foreign goods became cheaper while Polish goods became more expensive. This, in turn, influenced the budget because the state now had to pay higher wages and salaries. A budget deficit occurred which the Treasury was only able to cover by the use of the printing press. Inflation was thus the last link in a chain that started with the passive balance of payments.[22] There is certainly some truth in this picture as the sixth chapter will show. However, the theory does not offer a consistent explanation as to why the balance of payments turned negative. After stabilisation, Polish prices were higher than international prices. Consequently, the Poles increased the number of foreign goods they bought and the balance of payments turned negative. Yet, with an outflow of foreign currencies the state bank had the obligation to reduce the money supply. Consequently, Polish prices should have come down again followed by the balance of the system. Only if the bank monetised the demand for foreign goods, this could have triggered more price rises and the ultimate collapse of the exchange rate. The monetisation could have taken different forms, namely credits to the government, to business or to individuals. They would have always translated into price rises if they were used for consumption and not for investment, i.e. if they did not contribute to economic growth. Thus, we still lack a consistent political argument.

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19 T.J. Sargent (1984), op. cit., p. 105

20 Z. Landau, J. Tomaszewski (1984a): "Poland between Inflation and Stabilization 1914-1927", in G.D. Feldmann, C.-L. Holtfrerich, G.A. Ritter, P.C. Witt (eds): Die Erfahrung der Inflation im internationalen Zusammenhang und Vergleich, Berlin, p. 276

21 R. Nurkse, in League of Nations (1946), op. cit., p. 26

22 See F. Mlynarski (1926): The International Significance of the Depreciation of the Zloty in 1925, Warszawa, p. 55

Last the question of the overall evaluation of the inflation which is the central issue in this thesis. How did inflation influence the industrial development and the reconstruction of Poland? But also, who paid for it? Landau and Tomaszewski concluded from their historical observations that "inflation, before it reached hyperinflation, had a generally positive impact on the rate of reconstruction and beginning domestic industry."[23] They argued that, under the given circumstances, inflation was probably the best that could have happened to the country. This contradicted Nurkse who agreed that inflation was successful in forcing the society to save, but in the long-run the process directed some of the money into the wrong channels. He argued that this way of funding the reconstruction programme was entirely unbalanced because it did not prevent the entrepreneurs from consuming instead of investing. Both arguments seem to contain a part of the overall truth, but more research is needed in order to actually evaluate the inflation, i.e. to weigh merits and disadvantages. In this context, it would be important to ask if, given inflation was an ultimate necessity, did the government "manage" it the best possible way? The question about who paid for the inflation, is difficult to answer because of a lack of data. So far as this question has been dealt with in the literature, it has been argued that above all rentiers and, to a lesser extent, the public service and wage earners had to bear the main burden. Since Poland was a mainly agrarian country, however, it would be interesting to look at the situation of the agrarian population. Taylor documents the finding that the index of agrarian prices was always below that of industrial prices.[24] There are many more questions that could, and probably should, be asked about the Polish inflation and the reconstruction process, but this would exceed the limitations of this thesis.

This thesis is divided into five chapters in addition to the introduction and the conclusions. Following the introduction, the second chapter attempts to show the overall context of the interwar inflations and provides a critical survey of the current literature on the phenomenon of inflation. It is based on the observations of a historian who tries to abstract from the interwar experience and give a coherent picture of the dynamics of an inflation. It also serves as an introduction to the non-specialist and sets out the theoretical framework of the reconstruction process.[25] The third chapter then explains the historical background of Polish reconstruction and describes the economic development of the Polish Republic between 1918 and 1927. It provides a macroeconomic view with the major emphasis on institutions and does therefore not attempt to explain the dynamics in individual branches of the economy. The fourth chapter tries to explain the fast reconstruction process set out in the previous part by looking at the dynamics of inflation

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[23] Z. Landau, J. Tomaszewski (1985), op. cit., p. 36

[24] E. Taylor (1926), op. cit., pp. 72, 274

[25] It is a similar attempt as the one by Nurkse who gave such an excellent account of the different inflationary experiences of the interwar period in his classical study on "the course and control of inflation" working out the common features of the different interwar inflations and trying to understand them in their historical context; see League of Nations (1946), op. cit., pp. 2-84.

and its interference with production. Since the thesis focuses on the economic development of the Polish post-war years, the dynamics of inflation are observed, but no attempt is made to model them. The fifth chapter then looks at the problem of stabilisation. The main emphasis lies here on the political aspects of the inflationary regime. The main question is why inflation could last so long and why Poland went all the way through to hyperinflation. Yet, stability in Poland was short-lived and that is why the sixth chapter tries to explain the reoccurrence of inflation and the link between the first and the second inflationary experience. It also addresses the question where this later phase is to be placed in the reconstruction process. Last, the conclusions will answer the overall question about the relation between inflation and reconstruction in Interwar-Poland and show the short-comings of this peculiar war of mobilising the country's resources.

The basic data could not be much worse for a thesis in modern economic history. The period under discussion offers a whole variety of different sources, but, unfortunately, most of them are of little use to allow quantitative results. The statistics are extremely poor. Basically, there are no exact statistics for the level of industrial development. Monthly returns of industrial production were only introduced in 1927, i.e. after the period under discussion in this thesis, and that is why one has to rely on estimates for some industries and on statistics for working-hours per capita in those cases were exact output figures are not available. There are also no exact data for employment, for wages and for general income, although it is possible to find some good estimates made by the Main Statistical Office. Financial statistics are rare in general and the few available do not seem very trustworthy. We know little to nothing about petty trade and cottage industry and also about the practice of trade restrictions during the two wars. The reasons for this unfavourable situation must be sought in the fact that the Polish Republic only came into being in November 1918. It was a construct of different parts of the Austro-Hungarian, the German and the Russian Empires. The full unification of the country was not even finished before the end of that republic in 1939. The prevailing chaos was naturally mirrored in the statistics. Furthermore, the base as well as the reference year for most statistics should be the year 1913, i.e. the last year of peace before the outbreak of World War I. Yet, Poland did not have a unified money supply in 1913, not even one currency or one monetary policy. Even after the war, monetary union was only accomplished in the spring of 1920. To make things worse, Poland was involved in further wars which lasted until the end of 1920. And the final definition of the borders was only accepted in 1923. A Polish statistical office was only founded in 1921, and the staff was limited by both insufficient experience and the overall difficulties with collecting data in the above described environment. World War II, however, did not influence the data situation significantly. No bombs hit the archives. We have thus at our disposal the minutes of the cabinet meetings, the minutes of both chambers of the parliament, memoirs of most finance ministers, the acts of the finance ministry after 1926, the ministry of industry and trade, the successive Polish central banks, the Polish Central Statistical Office as well as foreign archives.

The Polish problems, namely destruction, distortion and inflation, began before the re-emergence of the Polish state. Thus, in order to look for the beginnings one would have to study the German, Austrian and Russian war finances, their economic performances, regional distributions, etc. This cannot be the task of this thesis. It concentrates, therefore, on the period between November 1918 and the autumn of 1927. Most tables for the inflation will give 1913 as their reference year. Hereby, a certain inaccuracy has to be accepted since until 1920 different currencies with different purchasing power parities circulated in Poland, and the exchange rates lacked a solid basis.

Further problems in evaluating the extent of the inflation are caused by price controls. The government insisted on certain prices and quantities until 1921 when a free market was introduced for most of the goods. In the course of the inflation the increase of prices differed from good to good. Thus rents were fairly stable throughout the period while the prices of textiles increased fastest of all. In order to quantify the process, one has to be careful in choosing the right measure for it, i.e. the best possible index series. The cost of living index is one possible indicator for the extent of inflation, but the statistics of the young Polish state had not yet come to the perfection of some of the western countries. Their data base was very small, and retail price figures were difficult to collect. Even though, cost of living figures were given for some Polish cities after 1921, exact results cannot be expected from them. Furthermore, the cost of living index, even if it had been more filed, would have included price-controlled goods and services, like rents, as well as products that lost their importance for the customers during the inflationary process. Thus it would be distorted. The cost of living index would not immediately reflect the consequences of an increased money supply. Thus, the wholesale price index seems to be better suited because it includes the whole variety of goods and should therefore constitute a middle position within the changing indices. On the one hand, it reflects the change of the exchange rates, because it includes imported goods while, on the other hand, it contains all goods that are also represented in the cost of living index, though in different proportions. Consequently, changes in the inflation rate should be directly reflected. However, the problem of the Polish case is again the reliability of the data. The Main Statistical Office published the first index numbers for wholesale prices in September 1921 based on 24 goods of different categories. Prior to that, the best possible estimates seem to be the ones by E. Taylor which go back to February 1920 and fit the trend of the later figures.[26] Both index series cannot be regarded as historically very accurate due to the earlier described problems of collecting data, but they are the best figures that are available. There are no reliable earlier data for wholesale prices than February 1920.

[26] E. Taylor (1926), op. cit., pp. 15-16

The exchange rate fluctuations are an important indicator for economic changes since they are the fastest and most sensitive reflectors of economic and political trends. In the 1920s, the dollar offered the best measurement for the exchange rates since the United States of America constituted an anchor of stability. They had become the most important economic factor in international trade, and they were the only country that had remained on the gold standard. Furthermore, the dollar had replaced the pound as the most important currency. All values will be given in current dollars. Alternatively, the equivalent zloty value will also be noted since this was the usual index in Poland. Please note that the exchange rate of the zloty prior to 1924, i.e. its introduction as a means of payments, will be 5.1826 to the dollar.

Last, the money supply will be defined according to the definition of the Polish State Loan Bank as all bank notes and coins in circulation, i.e. M0. This definition is used for reasons of convenience since this is the figure reported in Polish statistics. However, given that the Polish inflation was about printing bank notes to pay for the government's bills, this indicator actually seems quite sensible in this environment.

In conclusion, the historical accuracy of most statistics used in this thesis is not guaranteed, i.e. they cannot be trusted as reliable in terms of their nominal value. However, if they are wrong, they are so consistently and thus show the right trends. At least, there seems to be no bias in them towards one or the other side. Since most Poles regarded the monetary disturbances as part of the difficulty of reconstructing the country after the wars and setting up the new state, and also because governments changed so frequently, there is no reason to believe that anybody tried to make Poland look better in its statistics than in real life. Furthermore, since nobody abroad was prepared to help Poland with its problems, there was also no need to paint a gloomy picture in the attempt to get more aid. Consequently, if not the data, at least the trends indicated by them can be relied upon and will be so in this thesis.

II

INFLATION AND STABILISATION AFTER WORLD WAR I

"A major shock to the budget, the terms of trade, or the exchange rate is an essential ingredient for high inflation. An event such as a political disturbance or an abrupt international credit rationing may trigger the inflation. Countries that do not experience such a shock are unlikely candidates for an extreme inflation."[1]

Many of the European countries after World War I were, according to Dornbusch's definition, very likely candidates for extreme inflation, and, indeed, some of them suffered from it to a previously unknown extent. The war had shattered Europe in its foundations, and it had brought in its train various forms of severe fiscal drain and instability. Apart from the United States, all belligerent countries shared the experience of "the monetary disorders that swept over Europe after the war".[2] However, some coped with it, while Austria, Germany, Hungary, Poland and Russia went all the way through to hyperinflation. In order to understand the European context of the inflationary problem, it must be established what these countries had in common. What were the streams that fed the inflation? And then, once inflation was on its way, what were the dynamics of the process. These questions are of vital importance if one attempts to establish the relation between inflation and reconstruction since the inherent dynamics of the first would restrict the extent of the latter. If inflation was used to finance reconstruction, it is important to analyse how far this means could be stretched. The general historian who is not familiar with the economic side of the problem might find this a useful introduction into this complex topic. The economist, on the other hand, will be informed about more examples of extreme inflation, a consistent explanation of which we still lack.

THE FINANCIAL IMPACT OF WORLD WAR I

The first question that needs to be answered in this context is about the beginnings of inflation. One element of the discussion about inflation is related to war finances. In order

[1] R. Dornbusch, F. Sturzenegger, H. Wolf (1990): "Extreme Inflation: Dynamics and Stabilisation", in *Brookings Papers on Economic Activity 2*, pp. 2-3
[2] A. Rosenberg, in League of Nations (1946): The Course and Control of Inflation. A Review of monetary Experience in Europe after World War I, Genève, p. 1

to understand the consequences of the different kinds of war finances one has to examine their impact on the monetary system. What does it mean for a country to fight a war? The important point is that in every armed conflict, government expenditure increases because an army has to be equipped, nourished, paid, etc. Thus the state sector increases its share of GNP. In turn, state revenues have to be increased to the same degree. World War I demanded economic resources from the belligerent countries to an extent previously unknown in modern times. Haller estimated that the main participating countries used about 50 per cent or more of the production potential for military purposes.[3] In order to make such an extreme and extraordinary change possible, the countries had to either increase their production significantly and, thereby, exploit the factors of work and capital more intensively, or live on their savings, i.e. their substance; they could also limit private consumption, or increase net imports from abroad. The finances that were needed for this purpose could be gained by either using the savings of the treasury, increasing taxes, issuing bonds, or making debts at the central bank or the private banking system.

The most straight forward ways of financing a war are through tax increases or different forms of extraordinary levies. They enforce compulsory saving on the society and allow for a shift from private consumption to state consumption (and a war has all features of state consumption). The state's increased expenditure can thus be met by increased revenues. The disadvantage is, however, that this form of raising funds requires a tax system, which is capable of introducing and collecting the required sum of tax money. It has been argued for the German case, for instance, that tax increases would have hardly been feasible under the prevailing conditions.[4] In that respect, the organisation of issuing bonds is much easier. In times of war, it seems easy to sell them because of prevailing strong patriotic feelings within the society, and also because of hopes for a victory that would pay a high dividend. At the same time, bonds retain the liquidity of the private economy. Thus, economic activity is not hampered by strong tax restrictions. On the other hand, however, the main disadvantage of bonds is the delaying of the war finances until after the war. A government that relies on the issue of bonds must hope for a victory and the payment of compensations by the enemy, because, otherwise, it would be left after the war with the double burden of both war destruction and delayed war finances. The arguments for the reliance on the printing press, i.e. debts at the state bank, run on a similar line. They are even easier to organise, because the government just prints the additional money it needs. The liquidity of the private economy remains or is even encouraged, since everyone who holds goods retains a stable value, while only money holders lose. The major disadvantage is that this form of raising revenues leads to a rise in the general price level and is socially unjust since it penalises the money holders, i.e. salary earners and rentiers. For the belligerent countries in World War I, however, this was a more theo-

[3] H. Haller (1976): "Rolle der Staatsfinanzen", in Deutsche Bundesbank (ed.): Währung und Wirtschaft, Frankfurt, p. 152
[4] S.B. Webb (1989): Hyperinflation and Stabilization, New York, p. 30

retical discussion. None of the countries that participated in it had enough savings to cover its expenses. Thus, they all opted for a combination of tax increases, bonds and debts. Yet, while England financed 20 to 30 per cent of their military expenses out of taxes, it was only 0 to 6 per cent in Germany. Germany, Austria-Hungary and Russia favoured bonds and debts at their respective state banks (as did Poland which was divided among the three empires).[5]

The war also brought about other costs apart from that of army equipment and of soldiers. The outbreak of the war had a negative impact on general economics due to the need to restructure the economy. Export and consumption industries went into depression, while machine and steel industries boomed. This meant that workers had to be transferred from one branch to the other. After the war, the same process of re-organisation had then to be repeated involving a huge process of transition. Also, industrial production decreased during the war due to the difficulties concerning raw materials, the decrease of the work force of which a large fraction had been sent to the front and the over-usage of machinery.[6] Yet, while production decreased and goods were destroyed, the monetary authorities did not reduce the quantity of money to a similar extent. Inflation was therefore caused by more money competing for fewer goods.

The second argument concerning these inflationary episodes relates to reparations. The peace conference of Versailles had named Austria, Germany and Hungary the aggressors in this war and compelled them to make significant contributions towards repairing the destruction of their adversaries. They had to bear reparation payments in addition to their own war expenses. Furthermore, they had to pay them in indexed money, i.e. the amount due did not inflate, but it maintained its real value. The treasuries of the three countries thus faced significant monetary claims which were as pressing as the previous requirement for war finances had been. Under the new conditions, bonds seemed much more difficult to sell, taxes very difficult to raise, and only the printing press seemed to offer an easy solution. At the same time, although Russia and Poland did not pay reparations, it can be argued that their burden was comparable since they had to pay for yet another war, and also because their destruction was so substantial without being awarded any compensation.

A third argument concerns the political and economic consequences of the war. The war shattered the politics and economics of the whole continent; it destroyed buildings, factories, communications, fields, etc.; and it drew new borders onto the map of Europe. Old states and empires collapsed; monarchs abdicated to make room for new political systems; and new states emerged. The international balance of power shifted. The European

[5] C.-L. Holtfrerich (1980): Die deutsche Inflation 1914-1923. Ursachen und Folgen in internationaler Perspektive, Berlin, p. 152
[6] C.-L. Holtfrerich (1980), op. cit., p. 179

economies had to adjust to the new situation. Countries had to be built up again. New entities and new currencies had to find their place in a changing world economy. Infrastructures had to be fitted into the new borders. Markets had to be oriented towards the new international environment. Changes in the world market, like the sudden boom of raw materials, had to be taken into account. Thus, the reconstruction of Europe caused an immense drain on public finances. Furthermore, the outcome of the war caused strong social pressure. It had a liberalising effect on the respective societies. Most of the new governments had come into their new positions following a revolution. Now workers threatened to take even more radical measures, if their claims for higher wages and more democracy were not fulfilled. Thus, the costs of social improvements had to be added to those of reconstruction.

The fourth argument also relates to political consequences of the war. New political systems were established, and new social groups that were entirely inexperienced came to power. Changes in public administrations on all levels and weak governments coincided with extreme challenges for all politicians. Times were particularly difficult. In this situation, and without sensible planning, some governments tried to reconstruct whole countries overnight, and, as E.H. Young put it, they "sought to travel too fast along the road of social reconstruction and reform. In a word, they sought to run before they walked."[7] Since fiscal chaos broke out only in those countries that had experienced a revolution, it can be argued that this was due to miscalculations and severe mistakes in fiscal and monetary policies. According to this argument, inflation was caused by the inability of governments and administrations to cope with the aftermath of World War I.

In conclusion, there was a very strong demand for money by all of the inflationary governments. The first hurdle these governments had to take was that of war finances, and there seems to be proof that they decided to travel an inflationary path, i.e. paying for their expenses by means of the printing press. The second hurdle was that of reparations, and here they decided to print money, but also depreciate their currencies in order to attract foreign capital. The third hurdle was that of reconstruction, and again the means were printing money and depreciation of the currency. All three hurdles can thus be interpreted as having been taken deliberately by using inflation as a form of forced saving. This means that the respective governments esteemed inflation higher than alternatives, i.e. no war, foreign rule, revolution, slower reconstruction, etc. This trend may have been complemented by instability and severe mistakes in monetary and fiscal policies that helped the inflationary systems to continue. However, the question remains, why the initial different examples of inflation did not stop at one stage, but accelerated and led to monetary catastrophe.

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[7] E.H. Young (1924): Report on Financial Conditions in Poland, London, p. 6

INFLATION AND PRICES

The word inflation in the 1920's referred more to the increase of paper money than the increase of prices. Cagan used official currency denominated in paper marks as his measure of money, and it will serve as our benchmark.[8] An increase of the general price level is usually caused by a difference between supply and demand at current prices on the goods markets. Prices rise, if the aggregated money supply exceeds the aggregated goods supply. Thus, if a currency is inflated, i.e. the money stock is enlarged, while all other factors remain stable, the general price level rises. Now more money competes for the goods which are available on the market and, thus, traders set their prices higher. From this technical point of view Friedman is right in arguing that "inflation is always and everywhere a monetary phenomenon."[9] However, not all examples of inflation show this mechanism. Two kinds of inflation can be distinguished: namely open inflation and disguised inflation. The first can normally occur in a free economy. It follows the pattern above described, hence price rises correspond to the expansion of the money stock. A disguised inflation, on the other hand, only occurs when markets are strictly restricted, i.e. price controls, that prevent a price rise when additional money is issued. In consequence, the difference between demand and supply remains causing a monetary overhang. This, in turn, leads to full employment, since there is enough money to buy all goods that are offered, but also to empty shelves, queues in front of the shops and a reduced velocity of money circulation, since the assumption was that inflation exceeded productivity rates. Given the situation of a disguised inflation, the liberalisation of the economy would ultimately change the quality of the inflation and allow prices to shoot up until they find their relative position. This process would also involve adjustment costs due to the lack of experiences with price setting. During the First World War, most belligerent countries introduced price controls and rationing. As a result, three different markets with three different prices developed, namely the market of rationed goods, with controlled prices set by the government; the market of free goods, with free prices; and, last, the black market for rationed goods, with free, but exceptionally high prices due to over-demand. When, after the war, the price and quantity restrictions were abolished, these three different markets and prices had to readjust. The overall price level jumped up and open inflation broke out.

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[8] P. Cagan (1956): "The Monetary Dynamics of Hyperinflation", in M. Friedman (ed.): Studies in the Quantity Theory of Money, Chicago, p. 27. - For a general introduction into the theory of inflation see B.M. Friedman, F.H. Hahn (1990): Handbook of Monetary Economics, Amsterdam, chapter 18, and O. Issing (1991): Einführung in die Geldtheorie, 8th ed., München, chapter 7

[9] M. Friedman (1956): "The Quantity Theory of Money - A Restatement", in M. Friedman (ed.): Studies in the Quantity Theory of Money, Chicago, p. 2

The mechanism of inflation has been explained as the rise in the money supply leading to a rise in prices. Yet, this does not yet explain why the money stock is enlarged. Three different causes for the various examples of inflation in the interwar period can be identified:

I. Demand-pull inflation: The most obvious cause for inflation is described as above. When the demand for goods exceeds the supply beyond the point to which the national product cannot be raised without changing the modes of production, traders raise their prices. Yet over time, an increase in demand can only continue, if it coincides with an increase in the money supply that "finances" it. Thus, if price rises are caused by changes in the demand for goods, a corresponding change in the money supply has to occur. If the money supply were stable, additional demand could not be paid for. In other words, you need to have money in order to shop. During the interwar period, it was the governments of most European countries that increased their demand for goods. Government expenditure increased, and since there was no corresponding voluntary reduction of private consumption, these governments lacked the means for the additional demand for goods. They would not have been able to realise their plans, if the respective central bank had not increased the money stock and "lent" this money to its governments, therewith meeting the demand for additional funds and financing the required goods. In other words, these governments produced budget deficits that were paid for by printing the money for the bills. The decisive question in this context is why the central banks decided to follow this path. It is the question about the elasticity of certain goods and services in the aftermath of World War I. The consequence of such a policy is easy to explain. The creation of additional money for the purpose of financing a budget deficit is usually referred to as inflation tax or, as Cagan put it, "issuing money was a method of raising revenue by a special kind of tax - a tax on cash balances. This tax is often appealing because it does not require detailed legislation and can be administered very simply. The resulting inflation automatically imposes a tax on cash balances by depreciating the value of money."[10] Every holder of the inflating currency has to "pay" it. The difference between the value of money when someone receives it and its value when it is spent, is the revenue the government gains from this "tax". It is paid according to the amount of money held by the individual. Thus, every holder of money is "taxed" according to his or her cash balances. The government "collects" the inflation tax by printing its "revenue". More technically speaking, an endogenous money supply is used to derive an income that pays the state's expenditure. The advantages of this form of "taxation" are clear. It was best described by Keynes who argued that

> "A government can live for a long time by printing paper money. That is to say, it can by this means secure the command over real resources - resources just as real as those obtained by taxation. The method is condemned, but its efficiency, up to a point, must be admitted. A government can live by this means when it can live

[10] P. Cagan (1956), op. cit., p. 78

by no other. It is the form of taxation which the public find hardest to evade and even the weakest government can enforce, when it can enforce nothing else. ... The burden of the tax is well spread, cannot be evaded, costs nothing to collect, and falls, in a rough sort of way, in proportion to the wealth of the victim."[11]

II. Cost-push inflation: Inflation can also be caused by changes in the supply of goods. If companies and economic entities are dependent on certain costs for their supply of goods, then the aggregated demand of an economy must also depend on these costs. If they rise, prices rise accordingly. In this scenario, costs would push up the general price level. The factors involved could be wages that rise faster than productivity, or the costs of raw materials that rise proportionally higher than other prices. Both factors seem to have played an important role in the aftermath of World War I. The war had strengthened and organised the working class which then put strong pressure on both the government and employers. They achieved wage increases, the shortening of working hours as well as improvements of social conditions and therewith pushed up costs. At the same time, costs also increased due to international competition for raw materials needed everywhere for reconstruction purposes.[12] However, this form of price increases also needs to be financed by an increased issue of nominal money, if it is to be inflationary. If the money supply were stable, an increase in prices would result in less competition and, consequently, a return to the old prices; or, if wages and the prices for raw materials were inelastic, price increases would result in a corresponding decrease in demand, a decrease in production, and, ultimately, in recession. Therefore, the elasticity of wages and prices was an important factor for this kind of inflation. The only sensible reason for a central bank to issue additional money in response to cost-push inflation was to use this as a means of economic policy. If they regarded the costs as inelastic, an increased money supply could help prevent a recession and a slow-down in reconstruction.

III. Profit-push inflation: If prices are administered, the supply side can raise prices above the rise in costs in order to maximise its profits. Such a stimulus to inflation, however, demands restricted markets. In some countries World War I saw the beginning of a process of cartelisation that continued in peace time. These cartels, in effect, administered the prices of their goods.[13] On the other hand, they would not have gone very far if the demand for them had been elastic or the money supply restricted. Again, the magnetisation of demand can only be understood as either a part of economic policies or as a temporary weakness of the monetary authorities.

In conclusion, in all three scenarios, the increase in prices has to be "financed", i.e. the

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[11] J.M. Keynes (1924), op. cit., pp. 41-43

[12] League of Nations (1944): International Currency Experience. Lessons of the Inter-War Period, Genève, p. 113

[13] See, for example, C. Bresciani-Turroni (1937): The Economics of Inflation. A Study of Currency Depreciation in Post-War Germany, pp. 212-223

money supply has to be expanded (apart from short periods of increased velocity) to realise the demand. Therefore, the central bank has to print the additional nominal sum. This could be caused either because credit institutes are not restricted by the central bank, or because the central bank decides deliberately to accept inflation as a means of economic policies. In all three scenarios, however, the technical side is identical. In all of them, there is one social group that tries to raise its share in the national product on the expense of others and is tolerated therein by monetary politics. In order to counteract such a trend, it is important to analyse who gave the first impulse.

In the interwar period, the problem of reconstruction was that physical capital had to be mobilised much faster than in normal times. The means for reconstruction expenditure could have been found either abroad, in the form of foreign credits or within the respective country through the restriction of private consumption. Yet, such a restriction required either voluntary saving or taxation. Since voluntary saving did not take place on a sufficient scale, the government had to initiate a process of enforced saving. In contrast to war times, however, when people are prepared for discipline and sacrifices, this is a difficult task at the beginning of peace, particularly to the extent required after World War I. Boulding rightly observed that "the war is over; the burden is lifted; people want to come out of the years of toil, darkness and tears, and reap the rewards of their sufferings. Workers press for higher wages and threaten revolution if their demands are not satisfied. The rich make full use of their opportunities of extravagant consumption which the war has denied them."[14] It seems that every government is weak in such a situation. Thus, Nurkse was right in pointing out that

> "inflation takes place when reconstruction expenditure, not covered by taxation, increases beyond the point at which a country's productive resources are close to being fully employed. A rise of prices is inevitable in these circumstances, as total production cannot be increased; and so long as prices rise faster than consumers' incomes, the real volume of consumption tends to be restricted."[15]

This trend was compounded by the fact that some of the inflationary countries had an inadequate framework for tax increases or even general tax collection.[16] Haller was probably right in arguing that "if the state caused the inflation, it did it as an act of emergency case solution."[17]

A further argument in favour of this form of deficit finance was that inflation also created a positive climate for economic growth. First, the permanent over-demand secured almost full employment. This was an important argument after the war, when due to the disarmament, thousands of soldiers became unemployed. The creation of new jobs was on top

[14] K.E. Boulding (1945): The Economics of Peace, London, p. 25
[15] R. Nurkse, in League of Nations (1946), op. cit., p. 5
[16] This argument seems to be valid for all hyperinflation countries; see chapter III for the Polish example.
[17] H. Haller (1976), op. cit., p. 152

of the priority list of most governments. Thus, every trend that gave a push to the economy was welcomed by the governments. Also, prices tended to rise faster than wages, and this wage lag helped employers to increase their profits. Consequently, this trend created a positive environment for investment. Furthermore, interest rates rose more slowly than prices, and thus investment credits became cheaper. At the same time, existing credits were "paid for" by the inflation, because their real value diminished during the inflationary process. This, in turn, helped industry to start anew. Then, prices for public goods such as railway tariffs tended to rise more slowly than general prices, and thus production costs decreased. Finally, imported goods became more expensive so that people tended to buy more local goods. All these arguments meant that producers could increase their share of the national product as a consequence of the inflationary process. They thus became the motor for reconstruction and economic growth in a supply-side oriented economy. This might have been another factor in the argument about the emergency case. Yet, whatever the reasons were, the important point is that an increased demand gave an important impulse to the inflation, namely in the form of the monetisation of budget deficits. It is arguable that this demand-push inflation resulted from the budget deficit and an increase in the money supply which then caused an increase in prices; and if prices on the local market increased, local goods became less competitive on international markets causing the depreciation of the currency.

Another force was working towards the same end. Exchange depreciation in Continental Europe during the three or four years immediately following World War I was also partly a consequence of the shortage of working capital caused by the war. Many countries in this area emerged from the war with their commodity stocks exhausted, i.e. with no raw materials to feed the productive machinery and with supplies of foodstuffs inadequate to restore the health and efficiency of the population. There was an intense need for imports to replenish the physical working capital required in order to set the mechanism of production going again. In these circumstances, there naturally developed a heavy import surplus and an acute demand for foreign exchange to pay for the foreign commodities. The result was the depreciation of the national currencies on the foreign exchange markets. In some countries the depreciation was aggravated by other factors, such as pressure to transfer reparation payments. Government inflation due to inadequate taxation, administrative weaknesses, political upheavals, etc. was, of course, mostly responsible for depressing the exchange rate. Yet, there is no doubt that abnormally large import surpluses due to capital needs were an important direct cause of exchange depreciation in Europe during the first few years of peace.[18] These imports were paid for partly by the surrender of the gold reserves and foreign assets that were still available. The withdrawal of coins, for instance, made some gold available for export. However, a far more important means of covering the import surplus was the inflow of foreign capital that took place in re-

[18] League of Nations (1944), op. cit., p. 113

sponse largely to the exchange depreciation. At the time there was a strong belief that the depreciation of European currencies was a purely temporary phenomenon due to the temporary post-war needs and adjustments and that these currencies would sooner or later return to their pre-war parities, i.e. to those parities that were regarded as inherently "normal" and "natural". Given this state of anticipation, any fall in a currency's exchange value presented an inducement to acquire bank notes, deposits and other assets expressed in that currency. Also, foreigners seized the opportunity to purchase all kinds of real estate, both residential and industrial, at their depreciated exchange values. The balance of payments was brought into equilibrium by a capital influx after each successive fall in the exchange rates, but equilibrium was temporary. The stimulus of depreciation had to be repeated.[19] As in the previous case, this was a demand-push inflation, but here the argument about the consequences run on a different line. Now the currency first depreciates due to a negative balance of payments, resulting in the rise of the general price level and wages. Consequently, state expenditure increases, and a budget deficit develops that causes the expansion of the money stock.

However, the inflationary experiences also contained elements of a cost-push inflation, as has been argued before. When costs rose because of increases in wages and the prices of raw materials, industry and trade did not have to curtail their production. They were given long-term credits by the central bank that were then "paid for" by the inflation. The credits were, in effect, subsidies that were meant to stimulate economic growth. E. Taylor estimated that in Poland, for example, 20 per cent of total emission was given as credit to trade and industry.[20] The causal relationship in this argument is that first costs rose which led to an increase in the general price level. This, in turn, caused a rise in state expenditure, the additional issue of money and the depreciation of the currency.

After the war, two theories tried to explain the inflation: The Balance of Payment Theory and the Quantity Theory of Money. The first argued that the negative balance of payments was the main cause for the depreciation of the currency and, thus, of inflation, while the latter viewed the continued increase in the money supply that was used to cover budget deficits as the main cause. Interestingly, the German Reichsbank followed the line of the balance of payment argument, which is an important point if one wants to understand the rationale behind its policy. When domestic prices grew faster than money and the exchange rate rose faster than domestic prices, it seemed to confirm the balance of payments theory. The theory argued that a balance of payments deficit, exacerbated by speculation and reparation payments, caused a rapid fall of the local currency and rise of the exchange rate. This depreciation pushed up domestic prices. Higher prices of goods and foreign exchange increased the government's deficit and thus the need for the central

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[19] League of Nations (1946), op. cit., p. 45

[20] E. Taylor (1926): Inflacja Polska, Poznan, p. 188; for other countries, see League of Nations (1946), op. cit., pp. 28-32

bank to print money. Yet, as Webb correctly pointed out, the theory starts with the flawed assumption that the balance of payments was exogenous and not responsive to Germany's monetary and fiscal policy. In fact, the trade and capital accounts that comprised the balance of payments were both endogenous. The real value of desired money balances depended on expected price inflation or expected exchange depreciation. If individuals found themselves holding more than the desired real cash balances, they would have tried to buy more goods. The aggregate result would not be less nominal money, but higher prices all around and therefore lower real money balances. Modern quantity theory also predicts that the price level rises more than the money supply after an increase in inflationary expectations, for that is how the real value of money balances declines when the nominal value continues to grow.[21] If the balance of payment theory argued against stability or a restriction of the money supply on the grounds of an elastic demand that had to be met, this can be interpreted as a vote for economic priorities. The government or, as in the German case, the Reichsbank, regarded this demand as more important than price and exchange rate stability. What it termed an inelastic demand and sought to monetise and finance, was the accumulation of its economic priorities that ranked before stability.

The quantity theory of money, on the other hand, stressed the impact of changes in the money supply on the general price level. This disregarded all effects of money variations on the real sphere of production. It also disregarded demand inelasticity and viewed the increase in the money supply as the sole cause of the price increases.[22] Yet, while both theories contained part of the truth, none of them gave the whole picture. The situation after the war was very much that of an emergency case. The demand for goods needed in the process of reconstruction was indeed inelastic to a large extent, and governments were not in a very strong position. At the same time, inflation offered a stimulus to economic growth. It is important to point out that inflation actually affected the real sphere of production since consumption rates fell while investment rates grew. This was not a zero sum game. However, the question remains why inflation continued even after the initial demand was met. What were the dynamics of inflation?

THE SHIFT INTO HYPERINFLATION

Cagan defined the outbreak of hyperinflation as that point in the inflationary process where the monthly inflation rate exceeds 50 per cent and remains above this mark for at least some months.[23] This definition was then consequently used by most scholars writing

[21] S.B. Webb (1989), op. cit., pp. 1-22
[22] C.-L. Holtfrerich (1980), op. cit., p. 177-178
[23] P. Cagan (1956), op. cit., p. 25

about these issues.[24] Most of them give no qualitative explanation as to what differentiates inflation from extreme or hyperinflation. Yet, such an explanation is needed for a proper evaluation of the process that, in turn, would determine the course of stabilisation attempts.

At the beginning of an inflationary episode, the population reacts rather slowly. Shop owners might have been used to reconsider their prices on a yearly or half-yearly basis, and so it takes them a while to react to the increased demand. The same is true for the renegotiation of wages. Thus, prices and wages rise with a lag and allow the government a high seigniorage[25]. Once they have increased, however, a new balance of money, prices and wages occurs on a different level determined by the initial rise in the money supply. Then, the process is repeated as a result of the next deficit. Yet, people learn from their experiences. Over time they begin to expect price rises and react increasingly faster. The growth rates of money supply and of prices and wages turn into a spiral that becomes ever narrower: Inflation causes price and wage rises that result in the expectation of further increases. The lags shorten, and thus the growth of inflation and its frequency has to be increased in order to secure a stable seigniorage. In other words, people learn to adapt to inflation from their previous experiences, and the government has to issue an ever increasing amount of notes in order to secure the required level of revenue from the inflation tax.[26]

This model is based on two assumptions, namely that price setting and wage adjustments are microeconomic decisions, which makes them exogenous for the government and that seigniorage is the only means of covering the budget deficit, i.e. that seigniorage is endogenous. The interaction between inflation and the frequency of price adjustments represents one of the building blocks of inflationary dynamics. Individual firms face the microeconomic decision of how often to change prices. One might also interpret the shortening of adjustment intervals as a response to increased uncertainty. The frequency of adjustment becomes exogenous in a high inflation economy, with the shortening of the adjustment interval accelerating inflation which, in turn, leads to a further shortening of adjustment intervals. Without monetary accommodation this process could not go far. Yet, since money growth is endogenous through budget deficit finance, the shortening of adjustment intervals becomes an endogenous driving force in the inflationary process. In the labour market, the frequency of wage disbursements responds to the cost of holding money between payments. For those in the labour force who only hold currency, an increased frequency of payments translates into an automatic rise in velocity.[27] This short-

[24] For a recent example, see M. Bruno (1993): Crisis, Stabilization, and Economic Reform, Oxford, p. 3
[25] *Seigniorage* refers to the net revenue a government draws out of its privilege to issue high-powered money, in contrast to the *inflation tax* that refers to the nominal difference between the rise in the money supply and the price rise.
[26] This is basically Cagan's model; see P. Cagan (1956), op. cit., pp. 37-41
[27] See also the critique of Cagan's model in R. Dornbusch et al. (1990), op. cit., pp. 14, 26

ening of adjustment intervals for prices as well as for wages has two consequences. Technically, the velocity of the money circulation increases. If workers are paid more frequently, they can spend their money faster, and that is exactly what they want to do, since with increasing price adjustments they would loose money with every day or even every hour that they wait. Furthermore, with increasing velocity the real value of the money stock decreases. If money passes faster from one owner to the next, relatively less notes are needed in the economy. Although the nominal amount still rises because of the general price increases, the real value decreases. This results in greater instability and a decreasing influence of the monetary authorities. The other consequence is qualitative. In times of moderate and high inflation, the causal relationship of inflation and prices runs from a rise in the money supply to a consequent rise in the general price level. However, given the increasing adaptation of individuals to the process, the shortening of adjustment intervals and increasing uncertainty, this causal relationship should change. Prices should out-strip inflation, leaving the monetary authorities only the opportunity to react. Although the seigniorage remains endogenous, the inflation tax becomes exogenous. This qualitative change could be one determinant of hyperinflation, namely the turn towards an exogenous money supply. With the outbreak of hyperinflation, the growth rate of prices should exceed the growth rate of the money supply and the gap between the two lines should widen.

Yet, one has to ask about how realistic this scenario is. The crucial point is the use of expectations in the process of price setting and wage bargaining. The frequency of price and wage rises, as has already been explained, is a microeconomic decision of individual firms. It accelerates with increasing inflation rates. One of its determinants is the increasing uncertainty about further developments since a daily published money supply index is not available that would add some foundation to the gamble of price setting. Thus, price setting becomes increasingly more difficult. Payments that are not due on the day of the purchase first come to include an inflation premium to insure the seller against the depreciation. Increasingly, however, price setting will be oriented towards the exchange rates as the only index that is available on a daily or even hourly basis. A shoemaker, for instance, who needs a whole month to fulfil his contract, namely to make an ordered pair of shoes, is very likely to set his price in dollar value, i.e. the equivalent of x dollars in the local currency on the day of payment. Large transactions would even actually be made in dollars. Thus, when inflation becomes extreme, price setting occurs in dollars with the result that prices in the local currency become fully flexible. As Dornbusch explained, "the shift to dollar prices occurs when the value of the dollar becomes a better indicator of the current domestic price level than information contained in past rates of inflation."[28] Yet, the process of price setting on the basis of the external value of the currency accelerates

[28] Ibid., p. 15. In the interwar period, the most attractive foreign currency was the dollar because it had remained on the gold standard throughout the war and was therefore regarded as the most stable means of exchange.

over time. In the beginning, it is restricted to prices of deferred payments and large transactions, but increasingly more prices follow this pattern because of its aggregate consequences. With everyone who joins "the club of dollar-indexation", all the others loose a bit more due to increasing instability. At its limit, indexation to the dollar becomes the only way a firm can judge its relative price position given the prohibitive costs of ascertaining the current price level. Because pricing by firms and industries translates into an aggregate rate of inflation, their prices have spillover effects: on the pricing of labour, including official minimum wage and public sector wage setting, on the adjustment of public services and, importantly, on the exchange rate. With accelerating inflation, the indexation of prices to the exchange rate would become almost complete. The orientation towards the dollar would be the only means for the firms to estimate relative prices. Now changes in the exchange rates foreshadow actual prices. If inflation rates rise, the frequency of price setting increases. Thus, although the dynamics of the money supply has a theoretical chance of driving the regime into hyperinflation, the likelier scenario is that the exchange rate takes the lead.

The exchange rate is an auction price. The supply is, roughly speaking, determined by the revenue from exports and the inflow of foreign capital, the demand, on the other hand, by the funds required for imports as well as the outflow of capital. Ultimately, supply and demand balance each other out if one disregards gold and foreign currency reserves hoarded in the central bank. The exchange rate thus reacts towards changes in the money supply in the same way as the prices of goods since people are prepared to pay a higher price if more money is available, or they bet lower if money is restricted. Yet, during inflation the demand for foreign exchange changes. In the beginning of the process, the exchange rate reacts somewhat slowly to fluctuations in the money supply, just as prices do. In the interwar experience, as has been mentioned before, it paradoxically even rose due to speculation. Thus, in the initial phase of inflation, the inflating currency tends to be overvalued.[29] If, however, the expansion of the money supply continues and therewith also the depreciation of the currency, a new phase sets in during which adjustment intervals shorten and the exchange rate reacts very sensitively to inflationary expectations. Now the preferences for foreign currencies change since they offer a store of value while cash balances in the local tender are "taxed", and, in large transactions, they are increasingly used as a means of payment. Thus, people start to flee from the inflating into the foreign currencies.[30] In the interwar period, the depreciation caused by overdemand was further strengthened by the flight of foreigners from the inflationary currency. They had initially speculated in it, but then came to realise that this was a negative-sum game.

[29] This is, of course, only true for a country with no history of inflationary experiences. However, the trend was very welcome in the interwar period due to the high demand for imports and the low availability of goods for export.

[30] A pre-condition for this trend is, however, that foreign currencies are at all available to individuals and that the society is not too impoverished to save. This is important to note particularly in the Polish example. See also chapter IV.

The monetary overhang that had been caused abroad by the monetisation of speculation later flowed back.

The trend of the indexation of prices towards the dollar combined with the flight from the local currency into foreign exchange means a qualitative change in the inflationary regime. If wage and retail price setters shift from using past inflation, perhaps on a monthly basis, to using the current exchange rate as a pricing guide, all lags disappear. In combination with endogenous money, a totally unstable price level emerges. As Dornbusch, Sturzenegger and Wolf rightly point out, this catch-up process could be another explanation for the explosion in the price level and exchange rate that characterises outright hyperinflation.[31] The adjustment intervals are now determined by changes in the exchange rate which in turn are determined by the increasing esteem for stable foreign currencies. Prices now overshoot the increase in nominal money and, therewith, the seigniorage diminishes. With the outbreak of hyperinflation, the fall in the external value of the inflating currency should exceed the growth rate of the money supply and the gap between the two lines should widen. In this scenario, however, the outbreak of hyperinflation would not be inevitable if the government had the power to introduce strong exchange restrictions. Price setting would then still be oriented towards the external value of the currency. Yet since the means of payments remains the same, the emancipation of prices from the money supply does not translate into a widening gap between the exchange rate and the money supply. Exactly for this reason, the governments of the inflationary regimes in the interwar period restricted the trade with foreign currencies. Yet this started a development that was similar to that of a disguised inflation: Black-market rates now exceeded the official rates, and many individuals sought to exploit loopholes in the restrictions. Exporters would not fulfil their obligation to exchange the full amount of their earned foreign currencies, and individuals who were sent money from abroad would keep it rather than give it to the Treasury in exchange for increasingly worthless paper. The monetary authorities had to take this trend into account. They had to be careful not to allow the gap between the black-market and the official rates to become too significant, if they wanted to prevent further demoralisation (that in turn would have caused more problems with the restrictions). The experience thus shows clearly that the successful prevention of the shift into hyperinflation, at least if the process develops in the above described pattern, requires a strong government. It is therefore less an economic than a political problem.

The interwar experience also showed another problem linked to the issue of counteracting the inflationary dynamics. One of the mechanisms described was that, in the case of a negative balance of payments, the local currency depreciates leading to a rise in exports and a fall in exports until a new balance is reached. In the German case, however, a point

[31] R. Dornbusch et al. (1990), op. cit., p. 18

was apparently reached at one stage of the inflation at which the demand for foreign currencies due to reconstruction requirements, reparations and the flight from the currency at home and abroad was higher than exports or capital inflows could have possibly raised. The monetary authorities could then offer however much they wanted, but the spiral would never come to an end. Here, external factors determined that the only way out of the dilemma was foreign aid. Dornbusch, Sturzenegger and Wolf described yet a further factor of how the exchange rate can influence the inflationary process, namely through fluctuations in the real exchange rate. In a regime that sets its exchange rate, the government devalues the currency if they think this will improve their external position. And if the exchange rate is elastic, then it is an auction price that is determined by expectations for the future development. In this context, the expectation of budgetary problems can lead to the devaluation of the currency that exceeds the actual deficit. In an unstable economy, such an overshoot could have the same initiating power as a political or psychological shock. The exchange rate would thus not influence the dynamics of hyperinflation directly, but it could help to accelerate a trend that is already prevailing. If dollarisation is almost complete, such a shock could trigger the ultimate turn into hyperinflation.[32]

A further important factor is the development on the money market. A trend that is noticeable in all countries with high inflation rates is that, in an episode of escalating inflation, premiums and interest rates can never increase enough to follow the pace of the price increases. The interwar cases of hyperinflation are good examples for this.[33] Long-term credits are thus increasingly paid for by the inflation since the value of the loan diminishes with the depreciation. In the Polish inflation, a loan that was worth 1,000 Polish marks in 1919 shrank to less than a fenig in real terms at the end of 1923. This in turn was the reason for the fact that no one was prepared to grant long term credit or buy treasury bonds any more. The German example illustrates well that, after the war, people had bought treasury bonds because they had seemed secure in times of political instability, but also due to patriotic feelings. However, they came to realise that with increasing inflation, they were loosing money in real terms since the inflation rate was higher than the interest that they got when the papers were due. Furthermore, it became evident, that the government paid these bonds back by issuing new bank notes, i.e. inflation. Interest rates had to increase ever higher to attract private capital, but at the same time less and less people were prepared to buy these bonds.[34] The same trend was noticeable for long-term private credits. So, learning from their experiences with the inflationary process, people change their saving habits. They start looking for other forms of investment, instead of taking it to the banks or to the Treasury. Webb described the consequences of this trend as follows:

[32] Ibid., pp. 35-40
[33] J.M. Keynes (1924), op. cit., p. 17
[34] L. Bilinski (1922): Wspomnienia i Dokumenty, Warszawa, vol. 2, pp. 273-274

"The main influence on the share of total debt monetised seems to have been inflationary expectations. With greater expected inflation, more of the debt was monetised. Consider how this aggregate result would arise out the behaviour of individuals. If a person expected low or negative inflation rates, she would wish to hold a substantial share of her wealth in government debt, paying a nominal return of 5 per cent per year. Suppose some new information shifted her probability distribution of expected inflation upward. She would then wish to hold less of her wealth in government debt and more in real assets. To try to fulfil this wish, she would discount some of her T-bills at the Reichsbank, take her cash, and go out to buy goods. But if everyone else heard the same news and interpreted it in a similar way, they would do the same thing. The aggregate results are that, in response to increased expectations of inflation: 1. More of the debt is monetised. - 2. People bid up the nominal prices of real assets and commodities. - 3. The real value of total debt (monetised and unmonetised) declines. - 4. The real value of money also declines, but less rapidly."[35]

The consequence of this trend is that the central bank becomes the only source for long-term credit for both the government and industry. Credits are increasingly monetised by the printing press and, therewith, linked to the development of the "inflation tax". This dependency pours oil into the fire of inflation since the seigniorage becomes exogenous for the government in so far as only severe cuts into the budget and the restriction of credits given to industry (and, therewith, the acceptance of economic depression) can solve it. It is this dependency that allows the inflationary process to accelerate. The trend also allows for a dynamics of its own. As described earlier in this chapter, people start looking for other kinds of investment or, at least, a new store of value. Therewith, the flight from money becomes another driving force in an unstable inflationary process. As inflation increases, the public substitutes away from money toward other assets and toward goods. Adaptation in financial markets creates convenient alternatives to money, especially at higher rates of inflation. This force leads to the dramatic rise in velocity, or demonetisation, in high inflation economies. This flight from money may take three basic paths, namely a shift into foreign assets, a shift into interest-bearing domestic assets or a shift into real assets, i.e. goods, equities and real estate. The response of real money demand to an increase in the cost of holding money is ordinarily thought of as a movement along a liquidity preference schedule. However, there is also financial adaptation. As a black market for dollars develops; as vendors appear on every street corner, holding and using dollars becomes more convenient. When financial institutions introduce checkable, interest-bearing overnight deposits, holding non-interest bearing money becomes unnecessary. The dynamics of real money demand in response to an increase in inflation involve several steps: First, inflation must increase for a sufficiently long period and must be expected to remain high long enough for new financial services to be offered; then households and firms gradually adjust to these new products; and, last, as households start adjusting, the new product is offered more pervasively and competitively, thus speeding up the response of money holders. Once new financial products have been adopted,

[35] S.B. Webb (1989), op. cit., p. 24

increases in the rate of inflation influence real money demand until a new threshold is reached where yet more liquid, interest-bearing assets are offered. This process converges either to dollarisation or to an economy with most of the financial market represented by an interest-bearing overnight market. In consequence, the availability of alternative assets can determine the pace and the dynamics of inflation. Since the bank notes in circulation loose their importance with accelerating pace, i.e. the real value of the money stock diminishes, the process leads to increasing instability. The government who relied on taxing the money stock, looses its tax base. A qualitative change appears when most money is indexed money and, thus, the seigniorage tends towards zero. This would be the "natural end" of the inflationary process, meaning the bankruptcy of the Treasury. Yet, this is a more theoretical point in the context of the interwar inflationary experiences since it requires some experience as well as an understanding of what is going on. After World War I, there was not much alternative to money, i.e. either dollars or the inflating currency, as both means of payment and store of value. Although, in Germany, some firms and local governments issued *Notgeld* and, thus, provided an alternative to bank notes while, in many instances, cigarettes became another means of payments, they had apparently no major influence on the inflationary dynamics.

The questions about the dynamics of inflation also have to include the consequences of the process on the deficit. The previous paragraphs argued that the reduction of real cash balances constitutes a major influence on the budget deficit. The real value of the money stock decreases due to both dollarisation and the rise in the velocity of money circulation. Individuals flee either into other assets or into goods and commodities, thus keeping their cash balances to a minimum. In consequence, this trend restricts the seigniorage. Hence, the latter responds negatively to the inflationary dynamics. Yet, at the same time, there are also factors that influence the size of the deficit. There are five channels through which it is affected by the process. First, inflation constitutes a negative influence on the budget deficit since taxes, levies and custom payments are reduced due to collection lags. Their value between the time when they are due, the time when they are collected and, finally, the time when they are spent decreases. This trend accelerates over the process because the higher the inflation, the more is the loss. Consequently, the deficit grows. Furthermore, a by-product of inflation and public demoralisation is that tax compliance deteriorates and so the tax yield of a given tax structure declines. In times of monetary instability and increasing uncertainty, demoralisation seems to increase, at least, in terms of monetary matters. Also, the prices of public goods tend to rise slower than general prices, and thus their revenues decline. The government is somewhat slower than the private sector in adjusting the prices of public goods such as railway tariffs, telecommunication and mail due to both inflexibility and the fact that they become political factors. They tend to be artificially low as part of the government's economic policy. To some extent, however, the deficit also responds positively to extreme inflation since the average real public sector wage between adjustment dates declines. Again this is due to the fact that the government reacts slower than private firms, but also because civil servants tend to be less organised than industrial workers. Last, the real value of payments on long-term debt, fixed in nominal terms, declines. War debts were paid for by the inflation, but also the credits that the government had given to industry.[36] In conclusion, most of the above listed channels influence the budget deficit in a negative way. The deficit increases with accelerating pace during the inflationary process, making the government even more dependent on the seigniorage.

This leads to the question about the phases of inflation. It is important to distinguish the different phases of the inflationary process to allow for a full appreciation, but also to decide about possible remedies and means for stabilisation. The different examples of extreme inflation in the interwar period suggest that the process comprises three distinct phases: First, modest inflation which was the "introductory part" of the process, when inflationary expectations were limited. During this phase, money lost its function as a store of value. Then came a phase of extreme inflation which was the phase of great instability. Money lost its function as a standard of value over this period. Last, hyperinflation which was the final part when the government lost control over the process that had developed its own dynamics. The government then took a mere defensive role. During this phase, money lost its function as a means of payment.[37]

These phases describe the development of money as an institution. When the monetary authorities undermine this character of money, the general public withdraws from it. Consequently, throughout the inflationary process, the money supply looses part of its real value. In all the cases of hyperinflation during the interwar period, the lowest level was reached in one of the middle months of the last phase of the process.[38] In other words, the money in circulation was *de facto* reduced. This was caused by various reasons: First, since everyone came to spend all of his or her money instead of saving part of it, this trend reduced the amount of available goods in relative terms. Then, with increasing competition for goods, their velocity of changing from one person to the next increased. At the same time, the velocity of money circulation increased for the same reason, when people were minimising their real cash balances. People also started to use other forms of payment like cigarettes, coffee, etc., or barter trade in general. Ultimately, on their flight from the local currency, they also turned to foreign currencies as a means of payment.[39] All of these factors tell about the extent to which the government is still in control of monetary matters in the economy. The growth rate of the real value of money in circulation should thus tell about the phase of the inflationary process. In a retrospective view, a sudden jump in the value of the money in circulation could indicate the out-

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[36] See also R. Dornbusch et al. (1990), op. cit., pp. 13-14
[37] E. Taylor (1926), op. cit., pp. 183-184
[38] October 1923 for Poland, October 1923 for Germany, etc.
[39] E. Taylor (1926), op. cit., p. 167

break of hyperinflation.

All causes of hyperinflation listed above are related to a change in inflationary expectations. Thus, the way people form their expectations should shed some light on the dynamics of inflation. Cagan's model predicts that if the rate of money growth is increased and sustained at its new level, the rate of inflation jumps above the rate of money growth and then gradually falls until it equals the rate of money growth. In the adjustment process, real balances decline accordingly. Expected inflation gradually rises as expectations are revised upward until the gap between actual inflation and prevailing inflation is closed. In other words, people learn to adapt to the inflation from their previous experiences, and the government has to issue an ever increasing amount of notes in order to secure a certain level of revenue from the inflation tax. Arguments surrounding Cagan's basic model have broadly addressed three issues: the expectations mechanism, the assumptions of money growth and the assumptions about the determinants of inflation. An alternative model as presented by Sargent would emphasise fully rational expectations.[40] When perfect insight is assumed, two differences with the previous analysis emerge. First, the price level is allowed to jump. Second, actual and anticipated inflation are equal. In this forward-looking model of inflation, an increase in the growth rate of nominal money immediately raises both the price level and the rate of inflation. Full adjustment to an increase in money growth occurs immediately; there are no protracted dynamics. Anticipated, future money growth still leads to a jump in the current price level, but now inflation rises gradually until money growth increases. In other words, people form their inflationary expectations not only from experiences with this process, but also from a variety of other information that they link with the monetary or fiscal situation.

This model was criticised by Dornbusch, Sturzenegger and Wolf, because it focuses on the demand for money within the economy and not its supply. It describes the process of price setting during an extreme inflation and the relationship between prices and money growth, but it neglects other factors that could also influence the money supply. They argued that the influence of inflation on the budget deficit is a critical element in the inflation. The process is also significantly affected by the adaptation of financial institutions. The emergence of new financial products such as overnight, interest-bearing deposits or the increasing amount of a stable secondary currency affects the government's ability to collect seigniorage and hence shapes the inflation process. Last, the external sector can play a critical role in the inflation process because real exchange rates are not constant. Indeed, the assumption of purchasing power parity is empirically unwarranted. As a result, shocks to the real exchange rate can precipitate high inflation. Thus, they concentrated in their arguments on the original cause of inflation, namely the budget deficit. Their argument for the explosion of prices was the completion of the process of dollari-

[40] T.J. Sargent (1986): Rational Expectations and Inflation, New York

sation. Therewith, they disregarded all other causes influencing the dynamics of hyperinflation.

However, they also described another observation that could be the key to the understanding of how changes in inflationary expectations influence the dynamics of the inflationary process. They argued that "high inflation is intrinsically unstable."[41] All trends in the inflationary process that have been discussed in this chapter have one feature in common, namely that they lead to a reduction in the real value of money in circulation and thus ultimately to state bankruptcy. No change in inflationary expectations is needed to drive the inflation to this goal if it is allowed to continue. The driving force is the adaptation by individuals to the process, i.e. the experience with past inflation. Yet, the process becomes increasingly unstable and thus vulnerable for "attacks" from outside. The sudden outflow of foreign capital, initiated by a political shock, can speed up the process of depreciation; the collapse of the currency in one country can speed up the process of dollarisation in the neighbouring country; the drop in the real exchange rate can speed up the process of monetary adaptation, etc. In conclusion, Cagan is right in arguing that the dynamics of inflation are determined by the adaptation of individuals to the inflationary process. However, he covers only a part of the picture, since he neglects all non-monetary trends. This, on the other hand, would contradict Sargent when he argues that the outbreak of hyperinflation needs a shock that is strong enough to change the quality of the process. Such a shock can only speed up a trend that is already prevailing.

THE STABILISATION OF HYPERINFLATION

"Die Geister, die ich rief, ich werd sie nicht mehr los."[42]

The previous paragraphs determined different causes and their respective consequences for the outbreak of hyperinflation. The analysis of the different causes was used to divide the inflationary process into distinct phases. In turn, the recognition of these phases seems to be important for a successful stabilisation attempt. At the core of the problem is the argument that once inflation reaches a certain range it tends to continue rising unless definite action is taken to stop it. A second threshold is the point where inflation finally gets out of hand, namely the outbreak of hyperinflation. Consequently, the question arises about how this process can be counteracted. What are the factors of stabilisation?

In the interwar period, the reasons for inflation had been above all the financing of budget

[41] R. Dornbusch et al. (1990), op. cit., p. 9
[42] "I cannot get rid of the evil spirits that I myself once called.", in J.W. Goethe: "Der Zauberlehrling"

deficits with the use of the printing press and the negative balance of payments that made it necessary to export the inflating currency. Consequently, the process would stop once the budget and the balance of payments come into equilibrium. This could be achieved by replacing the inflation tax with an other form of state revenue and either the restriction of imports, a boost of exports or the achievement of foreign loans. The problem is, however, that the inflationary process interferes with the economic sphere. By using the printing press to cover the budget deficit, the government pursued indirectly a supply-side oriented economic policy. The inflation tax did not spread the burden of state finances equally among all social groups, but favoured producers over wage earners. Hence, it initiated an economic up-swing. Consequently, every levy that would be introduced to replace the inflation tax would either have to redistribute wealth in a similar fashion or drive the country into recession. Hence, stabilisation became very much both an institutional and a political problem.

A successful stabilisation has to reverse the inflationary dynamics. Consequently, the path of stabilisation has to lead to a balanced budget, since the budget deficit was at the root of all evil. Hence, a change in the government's fiscal policy is needed. The money supply that has so far been endogenous now has to become exogenous. Sargent is right in emphasising this point:

> "The essential measures that ended hyperinflation in each of Germany, Austria, Hungary and Poland were, first, the creation of a an independent central bank that was legally committed to refuse the government's demand for additional unsecured credit and, second, a simultaneous alteration in the fiscal policy regime. These measures were interrelated and co-ordinated. They had the effect of binding the government to place its debt with private parties and foreign governments which would value that debt according to whether it was backed by sufficiently large prospective taxes relative to public expenditures. In each case that we have studied, once it became widely understood that the government would not rely on the central bank for its finances, the inflation terminated and the exchange stabilised."[43]

The introduction of a stable currency combined with a balanced budget reverses all previously determined inflationary trends: First, the relationship of money supply and prices. If the money supply were stable, price increases would not get very far because of corresponding decreasing demand. They would have to come down again to their relative level. Second, the relationship of the local currency and foreign exchange. If the new currency were stable, the flight into foreign currencies would be reversed and an undervaluation of the local currency would diminish. Third, the relationship of local prices and world prices. Given a stable exchange rate, local prices and world prices should be identical. Fourth, the relationship of the money supply (M1) and other assets. If the local currency were stable, interest rates would come down, money holding would become more

[43] T.J. Sargent (1982): "The Ends of Four Big Inflations", in R.E. Hall (ed.): Inflation: Causes and Effects, Chicago, p. 89

attractive, and cash balances would increase to a normal level. After all, the new stable currency would fulfil all functions of money that were lost during the process of inflation. However, this framework does not answer what steps would be needed to allow for the changes in fiscal policy. Stabilisation should try to avoid the disruption of economic activity. It should be a clear cut. And also the stage when stabilisation should take place should be decided. The question has to be answered about the steps towards stabilisation.

It was described earlier in this chapter how one inflationary trend was the change in the relationship of the money supply and prices. Yet, then it was argued that price setting becomes increasingly difficult during the process and traders adjust their prices towards the exchange rate. Thus, the trend of dollarisation would ultimately outrun the trend of monetary adaptation. This argument was supported by Dornbusch, Sturzenegger and Wolf who observed that "exchange rates ultimately become the basis of pricing ...that is why [they] are a seemingly attractive means of dampening inflation in the short-run, and so they are abused for that end."[44] Webb, however, described that "in Germany, until late 1923, the Government succeeded in preventing firms from indexing their domestic prices to the exchange rate."[45] Thus, apparently, the trends are not the same in every country. Their strength seems to depend on the conditions within the inflationary regime. This argument seems particularly sensible for the different interwar examples of inflation. Russia, for instance, with its communist government did not offer alternative assets to money holding that could have led to a flight from the local currency; and the trend of dollarisation can be assumed to have been stronger in Poland than in Germany, since Poland was a new country that was not much trusted, and the currency was always seen as transitory. Germany, on the other hand, was a state with a tradition of stability. The resignation with the local currency was thus a much larger step. Last, another important trend in the German inflation that was much weaker in the other different examples of inflation was that of exchange depreciation after the withdrawal of foreign capital. This leads one to conclude that the different steps of stabilisation have also different weights for the process. It is only in the very last phase of the inflation that all trends combine to drive the state into bankruptcy. The later in the inflationary process the stabilisation is applied, the more measures are needed. In the final stage, a stabilisation of the exchange rate would stop price increases, while a valorisation of taxes combined with the organisation of additional funds would make the government independent from the seigniorage. This would lead to a balanced budget which is a precondition for the introduction of an independent central bank and a stable currency.[46]

If this is true, then how important is credibility? Sargent emphasised that credibility is one

[44] R. Dornbusch et al. (1990), op. cit., p. 16
[45] S.B. Webb (1989), op. cit., p. 10
[46] The example of the Polish "coin inflation" of 1925 supports the thesis that a government whose budget does not balance always finds a way to issue new money; see also chapter VI.

of the pillars of a successful stabilisation. From his point of view this is a logical consequence of all inflationary trends. If hyperinflation needs a shock to break out, then credibility has to reverse the shock.[47] Studying the Hungarian hyperinflation after World War II Siklos came to a similar conclusion. He argued that

> "The fact that the public was being prepared for the introduction of reforms is no trivial matter, for it suggests that, to ensure a successful stabilisation, it may be preferable to acquaint the public with the general characteristics of the reform some time beforehand, that the timing of the reform may itself be one determinant of its success and, finally, that the public is convinced that the government presents a plan which it is able to carry out."[48]

But is that the whole truth? What happens, if the general public does not believe in the success of the stabilisation? The scenario to test this question would be a hyperinflation that has just seen the introduction of the valorisation of taxes, the introduction of an indexed extraordinary capital levy that aims at providing the Treasury with additional funds as well as the commitment of the government not to rely on the printing press any more. The only critical element would thus be the exchange rate. If now the exchange rate continues to rise due to over-demand and a flight into foreign currencies and, in consequence, prices increase, the aggregated demand for goods decreases. Thus, in the long run, prices would have to come down again. The government, on the other hand, would have to reduce its demand for the time of the higher prices after stabilisation, or make sure that the additional funds are sufficient to cope with this trend. In this scenario, the success of the stabilisation would depend on the flexibility of the government. In the long-run, credibility would not be needed. Siklos' observations, however, suggest an argument why credibility is not "overrated as a concept" as Dornbusch, Sturzenegger and Wolf argued.[49] He described that after the announcement of the Hungarian reforms, that were credible, the velocity of money circulation decreased substantially while real cash balances increased. Inflationary expectations were reduced, and everyone seemed to be prepared to give the government a chance.[50] In consequence, if credibility is assumed, prices do not rise for a while after the reforms, leaving the government time to balance the budget. Pressure on the Treasury decreases. This, in turn, leads one to conclude that, while a shock can speed up inflationary dynamics and trigger hyperinflation, credibility can speed up stabilisation and help to smoothen the process.

The question about when to stabilise is much more difficult to answer since there are actually two questions at stake, namely when should a government stabilise, and when is it

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[47] T.J. Sargent (1984): "Die Beendigung vier großer Inflationen", in G.D. Feldmann, C.-L. Holtfrerich, G.A. Ritter, P.C. Witt (eds): Die Erfahrung der Inflation im internationalen Zusammenhang und Vergleich, Berlin, p. 41

[48] P. Siklos (1991): War Finance, Reconstruction, Hyperinflation and Stabilization in Hungary, 1938-48, Oxford, p. 149

[49] R. Dornbusch et al. (1990), op. cit., p. 54

[50] P. Siklos (1991), op. cit., p. 179

in its power to introduce the necessary reforms? From an economic point of view, stabilisation should occur as soon as possible, because of the negative impact of extreme inflation on the society as a whole. First, extreme inflation is socially unjust since it hits only at money holders, but favours all owners of goods, real estate and alternative assets. It shifts money from one social group to another and, thus, distorts the social order within the society. Furthermore, extreme inflation also distorts the economic sphere. During the inflation, prices do not rise simultaneously for all goods. Relative prices become seriously misaligned. Thus, for example, a typical feature for the interwar cases of hyperinflation was a boom of the steel industry during the inflation and a collapse after stabilisation.[51] Also, extreme inflation leads to cartelisation due to increasing transaction costs. This is a further factor in the distortion of the economic sphere. Big consortiums have easy access to credit while small firms suffer. However, these arguments explain at the same time, why early stabilisation is so difficult to accomplish. As long as the process sees winners and losers, it seems impossible to combine all forces in the attempt to stabilise. In an early stage of extreme inflation, too many individuals are still convinced that they lose more through stabilisation than through inflation. From a political economy point of view, it seems sensible to argue that only when the process gets out of hand, consensus can be reached to the extent that is necessary for stabilisation. All interwar cases of hyperinflation saw more than one attempt to stabilise, but they all seem to have failed due to the weakness of the respective governments. These first attempts were all "compromise stabilisations" that did not bring about more than a temporary relief.

CONCLUSION

A combination of delayed war finances, reconstruction costs and, in some cases, also reparations caused the inflationary experiences of interwar Europe. Yet, once inflation reached a certain range it tended to continue rising unless definite action was taken to stop it. The driving force seems to have been the adaptation of individuals to the process, i.e. the experience with past inflation. The process became, however, increasingly unstable and, thus, vulnerable for "attacks" from outside factors. Hence, shocks could speed up a trend that was already prevailing. Hyperinflation broke out when the government lost control over the money stock, and the economy was driving towards state bankruptcy. Stabilisation, on the other hand, was very much an institutional and political problem since it tended to reverse the inflationary redistribution of wealth and thus caused recession.

[51] C. Bresciani-Turroni (1937), op. cit., pp. 183-186

Important for the aspect of reconstruction was that inflation created a positive environment for business and stimulated investments. However, the dynamics of inflation were such that the process was self-terminating and thus restricted this form of raising revenues. A major problem was that the process involved an ever greater reliance of the government on the inflation tax while, at the same time, political obstacles did not allow for early reforms. It seems therefore fair to say that although inflation had some very attractive features, it meant playing with fire.

However, history has often proven to be less rational than economic models predicted. Economists often forget that a state is not a black box where everything turns around money. Factors like the national character, national sensitivities and preferences as well as the international environment at a given time are frequently neglected in economic forecasting. It will thus be interesting to test the theory presented in this chapter against the historical evidence of the Polish example of extreme inflation.

III

THE RECONSTRUCTION OF POLAND

> "Given capital and credit, and with her road, rail and water traffic put on a working basis, there should be no limit to the development of Poland. The resources are there in man-power and in natural deposits. Her coal alone, once she is able to properly mine and transport it, means complete and speedy industrial reconstruction, the reopening of the mills and factories, the re-employment of idle workmen, and the end of the fearful conditions of hunger and devitalisation that have been sapping the strength of the nation for six years."[1]

In his observations, Phillips summarised the whole dilemma of the young Republic: If one looked at Poland's assets, it seemed that the country was capable of managing its own affairs. On the other hand, however, the economy still waited to be formed. Poland started without an overall economic framework, without a sufficient infrastructure and lacking working capital. There was destruction and chaos everywhere. Poland somehow resembled a storage room that was to be turned into a new living room. There was enough furniture to fill the room and allow it to play its new role, but it had to be first dusted, sometimes repaired or even replaced, and then rearranged. What Poland needed was time, as well as investment in its future.

Yet, before Poland could think about its development it had to define itself as a country. There had been no Polish state for 123 years, and when independence finally came about it was neither clear what kind of government it would have nor what the boundaries of the young state were. The first and most important task was therefore to agree on a leadership which would be recognised internationally and which could then negotiate and enact the establishment of essential institutions. This was a vital precondition for the successful construction of the new state. Every other task had to be subordinated.

THE FOUNDATION

When the Great War ended, the Polish territories were ruined. Most families had lost relatives fighting on different sides but on native soil, and when the surviving soldiers returned, some brought with them the ideas of a Bolshevik "classless Europe without frontiers" and of workers' rights. With the advance of the winter, the impoverished and

[1] C. Phillips (1923): The new Poland, London, pp. 74-75

hungry population was increasingly sensitive to political radicalism. Radical local self-government bodies filled the power vacuum left by the retreating Germans and Austrians. At the same time, the Polish political elites still backed the Regency Council, the Polish government established in the occupied Kingdom of Poland by the Central Powers in 1917. At that critical moment, when the German revolution broke out in Berlin and German troops were disarmed in Warsaw, Poland presented a picture of political disintegration. The country was on the brink of civil war. Many different ideas and concepts confronted each other and none of the rival factions seemed to be willing to withdraw from the power struggle. Russian bolshevism clashed with Austro-German social democracy, liberalism and conservatism. Inevitably in an unformed state, all ideas were imported from outside and none of them was an obvious solution to the country's problems and undisputed. To remain in the picture of the storage room, Poland was struggling with the conflict whose furniture would be in the living room. It was this atmosphere that brought J. Pilsudski to power, the socialist aristocrat who had been the undisputed leader of Polish troops during the War. When he returned to Warsaw from his internment in Magdeburg on 10 November 1918, the Regency Council gave him the reigns of power as the only personality that could possibly bridge the gap between the rival fractions. Its decision proved right when the self-proclaimed Lublin government as well as most of the moderate socialist and peasant groups and even his main opponents, Dmowski's National Democrats, accepted him as provisional Head of State. They all believed, as Roszkowski put it: "Opposing him would mean a further radicalisation of the masses."[2]

Yet, the limitations of Pilsudski's position soon became apparent. The government of J. Moraczewski which he appointed on 18 November 1918 was strongly opposed by both the Right and the internationalist Left. It only lasted until 16 January 1919 when it had to make place for a broad coalition of most political forces under I. Paderewski. However, the Moraczewski government left its mark on Polish politics. At the time, Pilsudski saw the major threat in the spread of revolution. That is why the government began immediately to issue a whole series of decrees improving the conditions of workers, including the eight-hour working day, the right to strike and the formation of trade unions. Moraczewski further declared that a freely elected parliament would nationalise key industries, allow for the participation of workers in factory administrations and introduce a radical land reform. All these measures aimed at attracting the revolutionary masses to the idea of an independent Poland and its democratic institutions. They were not consistent, but they covered the most important demands of the Bolshevists, the Social Democrats and the radical peasants.[3] The only programme the government had at this

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[2] W. Roszkowski (1992): "The Reconstruction of the Government and State Apparatus in the Second Polish Republic", in P. Latawski (ed.): The Reconstruction of Poland, London, p. 163

[3] Ibid., pp. 163-164; see also Z. Landau, J. Tomaszewski (1967): W dobie inflacji (=Gospodarka Polski miedzywojennej 1918-1939, vol. 1), Warszawa, pp. 70-71

stage of Poland's post-war development was to establish itself as the political leader of the new state. It sought recognition rather than tried to push through its ideology. This is important to understand if one wants to analyse the first "mistakes" of the government. There was no consistent economic programme yet, but most action was determined by the people and their rather expensive and inconsistent ideas.

The elections to the Constituent Assembly were held in late January 1919, and on 20 February the first post-war Sejm[4] passed a provisional constitution that remained in place until the final Constitution was issued on 17 March 1921. It provided for the foundations of the Polish state system: its legislative, executive and judicial authorities, administrative divisions and local administrative bodies, the electoral law and civil rights. The drafting of this basic law of the new Polish state went much more smoothly than could have been anticipated. In the elections, the Right gained 34 per cent, the Centre about 30 per cent, the radical peasants 21 per cent and, last, the socialist PPS 13 per cent.[5] The result showed that the electorate was much more conservative by nature than the revolutionary atmosphere had suggested. The reason must be looked for in the social structure of the country that was mainly agrarian. Under these circumstances, Moraczewski's socialist programme was not realised. Yet, the threat of revolution remained. A large number of unemployed roamed the streets, struck by poverty, in search for work and food. In their desperation, they seemed to be an easy target for radical ideas. Unfortunately for the young Republic, they were the activists while the agrarian population constituted the silent majority. Labour Minister Iwanowski explained the government's fears at a cabinet meeting in March 1919: "In Warsaw alone there are more than 80,000 unemployed. If we do not give them work immediately, no one can guarantee for peace in the city."[6] The radicalism of the industrial labour force put thus constant pressure on the political performance of the first post-war governments. It was a heritage from the war and restricted legislation until well into the 1920s.

Another restriction on the political administration was the jealousies between the different regions of the reborn country. They resulted in the establishment of numerous small parties which differed not so much in their political programmes, but in their geographical background. Until Pilsudski's coup d'état in 1926, all Polish parliaments comprised of more than 25 parties or "political clubs". Thus, governments were always formed by coalitions, a fact which hampered political decision-making. It is probably not exaggerated to call Polish politics at the time chaotic. Most politicians were inexperienced, and only a few of them had a vision that went further than just "making Poland big again". The system was not very pluralistic, in the modern sense of the word,

[4] The Sejm was traditionally the lower chamber of the Polish parliament.

[5] H. Jablonski (1962): Narodziny II Rzeczypospolitej 1918-1919, Warszawa, pp. 246-250

[6] See the *Minutes of the Meeting of the Council of Ministers for 20 March 1919*, in Archivum Akt Nowych, Warszawa, Poland (from now on: AAN), Protokoly Rady Ministrów 5, p. 1053

since the members of parliament voted sometimes according to class and sometimes according to region, sometimes with their hearts and sometimes with their heads. Consequently, majorities changed quite frequently, but not always rationally.[7]

Simultaneously with setting a political framework, the state also had to recruit and train a public administration. Most of the senior civil servants had left the country together with the ruling powers. Zarnowski estimated that two thirds of all civil servants working in 1923 had taken up their job only after 1918.[8] Furthermore, the new administration was only badly prepared for their tasks. When they took up work for the new Poland, there were no regulations, no defined procedures and often no exact definitions of the different positions. At the same time, they were confronted with the historically grown mistrust of the Poles against every form of administration. In his memoirs, the former Minister of Finance, L. Bilinski, described the conditions he had to work with when he was in office:

> "The budget for 1919 was a slow making-up of single groups of numbers: the natural result of a first try in a new state of such a kind of work, done by inexperienced ministers and civil servants. The main problem was the lack of accountancy, which would have been a vital pre-condition; it is perhaps enough to mention that in order to calculate the expenses for wages for civil servants and the overall costs of administration, each item and each person had to be dealt with separately. The lack of accountancy was due to the insufficient amount of personnel."[9]

In conclusion, the new administration was to a large extent inexperienced, but also confused due to sometimes contradicting laws or, in some instances, the lack of legislation altogether. The fact that democracy was introduced simultaneously with the construction of a state bureaucracy bringing inexperienced politicians to power aggravated the latter task. The British ambassador at the time named it "the hampering influence of a constituent assembly largely composed of illiterates."[10] The new public service only worked properly after the reforms of Finance Minister J. Michalski at the beginning of 1922 in which he introduced descriptions of the different positions as well as proper accountancy.[11]

The second problem the young state faced was that, although it had declared independence, its borders remained undefined. At first, Marshal J. Pilsudski only took over the former Congress Kingdom on 12 November 1918 and then, two weeks later, West Galicia that was shaken by revolution at the time. This was much less than the Poles understood

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[7] For more details, see M. Pietrzak (1969): Rzady parlamentarne w Polsce w l. 1919-1926, Warszawa; a very good impression of Polish post-war politics is also given in W. Pobóg-Malinowski (1956): Najnowsza historia Polski 1864-1945, London, vol. 2

[8] J. Zarnowski (1964): Struktura spoleczna inteligencji w Polsce w latach 1918-1938, Warszawa, p. 207

[9] L. Bilinski (1925): Wspomnienia i dokumenty, Warszawa, vol. 2, pp. 266-267

[10] "Political Conditions in Poland from state of her recovery of her independence by Sir H. Rumbold", 7 November 1920, in Public Record Office, Kew, UK (from now on: PRO), FO 371, N2524/236/55

[11] B. Markowski (1931): Administracja skarbowa w Polsce, Warszawa, pp. 75-98

as being theirs. Halecki caught their sentiments well, when he explained about the desired western border: "The Polish claims were clear and unanimously put forward by the whole nation. It was a matter of repairing the injury of the Partitions and restoring to Poland those parts of Prussia that had belonged to her before 1772."[12] Yet, the Prussian parts of Poland were still part of the German Empire, although, since 19 November 1918, workers and soldiers had established their own councils that now challenged the official authorities. Only when I. Paderewski, the internationally acclaimed Polish composer who became prime minister a month later, went to Posnania on 26 December 1918, a Polish uprising began that lasted until February 1919 and brought large parts of the province of Posnania into Poland. At last, the Treaty of Versailles of 28 June 1919 allocated to Poland parts of Pomerania, parts of East Prussia, and, now also *de iure*, the province of Posnania with effect of 10 January 1920. The Treaty further decided to carry out referenda in Upper Silesia and Masuria, in consequence of which Poland was awarded parts of Upper Silesia in October 1921 with effect from 17 June 1922. The Upper Silesian plebiscite and the resulting partition were preceded by three Polish up-risings between August 1919 and June 1921 in which the Poles tried to achieve another *fait accompli* similar to the one in Posnania. In this instance, however, they failed and the Allies decided to divide the province giving Poland most of its industrial and mining potential but less than half of its territory. At the same time, a settlement with Czechoslovakia on 28 July 1920 decided to divide the Czech part of Silesia, i.e. Teschen Silesia, between Poles and Czechs. Therewith, Poland's western borders were settled.

The eastern borders, however, remained unclear. Halecki explained:

> "Uncertainty as to the future of Russia, and the obscure attitude of the [Versailles] conference in regard to Lithuanian and Ukrainian aims for independence, contributed equally to the fact that the conference reached no final decision regarding the eastern boundaries of Poland, the drawing up of that, however, the Great Powers reserved to themselves in one of the articles of the Versailles Treaty. ... Ultimately, however, the boundaries of the Republic were decided not so much by those deliberations as by the hard fighting that Poland herself, in the hour of her rebirth, was all at once compelled to engage in with nearly all her neighbours, long after the war in the west was over."[13]

The Polish politicians, above all Pilsudski, realised their historic chance and went for it.

In East Galicia, a Ukrainian People's Council took over power in October 1918, and, in November, the Polish population organised their own national movement in Liev[14] that rebelled against Ukrainian rule. At the beginning of 1919, the government in Warsaw decided to enforce the movement with Polish troops. This move resulted in the Polish-Ukrainian war that lasted almost a year. The war ended on 21 November 1919 with

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[12] O. Halecki (1983): History of Poland. New Edition, London, p. 281

[13] Ibid., p. 284

[14] Ukrainian name for German *Lemberg*, Polish *Lwów*, or Russian *Lvov*

Poland gaining all the territories of East Galicia up to the former border between the Russian and the Habsburg empires. At the same time, on yet another front, Polish and Russian troops clashed for the first time over Byelorussia, in February 1919. This was the onset of the Polish-Russian war that lasted until October 1920. It was this war that drew most heavily on Polish resources. The country received hardly any support from its western neighbours since they favoured the "wrong side" in the conflict, namely the internationalist Reds who seemed more likely to hand over those territories that Poland desired.[15] The gamble paid out, and the Treaty of Riga of 18 March 1921 set the conditions of peace as the Polish recognition of the Ukrainian and Byelorussian independence, for which in turn Poland regained the former parts of its Commonwealth that were known as the *Kresy*, i.e. the eastern borderlands.

Map 1: SIX CONCURRENT WARS ON THE BORDERS OF POLAND. 1918-1922

(Source: J.C. Pogonowski (1987): Poland. A Historical Atlas, New York, p. 176)

[15] Davies rightly pointed out that "The Polish-Soviet war ... cannot be described as 'The Third Campaign of the Entente'. For the government of Pilsudski, who preferred the Bolsheviks to the Whites in Russia, it was fought to maintain the independence of non-Russian areas of the former Tsarist Empire." "When Allied diplomatic intervention had failed to produce an armistice, the British refused to give Poland any military assistance and French military credits were terminated." See N. Davies (1981): God's Playground. A History of Poland in Two Volumes, Oxford, vol. 2, pp. 395-397

Last, in April 1919, Polish troops marched into Vilnius[16], but Poland then lost the city again to Lithuania in the course of the war with Russia. It was the coup of General Zeligowski of 12 October 1920 which brought the province of Vilnius *de facto* to Poland, and the result of the referendum of 20 February 1922, *de iure*. The international recognition of the Polish borders, however, had to wait until the decision of the Ambassadors' Council of 15 March 1923. It was only then clear that the new Poland covered a territory of about 388,000 square kilometres and comprised a population of some 28 million people.[17]

In conclusion, the need to draw the borders meant that the war was not yet over for Poland in 1918. The country went on fighting until October 1920. This left the economy under peculiar circumstances. State consumption was huge, and production was targeted at keeping Poland on a war footing. Among the first tasks of the Polish Republic was to establish an army and secure its equipment. With almost no time for preparation, people, goods and money had to be mobilised to make the wars about the borders possible. Pilsudski succeeded in forming an army of 200,000 volunteers and conscripts by April 1919. They were joined by the returning Haller Army, and in the Russian-Polish war in summer 1919 their number already exceeded 400,000. Then, in spring 1920, when the wars reached their climax, 700,000 soldiers were at Pilsudski's disposal, and the number increased to 900,000 until October 1920 when the cease-fire was concluded.[18] Yet, the war with Soviet-Russia not only exposed Poland to imminent peril from outside when a counter-attack drove Russian soldiers to the doors of Warsaw in 1920, but also exercised an enormous effect on its internal development. Work was interrupted in every direction; finances, trade and agriculture were ruined; and the government instead of applying its energies to the administrative and economic progress of the country, was forced to devote them to stemming the invasion which was threatening the country's very existence. At the same time, the heavy military expenditure involved in keeping a large army on a war footing proved an immense drain on Poland's finances. Thus, as long as the wars lasted, there could be no idea of a development programme for the new state.

RECONSTRUCTION AND UNIFICATION

The gaining of power and the drawing of the borders were the two most obvious tasks necessary to define the country. They established the Polish Republic internationally.

[16] Lithuanian name for Polish *Wilno*
[17] S. Szulc (1936): "Ruch naturalny ludnosci w latach 1895-1935", in *Statystyka Polski C/41*, p. 15
[18] A. Przybylski (1928): "Wojna Polski odrodzonej 1918-1921r.", in H. Moscicki (ed.): Dziesieciolecie odrodzenia Polskiej Sily Zbrojnej 1918-1928, Warszawa, pp. 171-200

Once this was achieved, the next steps had to be to reconstruct what the wars had destroyed and to define the state internally, i.e. to build up those institutions which the functioning of the state machinery depended on.

The wars shattered and disorganised the country and left deep scars behind. The Polish lands had been one of the main theatres of World War I, and the fights about the borders further harmed the country. Kwiatkowski estimated that the fighting destroyed about one fifth of total national wealth.[19] Zdziechowski came to a similar conclusion when he calculated the losses at about zl 15,000 million or $ 2,900 million.[20] The new state did not receive reparation payments. These figures compare to an estimated national product of about zl 6,000 million or $ 1,200 million in 1919 and zl 14,000 million or $ 2,700 million in 1923.[21]

Table 1: REDUCTION IN LIVESTOCK
(1920 in per cent of the 1912 total)

	Horses	Cattle	Pigs
Congress Kingdom	32	4	76
East Galicia	32	25	56
West Galicia	21	6	27
Dukedom of Posnania	16	21	--
Eastern Regions	48	67	75

(Source: W. Studnicki (1930): Die wirtschaftliche und kulturelle Entwicklung des wiederauferstandenen Polens, Berlin, p. 19)

In agriculture, about 4 million hectares of arable land were put out of use. 2.5 million hectares of forest were totally destroyed and 251 million cubic metres of timber were removed by alien armies.[22] Agriculture was destroyed to an extent that, in 1919, the crops of rye amounted to only 35 per cent of the pre-war figures, wheat to only 36 per cent, potatoes to 75 per cent, and sugar beet to 34 per cent. The losses in livestock amounted to 2.8 million heads of cattle, 1.7 million horses, 0.5 million pigs, and 1.5 million sheep and goats.[23] Large towns and cities remained mainly intact, but 40 per cent of the buildings in medium towns and up to 75 per cent of buildings in small towns and villages, mainly wooden ones, were burned down. A total of 1,884,033 buildings in cities, towns, and

[19] E. Kwiatkowski (1928): "Fizyka gospodarczo-polityczna Polski", in Przemysl i Handel, op. cit., p. 3
[20] J. Zdziechowski (1955): Skarb i Pieniadz 1919-1939, London, p. 16. - A memorandum prepared by the Polish government for the Versailles peace conference estimated the total loss caused by the First World War at almost zl 60,000 million or $ 11,600 million; see "Straty wojenny poniesione przez panstwo Polskie i jego obywateli", in AAN, Komitet Narodowy Polski, p. 1187. On this basis, J. Hoensch estimated the figure for the total destruction of both the War and the following combats about the borders at zl 73,000 million or $ 14,100 million; see J.K. Hoensch (1983): Geschichte Polens, Stuttgart, p. 257. This figure is obviously too high since, in 1924, the whole national wealth only amounted to about zl 74,000 million or $ 14,300 million; see S. Janicki (1925): Majatek i Sily Gospodarczy Panstwa Polskiego, Katowice, pp. 10-15
[21] S. Janicki (1925), op. cit., p. 36
[22] J.K. Hoensch (1983), op. cit., p. 257
[23] E. Kwiatkowski (1928), op. cit., p. 3

villages was lost by fire. More than a third of the bridges, and about half of station buildings and railway workshops had been destroyed. 41,259 electric motors and engines, 3,844 machine tools and 98,000 tonnes[24] of factory equipment were removed from Poland.[25]

Of particular importance was the destruction of the railways. The Polish railways which were taken over from the German and Austrian occupants in November 1918 were in a deplorable condition from a technical point of view, with a depleted administration. The rolling stock was in an extremely bad condition and insufficient. The permanent way was in many places destroyed and the bridges that had been blown up during the war were replaced by temporary wooden ones. On many lines the station buildings and workshops had been destroyed. It was therefore necessary to start work with the greatest energy in order to remedy these evils and to organise transport of the goods and foodstuffs that were required on local markets. The government also had to arrange for the transport of troops and war material since the war was still proceeding on the eastern front. Destruction included that 41 per cent of all bridges longer than 20 metre and 22 per cent of all others had been destroyed.[26] In the eastern regions, up to 95 per cent of bridges were destroyed and an average of 70 per cent of the network. In 1919, on most railway lines, the average speed of the trains did not exceed 5km/h.[27] At the same time, the Polish railways lost through destruction and confiscation 3,051 locomotives or 55 per cent of the pre-war total, 8,206 passenger wagons or 74 per cent, and 103,110 transport wagons or 71 per cent.[28] Furthermore, the task of reconstruction also included the changing of the width of the gauge in the former Russian parts.[29]

Table 2: REDUCTION OF INVENTORY STOCK
(in Warsaw, Vilna and Stanislawów)

	1912 total	Destroyed	% of total
Railway Stations, Stops	910	574	63.08
Storehouses	986	506	51.32
Water Pump Stations	601	489	81.36
Railway Workshops	162	78	48.13
Offices, Dwelling Building	9921	2189	22.06

(Source: Ministerstwo Komunikacji (1929): Polskie Koleje Panstwowe 1918-1928, Warszawa, p. 60)

However, reconstruction advanced relatively fast in spite of or, in the case of the railways, due to the ongoing war in the East. At the end of 1920, 405,037 buildings were

[24] 1 tonne=1,000 kilogram
[25] Przemysl i Handel (1929): Zniszczenia wojenne i odbudowa Polski, Warszawa, p. 3
[26] Ministerstwo Komunikacji (1929): Polskie Koleje Panstwowe, Warszawa, p. 39
[27] J. Gieysztor (1923): "Koleje zelazne w Polsce w dobie powojennej", in *Przemysl i Handel 47*, p. 730
[28] Ministerstwo Komunikacji (1929), op. cit., p. 64
[29] For details on the railways, see "Report on the situation of the Polish railways", 7 December 1922, in PRO, FO 371, N164/164/55

recorded as being rebuilt, then 1,099,046 at the end of 1923 and 1.5 million at the end of 1927.[30] The loss in railway equipment was made good after the war through reparations from Austria, Germany and Russia directed to Poland by the Allies. Between 1919 and 1923, Poland received 4,762 locomotives, 10,379 passenger wagons, and 111,092 transport wagons.[31] The destruction of the network, on the other hand, had to be repaired by the country's own means. Since Poland did not produce steel before the incorporation of East Upper Silesia, the Polish railways had to improvise. Hummel counted that post-war Poland had 66 different kinds of tracks due to the improvised reconstruction efforts. The first new metals only arrived from Belgium in 1922 and, in 1923, Poland started its own rail industry in East Upper Silesia.[32]

In conclusion, reconstruction was among the first tasks of the new society. The role of the government in this was to grant reconstruction credits and facilitate the access to raw materials. Thus, in March 1919, the government decided to distribute free timber to small holders to help them building up their destroyed homes[33], and in May 1920, they decided to make 25 per cent of the yearly production of the Polish sawmills available for private reconstruction efforts.[34] Until the end of 1927, the state provided an estimated overall sum of $ 40.4 million in material and money to assist the reconstruction of private property. In addition, it also had the responsibility of repairing the damages of the Polish railways. Here the wars exercised significant pressure on fast improvements.[35]

The four different Polish regions[36] that were to form the Polish Republic had not shared a common development, but each of them had been integrated into the development of their former partitioning power. The different parts of Poland had formerly belonged to different entities. Thus, when they were put together, the foremost task was to unite them and reconstruct all necessary institutions to administer the new state. For this purpose, the drawing of the borders was a substantial prerequisite creating the framework for the autonomous development of Poland. A next step had then to be to gain control over the money supply to provide a basis for public finances and the functioning of the state machinery. When the Republic was founded, more than six different currencies circulated in

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[30] H. Dudek (1929): "Odbudowa kraju", in M. Dabrowski (ed.): Dziesieciolecie Polski odrodzonej. Ksiega pamietkowa 1918-1928, Kraków, p. 382

[31] Ibid., p. 69

[32] B. Hummel (1939): "Odbudowa i utrzymanie kolei", in B. Hummel (ed.): Dwudziestulecie komunikacji w Polsce odrodzonej, Kraków, p. 141

[33] *Dziennik Praw Panstwa Polskiego 20*, 1919, p. 229

[34] This was part of the system of rationing. The sawmills were compensated at the administered price. See Z. Landau, J. Tomaszewski (1967), op. cit., p. 174

[35] H. Dudek (1929), op. cit., p. 382

[36] The Kingdom of Poland, or "Congress Kingdom" that covered 30 per cent of the territory of the new Polish Republic with a population of 10.5 million, as well as the Eastern Regions, or "Kresy" with 37 per cent of the territory and a population of 4.8 million, had been part of the Russian Empire. Galicia, with 20 per cent of the territory and a population of 7.75 million, had belonged to the Austro-Hungarian Empire, and Pomerania and Great Poland or the Dukedom of Posnania, with 11 per cent of the territory and a population of 2.9 million, first to Prussia and then to the German Empire. - *Rocznik Statystyki Rzeczypospolitej Polskiej 1925*, pp. 7-11

the Polish lands, sometimes more than one in the same region. In the beginning, all of them were issued and printed outside the Polish borders and could thus not be influenced by the new Polish government. In the former Congress Kingdom, there were German marks, Polish marks and Russian rubles. In the former Prussian parts, there were German marks. In the Kresy, there were East marks, East rubles and Russian rubles. Last, in Galicia, there were crowns and different Ukrainian monetary units. On 11 November 1918, 880.2 million Polish marks[37] circulated in Poland, but MP 7,119.8 million in other currencies.[38] The Polish mark had originally been introduced by the German authorities during their occupation in 1916 with its value equal to that of the German mark. It was issued by the Polish State Loan Bank[39]. This institution, founded in 1917, now became Poland's bank of issue at the time of the country's liberation. However, as the British Economic Mission to Poland put it in their report in 1919: "The first step towards internal financial stability must be to remove the currency backing of the Polish mark from Berlin, since every political disturbance in Germany that weakened the German mark simultaneously affected the Polish mark."[40]

When the foreign occupants handed over power in November 1918, the state treasury was empty. The former rulers had taken everything with them on their departure. In order to pay for the first bills, the government decided to bring notes into circulation that had been left behind by the German authorities, stored in the PKKP. They issued these Polish marks because they lacked the means to introduce their own Bank of Issue and print their own money. Then, in March 1919, when those stocks were exhausted, the Warsaw printers were entrusted with the producing of more Polish mark. Their imprint no longer stated that they were equal to one German mark, but that the Polish state would exchange them at a later stage for a future Polish currency.[41] Plans to introduce a new and stable Polish currency as well as an independent central bank were postponed because the government knew that the printing of additional money was vital to keep the state machinery going. The statutes of the PKKP remained almost unchanged, i.e. the finance minister had the right to have recourse to the printing press for credits up to six months if counter-signed by the cabinet and the president. All other credits had to be approved by parliament. This law had been introduced by the Central Powers to finance their war machinery. Now it became the first source of revenue for the Polish Treasury. However, since the recourse to the printing press was not meant to continue forever, public finance became a constant source of problem for the young Republic.[42]

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[37] Mark polski, from now on: MP

[38] E. Taylor (1926): Inflacja polska, Poznan, pp. 22-23

[39] Polska Krajowa Kasa Pozyczkowa, from now on: PKKP

[40] British Economic Mission to Poland (1919): Report on the Economic Condition of Poland. February-March 1919, London, p. 10

[41] *Dziennik Praw Panstwa Polskiego 4*, 1919, p. 89

[42] E. Taylor (1926), op. cit., pp. 4-12

The actual need to inflate the currency was accompanied by incompetence and confusion about the economic situation of the country within the government as became evident in the attempts to unify the money stock. On 11 March 1919, the finance minister issued a decree that forbade the import of the currencies of the former partitioning powers into Poland. The aim was to restrict the amount of notes available to the general public allowing the government therewith to gain control over the money supply. Yet, with open borders an immediate result did neither occur, nor could anybody have expected it. At the same time, the law was not designed to reduce the inflationary trends sweeping over from Austria, Germany and Russia since it did not change the quality of the currencies. In consequence, the execution of another law enacted by the Sejm simultaneously with the first one would have been of more importance. Here, Finance Minister Englich made the attempt to stamp all notes in circulation with half of their nominal value. His idea was to define and restrict the money stock of the new state, while at the same time collect an extraordinary levy to enable the Treasury to meet its expenditure. Given a money supply of the equivalent of about MP 8,000 million, this would have resulted in a one time revenue of MP 4,000 million. The plan was based on the successful experience of Czechoslovakia. However, the law was cancelled by Englich's successor S. Karpinski due to what he described as being organisational difficulties. Concluding from a previous experience, Karpinski argued that this action would do more harm than good. In his memoirs, he described as an anecdote typical for the situation at the time that, when a financial delegation from Kalisz came to Warsaw in April 1919, he asked them about the revenues from a capital levy introduced in January 1919. "We do not know anything about a capital levy", was the short answer.[43] There was certainly some truth in this interpretation of the situation. The young state still lacked the organisation to execute even a seemingly uncomplicated task like this. However, the fear of revolution certainly contributed to the decision. Even an unsuccessful operation that had contributed only MP 1,000 million would have improved the financial situation of the state dramatically. Yet, it would have left one quarter of the population discontent with the fact that they had paid while others had not. Since one can assume that money holders in cities would have been the first contributors, the failed operation would have steered up industrial workers again. stirred

The next step, namely the merger of all different currencies in one, was even more difficult since every region had different levels and structures of prices, wages, taxes and tariffs. Each of the circulating currencies had a different purchasing power that again was not stable in itself, while exchange rate fluctuations resulted frequently from political reasons. Furthermore, also the psychology of the Polish population played its part in the discussion. Referring to the Austrian crown Finance Minister Bilinski described in 1919: "In Galicia, since the time of the [First] Republic, the people had always paid for their goods the same prices in crowns as the people of the Congress Kingdom in mark. On this basis

[43] S. Karpinski (1931): Pamietnik dziesieciolecia 1915-1924, Warszawa, p. 218

it was very difficult to introduce any other exchange relation."[44] And, dealing with the situation of the ruble after the eastern borders had been settled, Z. Karpinski, one of the directors of the PKKP, wrote: "In the eastern parts of the country, all the different kinds of rubles were still circulating: imperial rubles, Duma rubles and revolution rubles, and even in the former Congress Kingdom the rural population gave the prices of their agricultural produce in traditional ruble values, and the ruble was still an object of brisk trade at the Warsaw stock exchange."[45] The government feared that any decision about an exchange relation could lead to a situation where the holders of currencies other than the Polish mark would feel unfairly treated. Symptomatic for the whole discussion was the debate on the exchange ratio of the Polish mark and the Austrian crown. After long discussions in the Sejm, as well as in the press, an exchange ratio of 70 for 100 was introduced, at last. Finance Minister W. Grabski defended his case in the Sejm as:

> "We cannot decide here on the exchange rate as it will be at the stock exchange. ... but one has to determine the relation of prices of the most important goods, ... and this relation should be as correct and as just as possible. This relation of prices should be even lower than 70 [marks for 100 crowns]. If I proposed 70 nevertheless, then this is because I tried to take into account the tense situation that has arisen in one of the areas concerned."[46]

The development of money conversion was such that after the successful uprising in Posnania, the Polish mark was introduced as a parallel currency in the former Prussian parts (with the exception of the referendum areas) on 11 April 1919, and on 20 November 1919, the mark was declared the single official currency in this region. In the former Austrian parts, the Polish mark became a parallel currency on 15 January 1920, and the single official currency on 24 March 1920. The reasons for the later introduction in Galicia were the difficulty to establish an acceptable exchange relation as well as the problem to print a sufficient amount of notes in short time.[47] All other parts saw the introduction of the mark in the weeks after their respective incorporation into the Polish Republic, i.e. the eastern borderlands in 1921 and East Upper Silesia in 1923.

Monetary unification was a unique feature of the Polish development. All other European countries experiencing inflation in this period, with the exception of Yugoslavia, had had only one unit of currency and only one bank of emission (whose experience was of vital importance for the government) before the war. They also had a net of private banks that covered the whole country and ensured a regular internal capital circulation. Poland, on the other hand, had bits of three different money markets and with its financial centres being outside the country. Thus, simultaneously with the introduction of a single official

[44] L. Bilinski (1925), op. cit., vol. 2, p. 226
[45] Z. Karpinski (1971): O Wielkopolsce, złocie i dalekich podróżach, Warszawa, p. 155
[46] *Short-hand Minutes of the 207. Meeting of the Legislative Sejm* (from now on: *207. Sejm*), 8 January 1920
[47] L. Bilinski (1925), op. cit., vol. 2, p. 223

currency, it had to unify the credit system and ensure a credit flow. Most of the reconstruction of the banking system was done by market forces; as a matter of fact, banks mushroomed when inflation started to accelerate. However, they were engaged in investments in securities and real estate, rather than in the issuing of credit. Thus, three banks founded and owned by the state became of vital importance for the purpose of reconstruction: the post office savings bank (Pocztowa Kasa Oszczednosci), the National Land Bank (Panstwowy Bank Rolny) and the Bank of National Economy (Bank Gospodarstwa Krajowego). The first was founded in 1919 and modelled on similar institutions in other countries. It was intended as an outlet for small savings. They were also encouraged by the founding of communal and district savings banks that had the support of the local government authorities. The main purpose of the National Land Bank, on the other hand, which was also set up in 1919 and then reorganised in 1924, was to finance the purchase of land by small farmers and to assist them in introducing technical improvements on their farms and in paying off their debts to private creditors. The bank financed agricultural co-operatives, had a hand in selling artificial fertilisers from the state factories and administered state funds allocated to agriculture. Last, the Bank of National Economy was founded as a government credit institution in order to aid the post-war reconstruction and the industrialisation of the country. It was established in 1924 by the fusion of three local banks. Until 1927, the bank assisted all sections of the national economy before it began to concentrate on long-term investments. Most of the reconstruction work in the Polish towns that was done in and after 1924 was carried out with its assistance.[48]

The four re-unified parts also had different systems of civil, commercial and fiscal legislation, they had different tax systems, and they belonged to differing customs unions. It was a vital step for the development of the country to equalise the concerned legislation, not only to make procedures easier, but, more importantly, to secure revenues for the Treasury and to counteract speculation. The collection of taxes and the inflow of revenues from tariffs and monopolies was hampered because of prevailing uncertainty within the society and the ongoing war. Furthermore, a large part of the fiscal administration had left the country with the former rulers, so that there were not enough civil servants to collect taxes. Thus, the first governments were confronted with an empty treasury and hardly any revenues to fill it with. E.H. Young, a British advisor to the Polish government, later determined three reasons why revenues remained at a very low level even after a period of transition: First, the different tax systems in the country required that people made payments which were previously unknown to them. This also included the problem of information. A decision by parliament did not necessarily guarantee that every part of the country was consequently informed about it. Also, the Treasury had to fight with a histor-

[48] On Polish banking, see J. Taylor (1952): The economic development of Poland 1919-1950, New York, pp. 50-55; see also T. Buczkowski, H. Nowak (1929): "Rozwój kredytu w latach 1918-1928", in S. Zaleski (ed.): Bilans gospodarczy dziesieciolecia Polski odrodzonej, Warszawa, vol. 2, pp. 139-160

ically developed lack of fiscal responsibility. Traditionally in Poland, taxes were not paid by the individual until they were directly asked for. Last, the lack of fiscal administration and the inexperience of its staff were not solved until well into the 1920s.[49] In the meantime, ministers who were facing pressure from all sides came up with their own way of dealing with the lack of revenues. Former Finance Minister Bilinski recalled in his memoirs: "Every minister, often all but a specialist, but always very eager and patriotic, demanded expenses, presenting them as necessary without asking if funds were at all available. (...) The consequence was that every minister opened himself a 'bank account' at the PKKP and disposed of it with absolute freedom."[50]

Linked to these problems were those of regional jealousies. Landau was probably right when he argued that separatist economic tendencies were much stronger than political ones.[51] The level of economic development and war damage varied from province to province. That is why, in the Prussian zone, the area with the highest standard of living, there were fears related to its incorporation into the economy of poor and devastated Poland. Great Poland and Pomerania were in favour of the maintenance of separate economic systems and pressed for the establishment of a customs border between these provinces and the rest of the country. They succeeded and the border remained between 1919 and 1921. Their link with the Republic was the Ministry for the Former Prussian Provinces which was consequently set up in Warsaw. East Upper Silesia was granted similarly far-reaching economic autonomy.[52] Yet, the constant changes in the borders of the country as well as the difficulties to plan public finances in the autonomous territories added to the post-war fiscal chaos and hampered the regular collection of taxes. In November 1918, the Treasury in Warsaw only controlled the former Kingdom of Poland. By early 1919, its control was extended to the Bialystock area, in April 1919 to former Austrian Galicia, in November 1920 to the Nowogrodek region, Polesia, Volhynia and East Galicia, in January 1922 to the former Prussian provinces, in March 1922 to the area around Wilno and, last, in June 1922 to East Upper Silesia. The framework and provisional organisation of the fiscal authorities was provided by the law of 31 July 1919 that separated the fiscal administration from other administrative bodies, but the final organisation of provincial and regional Fiscal Chambers was not ready until January 1920. The organisation of the fiscal apparatus was completed with the unification law of 1 April 1925.[53]

The collection of direct taxes remained a problem for many years. The problem was ap-

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[49] E.H. Young (1924): Report on Financial Conditions in Poland, London, p. 5

[50] Ibid., pp. 240-241

[51] Z. Landau (1992): "The economic integration of Poland 1918-23", in P. Latawski (ed.): The Reconstruction of Poland, 1914-23, London, p. 145

[52] The major argument of the "Prussian" Poles in the discussions was that they as the only part of the new Republic produced a budget surplus that was a welcome contribution to the "federal" Treasury.

[53] B. Markowski (1931), op. cit., pp. 75-98

parently not so much the poverty of the masses, but the difficulties to organise a working system. The report of the British Economic Mission to Poland described in 1919: "Poland's internal financial situation is in a parlous condition. There is plenty of paper money of different kinds, but most of it is bad; because of the political insecurity an undue proportion is in the nation's stockings rather than in the banks."[54] Many people had money due to the system of rationing that had resulted in concrete under-supply at fixed prices. Since Poland was a traditional emigration country, a lot of them also owned foreign currencies that were sent to them by their relatives abroad, or which they themselves had brought with them with re-immigration. Yet, these assets were very unevenly distributed, and the government did not know, where they were and how to get hold of them.[55]

Traditionally an important source of revenues had been customs.[56] The government introduced a provisional customs tariff in January 1920. Yet, the following years saw many changes to it because in this phase of Polish development customs were more important as a tool to help to restart the economy than a source of revenue for the Treasury. An even more important loss, however, were the declining proceeds from monopolies. Before the war, they had made significant contributions towards state revenues. There had been monopolies on tobacco, salt and lotteries in Galicia, and on alcohol and lotteries in the Russian provinces. In November 1918, the first government decided that all monopolies would remain as they were until further legislation. Simultaneously, it made a first attempt to unify monopolies when it tried to introduce the monopoly on tobacco in parts of the former Kingdom. Then, on 1 June 1922, the monopoly on tobacco was extended to the rest of the country. However, it did not work properly before 1924 due to the immense costs that were involved since the process required the nationalisation of the tobacco industry. Only when the Polish government obtained an Italian loan of IL 400 million in March 1924 that was mainly intended to purchase privately-owned tobacco factories the monopoly could be put into practice. By then, also the other hampering factor, namely the lack of personnel to control the monopoly had been gradually resolved.[57] Unification seemed more difficult in the case of the taxation of alcohol that had been different in every part of Poland. It was most problematic that in the former Austrian and Russian parts nearly all alcohol producing factories had been destroyed during the war resulting in an entirely insufficient supply for the years 1919 to 1921. Illicit distillers mushroomed everywhere, and since the government lacked the means to control this development, they allowed the free trade of alcohol in a law of 1 November 1921. The monopoly that had existed in the Congress Kingdom before the war was only reintroduced and extended to the rest of the country on 31 July 1924, with effect from 1 January 1925.

[54] British Economic Mission to Poland (1919), op. cit., p. 4

[55] C. Bobinska, A. Pilch (1975): Employment-seeking Emigration of the Poles World-wide, XIX and XXc, Kraków, pp. 119-120

[56] For detailed statistics on the pre-war budgets, see chapter IV.

[57] "Annual Report for 1924", in PRO, FO 371, N5966/5437/55; see also J. Golebiowski (1985): Sektor panstwowy w gospodarce Polski miedzywojennej, Warszawa, pp. 62-64

However, as with the tobacco monopoly, it only worked successfully after another one or two years.[58] The unification of monopolies was of major significance since they became one of the most important sources of revenue for the treasury. Once they worked properly, they amounted to about 30 per cent of total revenue.[59]

In conclusion, the establishment of state institutions started with the installation of Pilsudski as the provisional head of state in November 1918 and the elections of the constitutional assembly at the beginning of 1919. Yet, then a major impulse was given by the wars about the borders which exercised pressure to build up an army to fight the wars, to have an own currency and a working tax system to finance them, to provide infrastructure and introduce a system of rationing to supply them, etc. Another important point was that the leadership structure became better defined and accepted due to the need for discipline and decision-making which the wars involved. However, these first institutions comprised much improvisation. Thus, the next phase between 1921 and 1923 became of equal importance when their quality was improved. The administration can be said to have worked properly from 1922. Then, the unification of the different parts of the country, including the incorporation of East Upper Silesia, was completed in 1922/23, and, last, the worst destruction was made good by 1923. The only major institutional problem that remained was that of state finances. It was only solved in the stabilisation of 1924 which brought an end to inflation.

THE ECONOMIC POTENTIAL

> "Poland has the population of an industrial country and the economic structure and degree of industrialisation of an agricultural country."[60]

The young Polish Republic was confronted with the difficult task to achieve physical, political and economic reconstruction simultaneously. The reconstruction of state institutions was only part of the overall assignment. The success of the reconstitution of Polish statehood also depended on a development programme that would help the country to become economically self-sufficient. The country had to overcome the problem that during the process of industrialisation, the most crucial period for the development of the modern state, Poland had been divided. Its industry, trade, transport system and finances could only be understood as parts of the economic systems of Austria, Germany or Russia, respectively. Since the different Polish areas had shared in the development of a regional division of labour of the surrounding empires, their economic structures did not fit

58 J. Golebiowski (1985), op. cit., pp. 64-65
59 *Maly Rocznik Statystyczny 1939*, p. 371
60 Finance Minister H. Strassburger, July 1941, quoted in J. Taylor (1952), op. cit., p. 29

together. Zweig described the problem as: "They did not constitute a unity in the sense that they had been developed after an organised pattern by constant adaptation and mutual testing."[61] There were almost no economic links between them since their traditional markets were outside Poland. Trade between them amounted to only 8.2 per cent of all imports in 1914.[62] The disintegration of the Polish lands was particularly apparent in the railway network. The first railways had only been introduced after the Polish partitions, namely in 1834 in the Russian provinces, in 1845 in Pomerania and Great Poland and in 1847 in the Austrian part. For 70 years they had been developed entirely independently from each other, and their respective networks had been integrated into that of their partitioning power. No one had prepared for the context of a unified Poland. Thus, Galicia had eight links with Austria, but only two with Congress Poland. More than 50 German and Austrian lines went to the former Russian border, but only ten continued on the other side. The same applied to roads and developed waterways. There was almost no linking infrastructure.[63] At the same time, the level of civilisation of the partitioning power had influenced, or even determined, the level of civilisation of its Polish part. Thus the backwardness of Imperial Russia, for example, had had a major impact on the development of the Congress Kingdom and the Eastern borderlands. These parts, which together covered about 80 per cent of the territory of the new Poland, did not know urban self government, roads and railroads were insufficient, agriculture was backward and unstructured, and the industrial know-how was very limited. Thus, the integration of the Polish lands also had to take regional developments into account. In consequence, there was a need for an economic programme that could help to unite the different parts in one economic organism as well as evolve its potential. Such a programme was particularly urgent since trade relations with the market areas of the partitioning powers had naturally been severely curtailed.

The part most important for the economic development of the Republic was the former Congress Kingdom since almost one half of the Polish population lived there. This province was mainly agricultural with some industrial islands, namely textiles in Lódz, mining and heavy industry in the Dabrowskie region, textiles, engineering and foodstuffs in Warsaw and again textiles in Bialystock. The process of industrialisation had started in the 1860s and then accelerated around the turn of the century. The markets for textiles and heavy industry had been protected by high duties which ensured that most of the production could be sold to other parts of the Russian Empire as a part of a regional division of labour. At the beginning of World War I, the Congress Kingdom had reached the state of a peripheral country.[64] In Galicia, on the other hand, the competition with Czech and

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61 F. Zweig (1944), Poland between two Wars, London, p. 13

62 Ibid., p. 13

63 Ministerstwo Komunikacji (1929), op. cit., pp. 1-2

64 Peripherality is normally defined as a state of economic weakness relative to one's trading partners. Typical features are for example, a high proportion of employment in agriculture, greater unemployment and underemployment, a higher proportion of sensitive sectors and of small and marginally efficient firms.

Austrian products had restricted the industrialisation process and had left this part of Poland almost exclusively agricultural. Its main industrial potential was some coal and petroleum. The same was true for Great Poland and Pomerania with the difference, however, that in the former Prussian parts agriculture was much more advanced and most farms were run on a commercial basis. The level of industrialisation was much higher in Teschen Silesia that had coal and iron as well as its own textile industry. Yet, the most advanced province of the Polish Republic was to become East Upper Silesia with its huge potential of coal, iron and steel as well as some light industry. Last, the Kresy were not industrialised at all and farming was still very primitive. Zarnowski is probably right in arguing that the Polish Republic as a whole was on the level of a peripheral country before the war.[65] This thesis is supported by estimates that industry had a share of between 28 and 40 per cent in the national product while agriculture contributed 48 to 57 per cent.[66]

Table 3: POLISH OCCUPATIONAL STRUCTURE. 1921 and 1931
(per cent of total population)

	1921	1931
Agriculture	63.8	60.9
Mining and Industry	17.2	19.2
Trade	6.2	5.9
Transport	3.4	3.6
Public Administration	3.7	4.1
Domestic Servants	1.1	1.4
Others	4.6	4.9

(Source: *Maly Rocznik Statystyczny 1931*, p. 10)

Table 3 shows that about two thirds of the Polish population still made their living in the agrarian sector while less than a quarter was engaged in industry and trade. The main problem of modernisation and the starting point of the construction of a national economy was therefore a solution to the structural deficiencies of agriculture. Linked to this problem was also that of education. In 1918, about 40 per cent of the Polish population were still illiterate.

Table 4: ILLITERACY IN POLAND. 1918
(per cent of recruits born in 1900)

Congress Kingdom	Kresy	Prussian Part	Austrian Part
36.0	48.5	0.1	6.4

(Source: J. Weinfeld, E. Szturm de Sztrem, J. Piekalkiewicz (1924): Atlas statystyczny Polski, Bydgosc,

However, the emphasis is here on being part of a more developed region with the beginning of convergence.

65 J. Zarnowski (1992): Polska 1918-1939. Praca-Technika-Spoleczenstwo, Warszawa, pp. 14-18; see also Z. Landau, J. Tomaszewski (1985): The Polish Economy in the Twentieth Century, London, pp. 15-21

66 Z. Landau, J. Tomaszewski (1977): Druga Rzeczpospolita, Warszawa, p. 68

vol. 1, p. 3)

The self-sufficiency of Polish agriculture had been an object of discussion even before World War I. Although the problem was difficult to quantify due to the lack of data, there seemed to be a consensus among scholars that, while the Prussian part produced more foodstuff than it consumed, the Congress Kingdom and Galicia had a negative balance and had to rely on the delivery of grain and flour from Russia or Hungary and Rumania respectively. According to calculations by Rose, the Russian and the Austrian parts had a yearly consumption of about 6.9 million tonnes of grain and an actual deficit of about 1.1 million tonnes before the war. At the same time, the Prussian part produced a surplus of about 0.6 million tonnes.[67] There are no estimates for the Kresy, but it can be assumed that they made good what the other parts lacked. In an average year, the new Poland would have probably had a balance in grain and surpluses in potatoes and sugar beet. Thus, after the end of the wars about the borders and the repair of war destruction the new state would have been able to nourish itself from its own resources. Until then, however, Poland would had to rely on grain imports or a reduction of consumption.

Table 5: PRE-WAR PRODUCTIVITY OF POLISH AGRICULTURE ACCORDING TO REGION
(tonnes per hectare)

	Wheat	Rye	Barley	Oat	Potatoes
Congress Kingdom	1.22	1.04	0.94	1.15	9.29
Kresy	0.98	0.76	0.78	0.80	6.64
Prussian Part	2.08	1.72	1.81	2.02	14.43
Austrian Part	1.21	1.20	1.17	1.23	11.74
Poland	1.26	1.12	1.03	1.19	10.31

(Source: Calculations based on *Rocznik Statystyki Rzeczypospolitej Polskiej 1923*, p. 41)

Yet, Polish agriculture still had a huge potential. There was significant variance in productivity over the different provinces as table 5 shows. This divergence cannot be explained by differences in soil alone since their extent was similar for all crops. The more important reasons seemed to be the organisation of farms as well as the machinery, tools and fertilisers they used. The Polish tradition of real partition, i.e. the equal distribution of land between all heirs which was complimented by the Russian agrarian reform of 1864 had resulted in the breaking up of the grounds into dwarf-holdings. Table 6 shows that almost two thirds of all Polish peasants, i.e. half of the peasants in the former Congress Kingdom and eight out of ten in Galicia, owned holdings of less than 5 hectares. While their holdings covered less than 15 per cent of all arable land, more than half was owned

[67] E. Rose (1922): <u>Bilans gospodarczy trzech lat niepodleglosci</u>, Warszawa, pp. 13-15; for a balance sheet of the production and consumption of the Congress Kingdom, see also H. Tennenbaum (1916): <u>Bilans handlowy Królestwa Polskiego</u>, Warszawa

by a handful of landowners who disposed of more than 50 hectares. Most of these small farms were self-sufficient. Yet, a large majority of farms below 5 hectares were of a natural type, especially those in the East. They had practically no links with the market and their owners paid no taxes. Farms that owned between 5 and 10 hectares obtained a small surplus that went to the market and enabled them to pay taxes as well as to purchase some basic industrial goods, but it was hardly possible for them to secure any funds for investments. Only holdings of about 15 hectares and more could be run on a commercial basis. This was one of the reasons of the better performance of agriculture in the former Prussian provinces where 88.6 per cent of farms disposed over more than 10 hectares compared to a Polish average of 68.7 per cent.[68]

Table 6: LAND AND OWNERSHIP ACCORDING TO REGION. 1921
(per cent of farm and land total)

	Farms				Land			
	0-5	5-10	10-50	>50	0-5	5-10	10-50	>50
Congress Kingdom	51.8	31.5	15.9	0.8	12.8	22.3	24.6	40.3
Kresy	48.9	32.9	17.2	1.0	9.5	15.8	18.6	55.1
Prussian Part	57.7	14.0	24.4	2.9	4.8	6.6	30.6	58.0
Austrian Part	79.9	15.3	4.3	0.5	27.7	17.2	12.0	44.0
Poland	61.6	24.7	12.8	0.9	14.0	17.3	20.6	48.1

(Source: Z. Landau, J. Tomaszewski (1967): W dobie inflacji, Warszawa, pp. 144-149

Another reason was the different levels of development. Progress in agriculture went from the West to the East. While most farms in the former Prussian provinces worked a multi-field system or crop rotation, many farms in the Kresy still used the two-field system; and while the first steam-engines began to replace horses in the West, most farmers in the East had to rely on their own hands. In 1920, there were still farms in the Kresy of 1,000 hectares that did not have a single machine.[69] The same applied to most tools as well as the use and quality of fertilisers. In the Western provinces, even many peasant farmers had access to advanced equipment since they could work on commercial farms in exchange for the usage of tools. All these differences were due to the relatively higher advancement of Germany compared to Russia, i.e. an advanced machine building industry, an extensive infrastructure, better access to information, etc.[70] This coincided with a further hampering factor for the development of agriculture, namely the overpopulation of the countryside. Poland suffered from a form of unemployment known as "disguised unemployment". Given the small average size of land and the low productivity in most provinces, it seems consequent to argue that most areas could have produced the same output with a much smaller labour force. However, lack of capital for domestic industry combined with a lack of sufficient emigration opportunities tended to keep the surplus

[68] M. Mieszczankowski (1960): Struktura agrarna Polski miedzywojennej, Warszawa, pp. 339-340
[69] O. Lehnich (1923): Währung und Wirtschaft in Polen, Litauen, Lettland und Estland, Berlin, p. 73
[70] J. Zarnowski (1992), op. cit., pp. 25-29

population on the land at bare subsistence levels. This part of the workforce had no share in the creation of wealth, but consumed the returns. Thus, they restricted the chances of the small and medium-size farms to accumulate capital and, therewith, hampered or even prohibited technical progress. Ludkiewicz estimated the surplus labour as about two million people.[71] In conclusion, the significant regional differences in the productivity of Polish agriculture showed that there was a huge potential for progress.

In contrast to agriculture, the structural problems of Polish industry were much more complex. Since Poland had not been developed after a logical pattern, the Polish economy did not form an entity. It was entirely unstructured. The industry that was concentrated in the western and central districts neither constituted a market nor a source of supply for eastern Polish agriculture. Furthermore, it was characteristic for existing Polish industry that the manufacturing branches had no basis for raw materials in the country, while on the other hand manufacturing capacities for existing raw materials, of which there were plenty, were rare. In other words, Polish industry was dependent on imports of raw materials, on the one hand, while, at the same time, it was able to export other raw materials that were not treated. The reason for this development was that the former Prussian parts had constituted a raw material supplying agrarian hinterland of western and middle Germany with no basis in heavy industry, while the industrial islands of the former Russian parts, on the other hand, were production centres of consumption goods that were dependent on the supply of machines, tools, but also raw materials, from abroad.[72] During the partitions, the Congress Kingdom had specialised in coal mining and textile manufacture producing mainly for the Russian market and in particular for the Russian army. The Kresy had been agrarian with only meagre links to the markets. Great Poland and Pomerania had above all supplied the German Reich with foodstuffs, i.e. sugar in particular. The former Austrian part had begun to exploit its petroleum occurrences as well as its coal. Last, only Upper Silesian industry had been more advanced with a special emphasis on heavy industry, namely coal, iron and steel, but also some paper mills and cellulose factories. As a consequence of the inter-regional division of labour at the time of the partitions some important industries were particularly poorly developed or even not developed at all. Thus Poland lacked an armament industry, while the machine building industry as a whole was of a very low standard. Also the chemical and electromechanical industries that were the branches that in the western countries had resulted from the scientific-technical progress in the last quarter of the nineteenth century, were hardly existing in Poland. In the Polish process of industrialisation, the great landowners had concentrated their efforts on corn mills, sugar refineries, paper mills, distilleries, sawmills, brick-

[71] Z. Ludkiewicz (1932): Podrecznik polityki agrarnej, Warszawa, vol. 1, p. 88. Meyer's research came to a similar conclusion; see H. Meyer (1980): Standortverteilung der Produktion und regionale Wirtschaftsstrukturen in Polen vor 1945, Frankfurt/M., p. 367

[72] H. Meyer (1980), op. cit., p. 335. Meyer gives a very good account of the structural short-comings. However, I disagree entirely with the conclusion he derives from these facts, namely that Poland had no chance for further industrialisation, even if given time.

and glassworks, while large-scale industry mainly invested into coal-mining, iron and steel production as well as into textiles. In 1931, still about 75 per cent of the Polish industrial workforce were engaged in the above named sectors.[73]

The question of the self-sufficiency of Polish industry had not been a problem before the war. That is why the coal occurrences in the Congress Kingdom had not been fully exploited. The necessary investments would have not paid off in a market that was already sufficiently supplied. In consequence, the former Russian provinces of Poland had produced only 6.8 million tonnes of coal in 1913 while experts estimated the annual potential as between 16 and 22 million tonnes.[74] At the same time, the former Austrian part had produced 2.2 million tonnes and East Upper Silesia 31.8 million tonnes.[75] The demand of coal in 1913 was estimated as about 18 million tonnes without East Upper Silesia and 22 million tonnes with it.[76] Therefore, Poland would have been a coal importer without the Silesian coal mines, with a potential for self-sufficiency however, yet there was a large surplus for exports once this province was incorporated. The situation was similar for Polish iron ore. The potential of Polish iron ore had not been fully exploited due to the much lower price of Russian minerals. Although Poland had been one of the main centres of smelting of iron ore, the raw material had stemmed to a large extent from Russia. In 1911, the Congress Kingdom had mined 260,000 tonnes, but smelted 710,000 tonnes. Upper Silesia, on the other hand, had the raw material, but only an insufficient number of furnaces. That is why Poland had to import coke and minerals until the incorporation of Upper Silesia, but was able to export iron thereafter.[77] The only raw materials that Poland comprised to a sufficient extent even without Upper Silesia were petroleum and wood. Poland delivered 1.1 million tonnes of petroleum in 1913 while its consumption can be estimated as below 0.8 million tonnes.[78] The Polish woods covered a territory of 7.9 million hectares growing by about 21 million cubic metres of wood *per anno*. This corresponds to a Polish pre-war consumption of about the same level. Hence, Poland was self-sufficient in wood, but could have easily increased its production by exploiting the woods in excess of natural growth.[79]

Most important for Polish industry had been textiles. Before the war, 53 per cent of all industrial workers had been occupied in this branch. Only one third of its produce had

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[73] H. Meyer (1980), op. cit., p. 335
[74] On the discussion about the coal potential, see O. Lehnich (1923), op. cit., pp. 85-89
[75] *Rocznik Statystyki Rzeczypospolitej Polskiej 1920/22*, vol. 2, p. 132; *Rocznik Statystyki Rzeczypospolitej Polskiej 1923*, p. 46
[76] O. Lehnich (1923), op. cit., pp. 83-85
[77] Ibid., pp. 92-93
[78] The estimate is based on the average consumption of 1923-1926 when industry had reached more or less its pre-war level; see *Rocznik Statystyki Rzeczypospolitej Polskiej 1927*, p. 317. They coincide with Polish estimates given in a memorandum prepared for the Economic and Financial Section of the League of Nations by the Polish government on "L'industrie petroliviére en Pologne", August 1922, in League of Nations Archive, Genève, Switzerland (from now on: LN), 10/22984/3064
[79] See "Forets, industrie et trafic du bois en Pologne", August 1922, in LN, 10/22984/3064; see also W. Baranski (1928): Kwestja drewna w Polsce, Warszawa, pp. 82-84

been consumed within the country's borders while two thirds had been "exported", particularly to other Russian provinces. Even though the home market had increased after 1918, there was still a significant potential for exports.[80] The same applied to sugar production. In 1913, the Polish lands had produced 0.7 million tonnes of sugar, one third of which had remained in the country while two thirds had been "exported", particularly to other parts of the German Reich.[81] Lastly, cement was another good that had been produced in excess of its need within the country, although on a much smaller scale. Before the war, Poland produced an average of 612,000 tonnes *per anno*, but consumed only about half of it. The production capacity was even higher than the annual product, namely about 1.2 million tonnes.[82] Poland had thus three major commodities apart from raw materials that it could trade on the international market. Yet, first of all, the production of these goods required the purchase of raw materials abroad. Until the incorporation of East Upper Silesia, all industries were dependent on the purchase of coal from abroad. Furthermore, the textile industry also needed to import cotton and wool. Thus, their positive contribution towards the trade balance was influenced by the raw material prices as well as wages, customs and transport. However, after the incorporation of East Upper Silesia, Poland had most commodities that it needed to satisfy the basic needs of its population within the country, some of which it produced in excess of its needs to allow for the import of other goods from abroad. Imports were needed for most investment and consumption goods.

Yet, the war had caused serious destruction. The acreage of grain was reduced from 8.7 million hectares to 6.6 million, i.e. by about 24 per cent.[83] Furthermore, due to the lack of a chemical industry and the difficulties in obtaining foreign currencies, the use of fertilisers decreased from 63 kilograms per hectare to 0.4.[84] In consequence, the production of grain decreased from an average of 12 million tonnes before the war to 5.2 million in 1920.[85] The trend was similar for all foodstuffs. Sugar production, for example, decreased from 652,390 tonnes in 1913/14 to 96,320 tonnes in 1919/20.[86] Thus, the prevailing conditions induced on Poland to import foodstuffs between 1918 and 1921 as well as reduce consumption by a system of rationing. It was only, after the wars with Russia and the Ukraine and the consequent gain of fertile grounds in the East complimented by the exceptionally good harvest of 1921 that Polish agriculture became self-sufficient. However, since agricultural production is always closely dependent on the weather, self-

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[80] A. Jackowski (1922): Zycie gospodarcze Polski, Warszawa, p. 25

[81] J. Sakowicz (1926): "Obecny stan cukrownictwa polskiego", in *Przemysl i Handel 20*, pp. 683-684; *Rocznik Statystyki Rzeczypospolitej Polskiej 1923*, p. 51

[82] Z. Pietkiewicz (1925): "Przemysl cementowy", in *Przemysl i Handel 14/15*, pp. 427-429

[83] E. Rose (1922), op. cit., p. 21

[84] W. Ponikowski (1929): "Charakterystyka wytwórczosc rolnej w Polsce", in S.L. Zaleski (ed.): Bilans gospodarczy dziesieciolecia Polski odrodzonej, Warszawa, vol. 1, p. 131

[85] Congress Kingdom, West Galicia and the former Prussia provinces, i.e. yet without Upper Silesia and the Easter borderlands. - Z. Chrzanowski (1928): "Polska produkcja zbozowa", in Przemysl i Handel (ed.): 1918-1928. Special Issue, Warszawa, p. 322

[86] W. Fabierkiewicz (1924a): Polska w liczbach, Warszawa, p. 48

sufficiency in general does not imply that it was achieved for every year. Polish agriculture needed further improvements in output to guarantee its independence from food imports as well as improvements in its storage capacity to allow for the administration of surpluses.

The general state of Polish mining and industry after World War I was not any better than that of agriculture. In consequence of destruction, the loss of markets, as well as the problems of transport and the purchase of raw materials, output had fallen significantly compared to the pre-war level. The cement and textile industries seem good examples to illustrate the different aspects of the situation. The raw materials needed for the production of the first were available in the country. Thus, the main problems were war destruction and transport, but also working capital. In spite of an increased demand, output of the Polish cement industry fell by 77 per cent. At the same time, productivity decreased by 51 per cent.[87] The situation of the textile industry, on the other hand, was aggravated by the fact that it was particularly dependent on the supply with raw materials. Here, output reached only 17 per cent in 1919 compared to the corresponding 1913 figure, while productivity decreased by 50 per cent.[88] In April 1920, still only 40 per cent of the pre-war number of cotton factories, and 19 per cent of wool factories were operated.[89]

Table 7: OUTPUT-INDEX FOR SELECTED BRANCHES. 1919
(1913=100)

Sugar	Hard Coal	Iron Ore	Paper	Cement	Textiles
15	57	28	17	23	17

(Sources: W. Fabierkiewicz (1924a): Polska w liczbach, Warszawa, pp. 48, 53; *Rocznik Statystyki Rzeczypospolitej Polskiej 1920/21*, vol. 1, p. 132; J. Dabrowski (1922): "Rzut oka na stan przemyslu w Polsce w r. 1921", in *Przemysl i Handel 11*, p. 167; AAN, Paderewski, t. 518, k. 2)

There were also problems in steelworks. The Congress Kingdom had had 11 blast-furnaces and 34 open-hearth furnaces in 1913. In 1919, none of them was operating due to destruction. Iron production was only started again on a small scale in 1920 when output reached 42,600 tonnes compared with 418,400 tonnes in 1913.[90] The mining of iron ore decreased from 330,000 tonnes in 1913 to 92,800 tonnes in 1919, while the mining of hard coal was reduced from 8.8 million tonnes to little under 5 million tonnes.[91] Simultaneously, productivity fell by 46 per cent.[92] The figures show that in addition to a signifi-

[87] J. Dabrowski (1922a): "Rzut oka na stan przemyslu w Polsce w r. 1921", in *Przemysl i Handel 11*, p. 167

[88] Calculations based on AAN, Paderewski, t. 518, k. 2

[89] W. Zawadzki (1929): "Wytwórczosc", in M. Dabrowski (ed.): Dziesieciolecie Polski odrodzonej. Ksiega pamietkowa 1918-1928, Kraków, p. 885

[90] *Rocznik Statystyki Rzeczypospolitej Polskiej 1920/21*, vol. 1, p. 133

[91] Ibid., p. 132

[92] A. Olszewski (1929): "Górnictwo w Polsce niepodleglej", in S.L. Zaleski (ed.), op. cit., vol. 1, p. 325

cant fall in output, productivity decreased as well. The latter can be explained partly by the introduction of the eight-hour working day. More important, however, were the wars and the consequent reduction of skilled labour as well as the necessity to remove destruction by the companies' own means, problems with the supply of raw materials, but also problems with general discipline. The number of strikes was very high in the first years after World War I. The overall situation only began to improve after the end of the Polish-Russian war. Until then, raw materials tended to be distributed to the suppliers of the war, and transport capacities were directed towards the front, while skilled workers had to wear uniforms and fight far from their factories. As a memorandum prepared for the British Foreign Office explained:

> "The different economic conditions prevailing in Poland, the different character of the population, labour difficulties, unrest in Congress Poland caused by privation and fanned by Bolshevik propaganda, administrative inexperience, and a state of war with four countries all combined to create a situation of overwhelming difficulty. It is therefore not surprising that during 1919 the country made little progress towards economic recovery. Legislation interfered in many ways with the development of industry and export trade, and as the country had been drained of everything, importation began on a large scale."[93]

For a short period, towards the end of 1919, conditions began to improve, and it was hoped that 1920 would be the beginning of a more prosperous era. Certain quantities of raw materials had arrived at Lódz, paid for by American relief credits, that enabled the mills there to increase their output. In other industries the refitting of the plants which had been evacuated by the Germans had been completed and it became possible to increase production. Great expectations were entertained in the spring when the Polish and Ukrainian armies started their advance on Kiev, as it was hoped that Poland might find a market for its goods; but this state of things was only of short duration. The first visible progress was only made after the end of the Polish-Russian war in 1921.[94]

The most important obstacles for the process of reconstruction were the lack of coal, transport facilities and working capital. The whole of Europe experienced a crisis of coal in the aftermath of World War I due to war destruction in France, the revolution in Germany and labour unrest elsewhere. In this period, world market prices increased significantly. This, in turn, restricted the Polish consumption of coal and, thus, further obstructed the reconstruction efforts. Before the war, Poland had consumed about 20.8 million tonnes of coal.[95] Yet in consequence of the destruction of the Polish mines and the lack of capital for imports on a large scale, the new Republic had to restrict its consumption to 7.2 million tonnes in 1919[96] and to 9.8 million tonnes in 1920[97]. In consequence,

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[93] "Economic Report on Poland for 1920", 20 June 1921, in PRO, FO 371, N7125/4490/55
[94] H.H. Fisher (1928): America and the New Poland, New York, pp. 161-171
[95] K. Czerski (1920): "Kryzys weglowy w Polsce w roku 1919", in *Ekonomista 2*, p. 95
[96] Ibid., p. 99
[97] J. Kramsztyk (1921): "Bilans weglowy za r. 1920", in *Przemysl i Handel 11*, p. 146

there was a significant under-supply of coal. Although industrial production was on a lower level in 1919 than before the war and therefore less coal was needed, repair works, the war in the East and the construction works on the Polish railways compensated for much of the reduced demand. The Public Coal Office calculated at the time, that only about 32.5 per cent of the coal demand of Polish industry could be met in 1919 and 44.5 per cent in 1920. These figures are further illustrated by the fact that 325 industrial plants had to be closed down due to the lack of coal, while another 650 were seriously obstructed. In Lódz alone, 15,000 workers were put out of work in consequence of the resulting reduction in production.[98]

Transport was the other major problem. The Polish railways were not only in a deplorable condition from a technical point of view, with a rolling stock that was in an extremely bad condition and insufficient, but even without war destruction the existing lines would have not been able to link the various markets. The problem of infrastructure was of particular importance for Poland because of the disintegration of its lands. Industry was dependent on the delivery of raw materials from abroad while wood, textiles and an increasing variety of other products had to be transported out of the country. If Poland wanted to increase exports and open up new markets, it had to begin with concentrating on railway development in order to create the necessary framework. It was therefore necessary to organise the transport of the goods and foodstuffs that were required on local markets.[99]

A further problem was that of initiative. The socialist tendencies of the first government destroyed much initiative among industrialists. Many factories that lay idle at the time, particularly those with German or Austrian owners which had been left behind, were not reopened by their proprietors because of the threat of nationalisation. This left the government with the task of taking them into the direction of the state in order to give work to the unemployed and increase production. In spite of the announced plans, these firms were not nationalised, but in most cases given back to their owners after 1920.[100] Moraczewski's successor Paderewski and his economics minister Hacia tried to reverse the first trends and appease the industrialists, but with the lack of initiative, the limited scope of action and the wars, they did not succeed.[101] The consequences of this policy were summarised in a report prepared for the British Foreign Office:

> "Generally speaking, the fiscal policy of the Government has shown a radical tendency. During 1919 various concessions were made to the parties of the Left which, when put into practice, proved detrimental to the most vital economic in-

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[98] E. Rose (1922), op. cit., p. 32; for more details (and an English summary of the problem), see also Ministerstwo Przemyslu i Handlu (1922): Panstwowa Gospodarka Weglowa w Polsce 1918-1921r, Warszawa, pp. 144-151

[99] J. Gieysztor (1929): "Stan, praca i znaczenie kolei zelaznych w Polsce", in S. Zaleski (ed.), op. cit., vol. 2, p. 1

[100] J. Golebiowski (1985), op. cit., pp. 12-13

[101] See, for example, *Minutes of the Meeting of the Council of Ministers for 21 January 1919*, in AAN, Protokoly pos. Rady Ministrów (from now on: PRM) 5, p. 251

> terests of the country, such as restriction on export, the Agrarian Reform Bill, the Bill for the Nationalisation of Forests, and the control of various branches of trade by Government departments. Owing to this policy of the Government and the difficulties created thereby it became practically impossible to establish close business connections between Poland and foreign countries, and to induce foreign capital to sink investments in Poland. In the course of 1920 this radical policy was gradually modified, and larger scope was given to private initiative and to trade with foreign countries, both export and import."[102]

Unfortunately, these first trends were complimented by obvious mistakes due to the inexperience of the new political establishment. Thus, for example, the high duties on industrial enterprises went a long way towards making the situation worse. The taxes on certain enterprises were twice as high as the value of the enterprise itself.[103] Furthermore, the situation was aggravated by increases in the real costs of production. Moraczewski had introduced the eight-hour working day as well as the right to strike. This resulted in a rise in the price of labour. At the same time, raw materials and transport capacity were scarce and their prices would therefore have to increase if the government did not decide to subsidise them. Another problem was the system of rationing that the partitioning powers had introduced during World War I when production had fallen while, simultaneously, the state had had to provide sufficient supply of the army. For the same reason, the young Polish Republic was unable to abolish the system since warfare continued. Rationing had to secure that all basic goods remained in the country and were not exported, while resources that were important to the war machinery could be directed there. Particularly in the former Austrian and Russian territories, most goods were affected by the administration of prices and distribution: Coal, cement, wood, railways for the transport of troops and supply, foodstuffs and textiles for the soldiers, etc. The consequence for both industrial and agricultural production, however, was that initiative dropped due to the relatively low prices that were paid for some of the goods. Thus, a farmer would be tempted to produce just for his own consumption and not for the market anymore since the additional work would not pay out. In this situation, the state had to grant subsidies and provide credit if it was to ensure fast reconstruction.[104]

In 1919, the state had a twofold reason to interfere in Polish production: On the one hand, there was the economic need. Only the return to the pre-war level of production seemed to promise the chance for the economic self-sufficiency of the Polish Republic. On the other hand, however, there were also the political reasons of hunger and the threat of revolution. In 1919, the question of how to jump-start industrial reconstruction was at the core of all meetings of the Council of Ministers. Various public works, like for instance the improvement of water ways, were discussed to bring unemployment down and in-

102 "Annual Report on Poland for 1920", 18 March 1922, in PRO, FO 371, N2900/2900/55

103 "General Political and Economical Situation in Poland", 3 November 1920, in PRO, FO 371, N2079/363/55

104 For a more detailed account of the system of rationing, see J. Tomaszewski (1965): "Handel reglamentowany w Polsce 1918-1921", in *Zeszyty Naukowe SGPS 56*, pp. 6-39

crease demand for Polish industry, but then cancelled due to the lack of money.[105] Yet, the discussions continued throughout the year. Ultimately, the war with Russia became the first important impulse to industry when fighting intensified between the end of 1919 and the beginning of 1920. It secured employment and demand for all goods that were required by the army. The state became the most important customer in the market. At the same time, the government gave subsidies and cheap credits to those industries that were involved in army supply, i.e. mining and heavy industry as well as food, textiles and cement. Although the companies remained in private hands, they were mainly financed by the state. It was a policy that allowed for returns without risk and can thus be regarded as a development programme funded by public means.[106] However, the resulting first boom in industry was curtailed by the shortages of transport and coal. This deficit was only to be overcome after the army reduced its need for transport capacity after the war, while exports increased that earned foreign currencies and allowed for the import of coal.

In conclusion, until 1921 the state was needed just about everywhere. As long as the wars lasted, the economy was subjected to special conditions and the government was the main organiser. The battles only ended in the autumn of 1920 and peace was concluded in April 1921. Only then the soldiers were sent home and the system of rationing was gradually abolished. Yet, it remained for food. Food imports on a large scale were still needed until the autumn of 1921 when Polish agricultural production became self-sufficient for the first time. In this period, it was the government's task to organise the necessary funds and subsidise food due to the starvation in the country-side. Yet, once the wars were over and the East was won, agriculture became self-sufficient. The development of industry was a much more complex problem since Polish industry was unstructured, partly destroyed, and there was no private initiative to reconstruct it. In the initial stage, the government which had no clear plan made things actually even worse. Then, however, the wars provided a new market and attracted initiative. They allowed for high profits which compensated for the lack of capital, and thus they ultimately jump-started production and supported the integration of the markets. They helped to overcome the initial dead-lock.

THE ECONOMIC DEVELOPMENT

> "During the three years of my residence in this country general conditions have grown steadily better; the streets of Warsaw, the shops, the people, the theatres, the restaurants, the motor-cars

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105 See, for example, *Minutes of the Meeting of the Council of Ministers for 6 June 1919*, in AAN, PRM 6, pp. 629-635

106 The fact of the stimulating effect of war was recognised by the government. The ministers seemed pleased that the decision about this programme was not really theirs. Now, in the emergency situation they did not have to care about money anymore. See *Minutes of the Meeting of the Council of Ministers for 22 September 1920*, in AAN, PRM 2, p. 4

and carriages present a very different appearance from what they did when I arrived here in January 1921, six months after the Bolsheviks had been turned away from the gates of the capital. Throughout the country much of the ruin caused by the invaders has been made good; over 800,000 buildings, it is said, have been rebuilt, and the general air of prosperity of the peasants is one of the striking features of the countryside; the railways are immensely improved, though they are run at a heavy deficit; and altogether much excellent work has already been done in the way of economic reconstruction."[107]

After the wars, the government reduced its interventions in the markets and contracts to industry. It gradually abolished both the system of rationing in the first half of 1921 and export restrictions from mid-1921. Only the international trade with basic foodstuffs remained limited in order to ensure a sufficient supply of the Polish population. The government hoped that with these steps private demand would replace state contracts and increases in exports would become a locomotive for further growth and reconstruction.[108] Now, direct government intervention diminished in line with the general trend to return to a free market economy, although the state continued to grant inexpensive credits that can be regarded as subsidies since the value of the repayments depreciated rapidly during the inflation.[109] The government gave MP 50 million or $ 3.4 million as credit to trade in May 1919, another MP 200 million or $ 3.2 million in December 1920 and MP 4,000 million or $ 2.8 million in July 1923.[110] At the same time, industry was granted credits at the central bank for about $ 76 million.[111] This liberal economic policy remained unchanged until the end of inflation in January 1924.

Once the state had been established, the government saw its most important task in jump-starting the economy in order to emancipate Poland economically, but also because this would reduce unemployment and increase production for reconstruction and the war. Linked to the question of unemployment was that of social support, supply and political stability which in turn was a pre-condition for further progress.[112] Railway investment was seen to be at the core of the problem, because the development of infrastructure would help to integrate the different parts of the country, open new markets, but also give impulses to the economy through increased demand. When the Polish authorities took over the public railways in November 1918, their first task was to plan an improved railway net to integrate the different parts of the new Republic. Particularly in the eastern borderlands, the density of railways had been extremely low. The improvement of this part of the general network was assisted by the war about these areas due to its strategic significance. Table 12 shows that the network grew more than twofold during the wars. Simultaneously, reconstruction began on a large scale. Passenger and goods traffic, on the other hand, increased only after the cease fire. The end of the fighting provided new ca-

[107] "Annual report for 1923", 1 July 1924, in PRO, FO371, N5630/5630/55
[108] E. Rose (1920): "Program gospodarczy rzadu", in *Przeglad Gospodarczy 16*, pp. 3-6
[109] J. Dabrowski (1922b): "Obecny stan kredytów", in *Przemysl i Handel 47*, pp. 658-662
[110] E. Taylor (1926), op. cit., p. 110
[111] J. Zdziechowski (1925a): The Finances of Poland 1924-1925, London, p. 5
[112] See *Minutes of the Meeting of the Council of Ministers for 6 June 1919*, in AAN, PRM 6, pp. 629-630

pacities, more efforts could be made for the improvement of existing lines, and the rolling stock was increased by purchases and reparations. The railway deficit which combined railway investment and transport subsidies amounted to $70.5 million in 1923, i.e. 33 per cent of total government expenditure.[113]

Table 8: DEVELOPMENT OF POLISH RAILWAYS. 1919-1923

	Network (kilometres)	Passengers (thousand)	Goods (thousand tonnes)
1919	6,613	61,453	10,216
1920	13,763	66,785	13,322
1921	15,336	121,605	25,176
1922	15,933	165,308	42,325
1923	16,583	168,996	70,459

(Source: Ministerstwo Komunikacji (1929): Polskie Koleje Panstwowe, Warszawa, pp. 112-113)

Railway development certainly influenced the economic boom that followed the wars, but then, in turn, the economy also had an impact on the railways. The incorporation of East Upper Silesia in 1922, for example, made more raw materials available which increased goods traffic. However, the new part also demanded new railway investments, because it too had to be integrated. A British report mentioned in December 1922: "In Polish Upper Silesia, the iron industry is decreasing its production owing to transport difficulties."[114] These deficiencies were then consequently removed in 1923. The government granted the necessary credits for the construction of new lines and for the extension of a number of stations in Polish Upper Silesia. According to another report, these constructions removed the transport difficulties in that district.[115] Therewith, the most urgent works on the reconstruction of the Polish railways and the improvement of infrastructure in general were complete.

The second important point in the government's programme was to encourage foreign trade.[116] The government sensed that since the Polish population was impoverished with food being its main concern, there would be no major impulse to the reconstruction of industry from private demand. The only motors of growth could be the state and the international market. During the wars, the state purchased almost the entire industrial produce, but after the cease-fire when most firms had been restarted and trade had been liberalised, the reconstruction plans of the successive Polish governments all emphasised the need to increase exports in order to find an outlet for Polish production. Yet, this left the country

[113] E.H. Young (1924), op. cit., pp. 14-15

[114] "Economic Situation in December 1922", 19 January 1923, in PRO, FO371, N789/165/55

[115] "Annual Report for 1923", 1 July 1924, in PRO, FO371, N5630/5630/55

[116] The term "programme" has to be used with caution since railway investment and export subsidies were demands from industry that the state bowed to. The political system with its many small political parties and coalition governments was such that no party seemed ever to be able to bring forward a coherent programme. Parliament would normally only agree on the greatest common multiplier, which was not much.

dependent to a large extent on the business cycles of the world market, first, because during the wars, it had to import large quantities of raw materials, and then because the growth rate of the economy was partly determined by the extent of foreign trade. This dependency proved difficult in the first phase of reconstruction when raw materials were expensive everywhere due to high demand in all countries that had been affected by World War I. The international raw material crisis made reconstruction efforts even more difficult. Then, when Poland started to liberalise its trade and promote its exports in 1921, most countries were still living through the first post-war recession. In this situation, only very low prices were to ensure a quantitative increase in Polish exports. The international markets only recovered in 1922, yet international economic growth only lasted until about 1924. Then, a short recession was followed by an economic boom in most European countries as well as the U.S.A. from 1926.[117] This policy worked well between 1921 and 1923 when the prices of Polish goods were competitive.[118] The rise in foreign trade certainly contributed to Poland's post-war growth. However, the stabilisation of 1924 which overvalued the new Polish currency brought an end to the favourable export climate. Polish exports were severely curtailed, and they only recovered after improvements in Polish productivity and the readjustment of the exchange rate in the autumn of 1925.[119]

The most important trading partner for Poland became neighbouring Germany. The reasons were traditional trading links, on the one hand, and the Treaty of Versailles, on the other. Germany and Russia had been the main Polish trading partners before the war, but when Russia turned communist only the German partner remained. This was a matter of existing personal contacts, but also of the fact that the Polish infrastructure was directed towards Germany and that Poland had to rely on German harbours for transport due to the limitations of Danzig/Gdansk. The port of Gdynia was only built between 1924 and 1929. The Treaty of Versailles of 1919 and the consequent contract about Upper Silesia of 1922 strengthened this trend because they imposed on Germany to grant most-favoured nation status to Poland, as well as to sell Upper Silesian coal to Poland at its German wholesale price until the incorporation of the province into Poland, likewise to allow the free trade of East Upper Silesian produce thereafter until June 1925. In 1919, hence at the time when the German mark was still a legal tender in Poland, almost the entire Polish trade was conducted with the Reich. In 1920, the trade volume was reduced to 80.2 per cent of Polish imports and 37.5 per cent of exports.[120] The liberalisation of trade during the year 1921 was the first turning point in the bilateral trade statistics, but even more important was the separation of East Upper Silesia from Germany and its consequent incorporation

[117] For a more detailed account of the business cycles of Poland's main trading partners, see D.H. Aldcroft (1993): The European Economy 1914-1990, 3rd ed., London, chapters 2 and 3

[118] This point will be discussed further in chapter IV.

[119] See chapter VI for a more detailed discussion.

[120] W. Faberkiewicz (1922): "O bojkocie gospodarczym Polski przez Niemcy", in *Przemysl i Handel 23*, pp. 365-366

into Poland. As a result, the relation changed in 1922/23. In 1922, trade with Germany accounted for 37.0 per cent of Polish imports and 49.5 per cent of exports. The numbers changed to 43.6 per cent and 50.6 per cent in 1923, likewise 34.5 per cent and 43.2 per cent in 1924. At the same time, the exchange of East Upper Silesia also changed the bilateral balance of trade. Polish trade with Germany achieved a surplus of $ 2.3 million in 1922, $ 22.7 million in 1924 and $ 7.1 million in 1924.[121] One of the reasons for this favourable situation was that the occupation of the Ruhrgebiet offered a good market for Polish heavy industry. However, this relation was threatened in 1925, when the bilateral trade agreement based on the Treaty of Versailles ran out on 15 June. Negotiations for a continuation of the contract failed and the Polish-German Customs War broke out, when the German side refused to allow Polish coal imports into the Reich until an agreement was reached and Poland retaliated by restricting imports from Germany. More goods were then affected on both sides in the following months. However, the bilateral trade restrictions affected above all mining and heavy industry. Polish coal exports into Germany fell from 7. 0 million tonnes in 1924 to 2.8 million tonnes in 1925 and 0.1 million tonnes in 1926.[122] Yet, Poland's favourable balance of trade with the Reich remained due to the simultaneous rise in other exports and the decrease in imports from Germany. It amounted to $ 5.5 million in 1925, $ 23.0 million in 1926 and $ 7.6 million in 1927.[123]

Yet, while industry was reconstructed and industrial capacity was built up, the purchasing power of the agrarian sector remained low. One of the revolutionary demands of 1918 had been a land reform. The Left and the representatives of petty farmers had put forward the appeal to distribute the land of the large estates among the holders of small plots and agricultural labourers. Yet, their most controversial point had been the refusal to pay compensation. Then, the first elected government under Paderewski agreed to a reform, but suggested some form of compensation and the delay until after the wars.[124] However, the pressure for reform remained so that Pilsudski commissioned a group of experts to investigate about the form of a possible land act. On the basis of its report the Polish government enacted a first land reform on 15 July 1920 that was intended to break up all holdings of over 180 hectares and create medium size holdings of 15 to 20 hectares. The previous owners were to be compensated with half of the market value of the confiscated land. The law, however, remained without great success since it coincided with the fiercest fighting in the East, but also because of the complicated mechanisms it involved. It was at last set aside by the constitutional court in 1921 because it contradicted the right of property spelled out in the new constitution. By then it was clear that a new bill would have to be drafted. Yet, the different political camps could not agree on a compromise. While the Right opposed land reform all together, the Centre wanted moderate reforms

[121] *Rocznik Statystyki Rzeczypospolitej Polskiej 1924*, p. 88
[122] *Rocznik Statystyki Rzeczypospolitej Polskiej 1924*, p. 97; *Rocznik Statystyki Rzeczypospolitej Polskiej 1928*, pp. 238-239
[123] *Rocznik Statystyki Rzeczypospolitej Polskiej 1928*, p. 220. See also chapter IV.
[124] *3. Sejm*, 20 February 1919

with full compensation and the Left wanted radical reforms with little or no compensation. A chance for a compromise was only given in late spring 1923 when the National Democrats, the largest party on the Right, concluded a coalition agreement with the Centrist, moderate farmers' party Piast in which they agreed to a reform as part of the overall deal. Their coalition, however, did not stay in power long enough to enact a new reform packet. A chance was thus missed to increase private demand by productivity improvements in agriculture.[125]

In conclusion, the economic programme of the successive Polish governments between 1921 and 1923 was clearly oriented towards the supply-side. With high state expenditure due to investments and subsidies that was paid for by inflation, the state enforced a high savings rate on the Polish society and tried to direct excess production into foreign trade. However, it has to be added that the army was not significantly reduced after the wars and it thus remained an element of state consumption which burdened state expenditure.

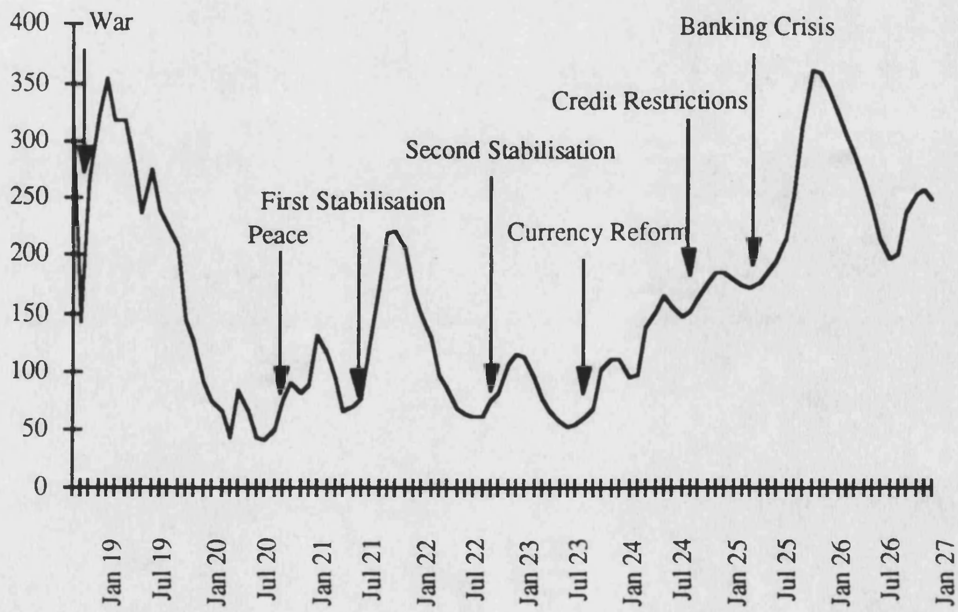
The overall economic policy then changed when W. Grabski came to power in December 1923 as the head of a non-party government.[126] He was commissioned by all major political camps to stabilise state finances and stop the printing of money to cover budget deficits. In his attempt to replace the inflation tax by a regular source of revenue, he introduced a property levy that hit above all at industrialists and large land owners. Simultaneously, he curtailed state contracts to industry and subsidies in the effort to save. Last, he abolished all foreign trade barriers in the attempt to open the Polish market to foreign competition. Over the last months of inflation, Polish prices had tended to rise above those of the world market. Increasing competition was now meant to put pressure on the firms to improve productivity and adjust their product range to the actual demand. He knew that these steps would ultimately result in recession, but he thought he could replace the supply policy of the previous governments by the introduction of a demand policy. He therefore started to liberalise trade restrictions and export levies on foodstuffs to raise agrarian prices and increase the purchasing power of the agrarian population. At the same time, a new land reform was to improve productivity in agriculture. Yet, as in previous attempts, a compromise about the procedure of the reforms was difficult to reach. The discussion seemed to continue forever, and a new reform bill was only passed on 28 December 1925. It foresaw the distribution of land to small holders and agricultural labourers that in its main part had belonged to the state, the church, other institutions or private landholders who had been awarded their plot by the Russian occupation power for the suppression of Polish citizens. Only some large private estates were also affected. An annual amount of 200,000 hectares of land were to be singled out for parcelation for a period of ten years.[127] Given the time frame of the reform as well as the late enactment;

[125] On the first attempts of a land reform, see also Z. Landau, J. Tomaszewski (1967), op. cit., pp. 154-161
[126] This point will be discussed in more detail in chapter VI.
[127] *Dziennik Ustaw Rzeczypospolitej Polskiej 1*, 1926, p. 1

an immediate increase in demand was not to be expected. Consequently, the Polish economy experienced a serious depression in 1924. That is why Grabski changed his economic policy at the beginning of the new year increasing state contracts to Polish industry as well as providing inexpensive credit. Yet, since his major aim remained a demand lead growth, import barriers and export subsidies were to become his main tools in the attempt to substitute private demand with export trade for the time being. The change was made easier by significant productivity gains in the production of Poland's most important export commodities over the previous months. This concept was then taken over by his successor who emphasised the need to increase exports while at the same time he reduced the property levy, thus lifting the main burden of production. His policy was therewith a compromise between the early supply and Grabski's demand policy. He could now lean back and wait for the fruits. Pilsudski's coup d'état did not change this economic policy. It remained in place until the end of the period under discussion.[128]

In conclusion, the turning points in the economic development of post-war Poland were to a large extent determined by both the government's economic policies and the business cycles of the world market. Hereby the German market was of particular importance. The end of the wars about the borders in 1921 became the first milestone in this advance. It was followed by the incorporation of East Upper Silesia into Poland in 1922. Then the fiscal and monetary reforms and the consequent change in economic policy of 1924 coursed a first set-back, before the economy started to grow again in 1926.

Diagram 1: POLISH UNEMPLOYMENT. 1919-1927
(thousand registered unemployed)



(Source: J. Drecki (1929): "Bezrobocie w Polsce niepodleglej", in S. Zaleski (ed.): Bilans gospodarczy

[128] See also chapter VI.

dziesieciolecia Polski odrodzonej, Poznan, vol. 2, p. 379)

The development of industry as a whole was mirrored in the monthly changes of the unemployment figures. Unemployment decreased during the wars from 322, 000 in April 1919 to 40,000 in November 1920 when the army needed soldiers while, simultaneously, production grew. After the wars, employment deteriorated slightly, but since production continued to grow this was only due to the reduction of the army. The next peak of unemployment then coincided with the first stabilisation attempt of Finance Minister Michalski in the winter of 1921/22 and one during the next stabilisation attempt by Finance Minister Grabski in spring 1923.[129] After a relatively short recovery, unemployment started to rise towards the end of 1923 and grew almost continuously until February 1926 when it reached a peak that was even higher than the one after World War I. The revival of industry thus preceded Pilsudski's coup d'état of May 1926 by only three months.

Table 9: POLISH INDUSTRIAL PRODUCTION. 1913 AND 1919-1927
(thousand tonnes)

	Coal	Petrol	Iron	Paper	Cellulose	Sugar	Cement	Steel	Alcohol	Fertiliser
1913	40972	1071	1055	70	34	6864	612	1619	2207	..
1919	25326	832	310	15	7	963	194	657	..	..
1920	30702	765	412	20	8	1770	231	981	448	..
1921	29894	705	444	31	16	1812	342	841	476	224
1922	34631	713	480	42	23	3042	459	1004	598	261
1923	36098	737	520	52	30	3842	505	1135	..	282
1924	32280	771	336	49	30	4899	350	681	..	299
1925	29081	812	315	76	35	5790	529	782	..	515
1926	35747	796	327	..	..	5600	..	788	..	..
1927	38084	723	618	..	..	5620	..	1244	..	..

(Sources: *Rocznik Statystyki Rzeczypospolitej Polskiej 1920/22*, vol. 2, p. 145; *Rocznik Statystyki Rzeczypospolitej Polskiej 1923*, p. 51; *Rocznik Statystyki Rzeczypospolitej Polskiej 19225/26*, pp. 152, 157; *Rocznik Statystyki Rzeczypospolitej Polskiej 1929*, pp. 85, 88; A. Iwanski (1929): "Przemysl rolny w Polsce", in S. Zaleski (ed.): Bilans gospodarczy dziesieciolecia Polski odrodzonej, Warszawa, vol. 1, p. 259; L. Stanislawski (1923): "Kryzys w przemysl papierniczym", in *Przemysl i Handel 23*, p. 306; L. Stanislawski (1925): "Rozkwit krajowej produkcji papieru", in *Przemysl i Handel 13*, pp. 381-382; L. Stanislawski (1926): "Produkcja papieru w r. 1925", in *Przemysl i Handel 5*, pp. 135-136; Z. Pietkiewicz (1925): "Przemysl cementowy", in *Przemysl i Handel 14/15*, pp. 427-429)

The first strong impulse to industry had come from the wars about the borders and the consequent high demand on the part of the state. In 1921, this demand was then replaced by private consumption. There was no readjustment crisis in this period because of the low level of specialisation of Polish industry. Raw materials, textiles, boots, et. were directed easily from military to public use. The reconstruction efforts then made fast progress until the post-inflationary recession of 1924/25 and continued after February

[129] All stabilisation attempts will be discussed in chapter V.

1926. In most industries, the pre-war level was even exceeded in 1927, i.e. at the time when inflation finally ceased.

Table 10: POLISH AGRICULTURAL PRODUCTION. 1909/13 and 1921-1927
(thousand tonnes)

	Wheat	Rye	Barley	Oat	Potatoes	Sugar Beet
1909/13	1678.3	5711.2	1489.0	2814.3	24789.9	4113.3
1921	968.2	4247.5	1160.6	2174.2	16741.5	..
1922	1153.3	5013.5	1296.8	2505.6	33219.0	2671.4
1923	1353.6	5962.4	1655.5	3522.4	26494.3	2574.6
1924	1013.9	3756.5	1489.0	1539.5	22618.1	3210.8
1925	1738.4	6740.6	949.5	2093.0	24728.8	3687.2
1926	1428.6	5182.4	1300.7	1940.9	21379.6	3724.9
1927	1662.7	5887.1	1214.2	2139.0	26771.0	3620.1

(Sources: *Rocznik Statystyki Rzeczypospolitej Polskiej 1927*, pp. 118-119; *Rocznik Statystyki Rzeczy-pospolitej Polskiej 1930*, pp. 44-45)

In agriculture, as has been argued before, the end of the wars became the first and major turning point. Although there are no records for the agricultural output of the period 1918-1920, the 1920 productivity figures given in table 11 indicate the extent of production failure of these years. One also has to bear in mind that the acreage was much reduced during the wars and that the Kresy that later reduced the all-Polish average were not yet included in the statistics. Then, 1921 became the first year in which Poland did not have to rely on food imports. The statistics do not suggest any other turning point in the post-war development. Annual changes seem to be more the product of weather conditions than of changes in productivity.

Table 11: PRODUCTIVITY OF POLISH AGRICULTURE. 1909/13 and 1921-1927
(tonnes per hectare)

	Wheat	Rye	Barley	Oat	Potatoes	Sugar Beet
1909/13	1.24	1.12	1.18	1.02	10.3	24.5
1920	0.85	0.64	1.07	1.12	10.1	..
1921	1.12	1.03	1.06	0.94	8.7	..
1922	1.11	1.10	1.13	1.05	15.2	24.4
1923	1.33	1.28	1.38	1.40	11.6	18.9
1924	0.80	0.72	0.87	0.79	9.6	19.7
1925	1.34	1.17	1.18	1.07	10.2	21.4
1926	1.09	0.91	1.09	0.98	8.9	20.1
1927	1.22	1.02	1.14	1.08	11.0	17.9

(Data for 1920 are given yet without the Kresy and Upper Silesia. Sources: *Rocznik Statystyki Rzeczypospolitej Polskiej 1920/22*, vol. 2, p. 85; *Rocznik Statystyki Rzeczypospolitej Polskiej 1927*, pp. 118-119; *Rocznik Statystyki Rzeczy-pospolitej Polskiej 1929*, p. 38; *Rocznik Statystyki Rzeczypospolitej Polskiej 1930*, pp. 44-45)

Table 11 shows that the land reform had no immediate or only a marginal effect on the productivity of Polish agriculture. The reason can be found in the actual result of the reforms. Table 12 shows that the new farms, on average, only obtained 4.54 hectares of land each while consolidated farms obtained 8.78 hectares each. In both cases, the new farms operated below the 15 hectares benchmark for profitability. Given the fact that this area had formerly belonged to large estates, productivity might actually have even suffered by this move and was only compensated for by the increasing use of fertilisers and land machines. Thus, apart from the difficulties in the initial phase of Polish statehood, agriculture more or less stagnated in the period concerned in this study.

Table 12: THE POLISH LAND REFORM. 1919-1927

	New Farms	Parcelled Land (hectares)	Consolidated Farms	Consolidated Land (hectares)
1919	2600	14200	2100	20200
1920	15100	74300	1700	14900
1921	37500	224100	2000	16800
1922	33400	221700	3500	28800
1923	32700	163500	3800	36500
1924	30800	132600	3800	32300
1925	32700	121200	7700	68100
1926	58800	217400	17500	145500
1927	65800	245400	29500	265400
Total	309400	1414400	71600	628500

(Source: *Maly Rocznik Statystyczny 1931*, p. 16. Different figures were given in *Maly Rocznik Statystyczny 1937*, p. 65. Yet, they were presented at a time when the government needed to show its good record. That is why the here offered table seems more reliable.)

CONCLUSION

After World War I Poland was in the difficult situation that it had to achieve physical, political and economic reconstruction simultaneously as well as fight more wars to secure its borders. At the same time, government intervention in almost every sphere of public life became necessary due to the starvation of large parts of the population as well as the political and economic chaos of the post-war period. The combination of all these factors put strong pressure on state expenditure while state revenues were at a low. In this situation the government resorted to the printing press as an emergency response to the huge tasks it had to fulfil.

In the beginning, inflation had to pay for the wars about the borders and later for state investments, subsidies as well as the short-comings of other revenues. Inflation bridged a gap that emerged due to the need to build up state institutions and direct the reconstruction of Poland. However, by the end of 1923 the most urgent tasks had been fulfilled. The new Polish state had been established with internationally recognised borders and a functioning state administration, and the basic infrastructure had been provided. At the same time, industry had reconstructed its plants and integrated its different markets. It seemed only consequent that the government stabilised in the beginning of 1924. Yet, stabilisation did not mean the ultimate end of inflation (and even the risk of hyperinflation). The fiscal reforms saw only the beginnings of a new tax system which would ultimately fit the needs of the Polish state, while the Treasury had to improvise for the time being. At the same time, the economy still lacked structural reforms. In the first phase of inflation prior to 1924, Polish production was directed towards reconstruction and foreign trade, a trend which was promoted by external factors. Once pre-war capacities were reconstructed and the stabilisation introduced stable values, however, Polish industry had to adjust to market requirements and invest in productivity improvements. Thus, while the first phase of reconstruction had emphasised quantitative improvements, the government had to encourage qualitative improvements after 1924. This second phase was not immediately successful. That is why inflation returned. Yet, it laid the foundation of future growth.

IV

THE DYNAMICS OF INFLATION AND THEIR IMPACT ON POLISH RECONSTRUCTION

The previous chapter examined some of the problems with which the young state was confronted in its first years of existence and documented the process of unification and reconstruction. The government was heavily involved in the latter process, and it paid for its interventions with the use of the printing press; in other words through inflation. The question remains, however, how Poland managed to grow so quickly in those difficult times. Were the wars, improvements in infrastructure as well as some export subsidies enough to trigger and sustain economic growth? And why were some Polish products internationally competitive given the highly unfavourable circumstances for production in the country which should have increased Polish prices beyond those of its competitors? In order to answer these questions, it is necessary to return to the argument presented in chapter II that inflation developed its own dynamics which increasingly interfered with the real sphere of production. Analysing these and the distributionary effects which they involved might explain the causalities and limitations of the Polish reconstruction process.

THE SEARCH FOR THE RIGHT MARKET

Chapter III demonstrated Poland's dependency on the world market for most of the period concerned in this thesis. Between 1918 and 1921, i.e. during the wars, certain Polish imports, like foodstuffs, fertilisers, machine parts, railway equipment, etc., were inelastic, while there were hardly any goods available for export. Therefore, the state had to find a way to balance its foreign payment obligations. However, due to the inelastic demand of imported goods, the balance could not be achieved through the price of foreign currencies. Consequently Poland would have profited most had its currency been overvalued since this would have resulted in cheaper imports and more expensive exports. The exchange rate would have thus given an incentive for reconstruction since investments would have been relatively inexpensive. On the other hand, however, such a regime would have required some form of foreign aid to provide the necessary foreign currencies until the most urgent demand had been met. Furthermore, strong import restrictions would have been necessary to ensure that the situation did not produce an influx of consumer goods, but would be restrained to investments. The Polish government had little alternative here since hunger, war and instability exercised significant pressure for a solution to the problem. It had to find a way to ensure an inflow of foreign capital.

After the wars, imports lost their urgency. When the army was demobilised in the spring of 1921, more goods became available for private consumption. And when Polish agriculture became self-sufficient in the summer of the same year, food imports became unnecessary. The government should have now be interested in a policy which restricted imports, in order to give an incentive to Polish production, and boosted exports, in order to provide as wide a market as possible. This could have been achieved by reversing the trend of overvaluation and undervaluing the currency in 1921. Then, high demand would have guaranteed high profits which could have been reinvested in the production plants. It was a major advantage that Poland lacked a luxury goods industry at a time when imports were expensive. This ensured that all available funds were directed into the right channels. At the same time, profits would have been spent rather on investment goods than on foodstuffs, resulting in industrial prices eventually rising faster than agricultural prices. Consequently, this trend would have attracted people to move from the land to the cities. The surplus labour would have been gradually absorbed, profits in agriculture would have risen and the productivity of Polish agriculture would have ultimately improved. Yet, it would have been a problem to maintain the currency at an undervalued rate. The monetary authorities would have therefore needed full control over the exchange rate or other favourable conditions which would have achieved the same end. Further problems would have included the dependency on international demand, on the one hand, and on a series of successful harvests, on the other. In this scenario, a failed harvest would have resulted in the need for very expensive food imports which would have immediately effected the trade balance. Moreover, only exports of raw materials, heavy industry and goods such as sugar and cement, which had their raw material base within the country, would have been boosted. The sale of textiles, on the other hand, as the main Polish export commodity, would have been hampered by the fact that undervaluation would have increased the import price of raw materials. Only credits and subsidies, or such a significant undervaluation, which would have made low wages compensate for expensive raw materials, could have prevented this industry from experiencing severe economic difficulties. A more structural shortcoming of the programme would have been that firms were first reconstructed; then, however, they would have invested more in quantity than in quality as long as most investment goods had to be imported. Thus, the main advantages of a policy of undervaluation would have been to give an incentive for reconstruction, replace low demand on the home market and protect the development of Polish industry. At the same time, its enactment was not likely to cause major political obstacles. Yet, the main argument against it was that the process would have been slow with many inherent economic risks. An alternative would have been the development of the home market. A development plan which would emphasise agriculture promised much faster growth. A land reform could have increased productivity by allocating more land to the holders of plots below ten hectares. Such a change would have ideally be accompanied by an improved infrastructure and a better access to information for the farmers. With higher productivity, profits would have risen and thus also the purchasing power of the agrarian sector. Consequently, agriculture would have gradually been commercialised. This would have given an impulse to industry which could have then absorbed the surplus labour. Such a policy seemed to promise sustainable growth and would have thus been sensible from an economic point of view. The disadvantage, however, would have been inherent political problems. A land reform would have meant the redistribution of property, a policy which would have certainly been opposed by those who had to give. Furthermore, an immediate impact on industry could not have been expected. Thus, unemployment would have remained a problem for the time being. In conclusion, the government was more likely to go along the first path in the beginning, until reconstruction was achieved and unemployment had ceased to be a problem. Then, political power was likely to shift to the agrarian sector which had lost so far, at least in relative terms, and now demanded a turn towards a policy which favoured it.

A problem which was linked to every development programme was that of public finances. The whole process required much state involvement. Thus, the question had to be addressed which social group was to be the main contributor to state revenues. The agrarian sector would, of course, have to shoulder the largest share of the tax burden since it comprised by far the largest fraction of the society. Yet, it was poor and improvements in its performance were of vital importance. It was thus in the government's interest to relieve this sector as far as possible, at least until agricultural production exceeded national requirements. Industrialists should ideally be spared at all because they needed their profits to reconstruct their businesses. The only social groups that could have contributed without harming the economy as a whole were rentiers and salary earners. Yet, politically it was difficult to burden them more than others.

THE MONEY SUPPLY

> "The budget for 1919 was a slow making-up of single groups of numbers: the natural result of a first try in a new state of such a kind of work, done by inexperienced ministers and civil servants. The main problem was the lack of accountancy, which would have been a vital pre-condition; it is perhaps enough to mention that in order to calculate the expenses for wages for civil servants and

the overall costs of administration, each item and each person had to be dealt with separately."[1]

There had been three different monetary systems in the lands of the now Polish Republic before the war. Two of them, the German mark and the Russian ruble, had been on the gold standard, while the Austrian crown had been on the gold-exchange standard. The German mark had been equivalent to 0.358 grams of gold (zl 1.23 or $ 0.238), the Russian ruble of 0.774 grams (zl 2.67 or $ 0.515), and the Austrian crown of 0.305 grams (zl 1.05 or $ 0.202). There had been hardly any inflation prior to the war. The money supply had been fairly stable. Kulikowski estimated it as the equivalent of about 3,000 million Polish marks (MP).[2] This figure will serve as our benchmark.

Inflation started with the outbreak of World War I when the belligerent countries increased the money supply in order to finance their involvement. This resulted in price rises and, since the governments of all participating countries introduced price controls, in the emergence of black markets. The introduction of the Polish mark in the occupied territories in 1917, in addition to the circulating ruble, meant a further increase in paper money. At the end of the war, the notes in circulation had increased to the equivalent of about 9,000 million Polish marks.[3] Divided between three belligerent countries, the Polish people thus made their first experiences with inflation, rationing and the consequent distortion of relative prices during the War. Then, however, when the new Polish authorities took over power in November 1918, they started their own post-war inflation. The initial reason was that they inherited an empty treasury. In order to pay for the first bills, they had to rely on the issue of more money, at least for a period of transition. They issued notes of the Polish State Loan Bank (PKKP) because they lacked the means to introduce their own Bank of Issue and print their own money. Once the stocks were exhausted, the Warsaw printers were entrusted with the additional emission of 500 million Polish marks on 31 December 1918. Their imprint no longer stated that they were equal to one German mark, but that the Polish state would exchange them at a later stage for a future Polish currency. The corresponding exchange rate would be established by the legislature.[4] According to the statutes of the PKKP, the backing of these emissions had to be either gold corresponding to the pre-war parity of the German mark, i.e. 0.358 grams, or a short bill with a currency of less than four months, goods, bonds or exchange of the partitioning powers. Apart from these emissions, the PKKP was also allowed to grant the Treasury unbacked credit for a period of up to six months. This, however, required the

[1] L. Bilinski (1925): Wspomnienia i dokumenty, Warszawa, vol. 2, pp. 266-267

[2] J. Kulikowski (1923): Kredyt w Polsce w dobie inflacji, 1919-1922, Poznan, p. 8. E. Taylor estimated it as only half as much, namely as MP 1,500 million; yet, this figure seems too low in comparison to the post-war money stock; see E. Taylor (1926): Inflacja Polska, Poznan, p. 1

[3] MP 880.8 million in Polish marks, and the equivalent of an estimated MP 8,000 million in other currencies; see J. Kulikowski (1923), op. cit., p. 63

[4] *Dziennik Praw Panstwa Polskiego 4*, 1919, p. 89

permission of the Council of Ministers as well as of the Sejm.[5] Nevertheless, it was this paragraph which was later abused for the inflation.

First the question has to be addressed why budget deficits occurred. One reason can be found in the tax structure of pre-war Poland. By far the largest part of the Polish Republic had belonged to the Russian Empire before the War. There, state revenue had been mainly based on the income of state firms and properties as well as indirect taxes. Among the state firms, the railways had been the most important source of revenue. They had accounted for 27 per cent of total revenue in 1912 and produced a net surplus of $ 19.7 million. Indirect taxes had been based above all on alcohol, matches, petrol, railway tickets and tobacco. The most successful direct taxes had been the land, the profit and the capital tax, all of which had been rather primitive in their construction. The Austrian tax system, on the other hand, had been more effective in so far as it had known an income tax among the direct taxes. Yet again, the more important revenues had stemmed from state firms and indirect taxes. The railways had accounted for 43 per cent of total revenue and produced a net surplus of $ 9.46 million. Last, the Prussian tax system had relied most heavily on the income of state enterprises and property. It also relied on indirect taxes on alcohol, tobacco, sugar, coal and matches. Direct taxes had included above all an inheritance, a possession and a turnover tax. An income tax had been paid, but had gone to the local self-government and not to the state. In Prussia, the railways had accounted for 34 per cent of total revenue and a net income towards other expenditure of $ 3.93 million.[6]

Table 13: EXPENDITURE AND REVENUES IN PRE-WAR POLAND
(million dollars)

1912/13	Russian Part	%	Austrian Part	%	Prussian Part	%
Revenue total	174.91	100	88.09	100	55.11	100
• Direct Taxes	28.28	16	13.36	15	8.62	16
• Indirect Taxes	25.23	14	12.75	14	6.98	13
• Monopolies	27.39	16	6.84	9	-	-
• Customs	22.75	13	2.48	3	3.42	6
• State Enterprises	17.49	10	11.29	13	14.66	26
• Railways	47.65	27	38.82	43	18.76	34
• Administration	6.13	4	2.55	3	2.68	5
Expenditure total	112.57	100	97.27	100	53.85	100
• Army	30.90	27	23.04	24	15.92	30
• Railways	27.95	25	29.36	30	14.83	27
• Others	53.71	48	44.86	46	23.11	43
Balance	+62.34		-9.18		+1.26	

(Sources: "Données statistiques et budgetaires sur la Pologne", 24 March 1921, in LN, P151, 26-27; E. Taylor (1929b): "Skarbowosc", in S. Zaleski (ed.): Bilans gospodarczy dziesieciolecia Polski odrodzonej, Poznan, vol. 2, pp. 264-265)

[5] Statutes published in *Dziennik Praw Panstwa Polskiego 19*, 1919, p. 56

[6] There is a more detailed discussion of the system in E. Taylor (1929b): "Skarbowosc", in S. Zaleski (ed.): Bilans gospodarczy dziesieciolecia Polski odrodzonej, Poznan, vol. 2, pp. 263-266

After the War, these tax systems remained unchanged for the time being. However, the new government was not guaranteed similar revenues. As the previous chapter already discussed, the war had destroyed most means of taxation: The railways had suffered significantly and the output of other state firms was down to a small fraction of their pre-war average. Customs were reduced, because, apart from an already destroyed foreign trade, the state also had to lift import levies for all goods that helped to rebuild the country. At the same time, export duties were in many cases suspended since the government tried to encourage exports to improve Poland's balance of payments and help the economy to restart. With the reduced output of Polish industry and the persisting chaos in tax administration, direct taxes decreased as well. Only indirect taxes remained almost in full (they were reduced for a while by the coal tax which was removed to encourage production). However, as Capie rightly pointed out: "A system based on indirect taxation would be less elastic than a direct system. The tax base of the former could not be rapidly expanded when required."[7] It was impossible to raise indirect taxes to a level necessary to compensate for the loss in other revenues. The government was also hesitant to increase the tax burden because of the hampering effect of higher levies on the reconstruction effort.[8] Furthermore, the fact that indirect taxes were not the same in the different parts of the country made it possible for the individual to evade them by shopping at the neighbours (or on the black market, i.e. via a middleman). Surely, most of the potential tax on food sales was evaded in this way after 1916 at the latest in all areas of the future Republic. In consequence, state revenues ware well under their pre-war level. The attempts to reform and unify the tax system have already been described. Here it is only important to remember that the first proper state budget was not established before 1921. Before this date, separate ministers had their own "accounts" at the PKKP, and planning was thus impossible. Furthermore, the construction of a functioning tax administration was only completed in 1922. At the same time, monopolies were unsuccessful before 1924, and state firms produced deficits until 1926. The only relief for the Treasury was two extraordinary levies in 1922 and 1923 that yielded $ 16.4 million and $ 0.4 million respectively.[9]

Yet, while revenues fell sharply, there was no simultaneous decrease in expenditure. At first, expenditure even increased significantly because of the wars about the borders and the necessary repair works on the railways. Reconstruction was another task where the new state had to assist. Also the state administration had to be built up, a sufficient infrastructure had to be provided, and subsidies were given to stimulate industrial and agricul-

[7] F.H. Capie (1991): "Conditions in which very rapid inflation has appeared", in F.H. Capie (ed.): Major Inflations in History, Aldershot, p. 44
[8] *Monitor Polski 43*, 1921
[9] *Rocznik Ministerstwa Skarbu 1924*, p. 176. - The "Danina" and the Property Levy will be discussed in detail in chapter V.

tural growth. It can be thus concluded that the tax system lacked the flexibility to cope with the conditions of post-war Poland. Huge budget deficits occurred when revenues fell sharply and expenditure increased. On the other hand, a balanced budget would have required the construction of a capable tax administration, the unification of the tax system, tax reforms that were able to guarantee stable and sufficient revenues, flexible enough to allow for quick changes, as well as a successful reconstruction which was needed to reduce expenditure and increase revenues.

Table 14: EXPENDITURE AND REVENUES IN POLAND. 1913, 1919-1923
(million dollars)

	1913	1919/20	1921	1922	1923
Revenue total	315.9	158.9	47.0	92.4	73.1
• Direct taxes	50.3	..	..	27.5	16.2
• Indirect taxes	44.9	..	..	19.6	15.2
• Monopolies	34.2	..	9.8	7.7	7.4
• Customs	28.6	..	..	4.7	9.3
• State Enterprises	148.6	68.9	1.5	32.7	25.0
• Others	11.3	..	..	0.0	0.0
Expenditure total	263.6	622.1	119.8	126.9	185.6
• Army	69.8	318.1	44.4	46.0	61.4
• Railways	72.1	123.8	15.4	20.3	-
• Others	121.7	180.2	60.0	60.6	142.2
Balance	52.3	-463.2	-72.8	-34.5	-173.3

(Until 1923, state enterprises include railways. In 1923, the railv·ay budget was separated from the general budget. The railway deficit amounted to $ 60.8 million. This is included in the balance, but not in state enterprises. Sources: *Rocznik Statystyki Rzeczypospolitej Polskiej 1920/22*, vol. 2, pp. 248, 268-269; *Rocznik Statystyki Rzeczypospolitej Polskiej 1923*, pp. 119, 189; *Rocznik Ministerstwa Skarbu 1924*, pp. 173-177; *Wiadomosci Statystyczne 4*, 1924, p. 3; E.H. Young (1924): Report on Financial Conditions in Poland, London, pp. 13-15)

Table 15: STATE LOANS AND TREASURY BONDS. 1919-1923
(million dollars)

	1919	1920	1921	1922	1923
5% State Loan	75.0				
5% "Rebirth"		20.0			
4% Premium Loan		1.8			
T-Bonds I		11.0			
T-Bonds II			4.0		
T-Bonds III				1.8	
8% Gold Loan				1.5	
T-Bonds IV					0.1
6% Gold Bonds					7.0
Total	75.0	32.8	4.0	3.3	7.1

(Source: T. Buczkowski, H. Nowak (1929): "Rozwój kredytu w latach 1918-1928", in S. Zaleski (ed.): Bilans gospodarczy dziesieciolecia Polski odrodzonej, Poznan, vol. 2, p. 116)

In order to increase revenues and to meet the budget deficit, the government tried to borrow money from the Polish people. A first state loan which was issued in 1918 was very successful resulting in a revenue for the Treasury of about $ 75 million. A second loan named "Rebirth" issued in 1920 was already less successful amounting to only $ 20 million. With increasing inflation it became more and more difficult to get the people to lend to the government, since interest rates were far below the inflation rate.[10] Thus, the third loan issued in the autumn of 1922, although half of it was valorised in gold, brought no more than $ 1.5 million, and only Grabski's gold bonds issued in 1923 yielded more because they were fully indexed to the price of gold, i.e. not affected by depreciation anymore, and thus a real alternative to other forms of investment. At the same time, independently from the state loans, the Treasury also issued Treasury bonds to take the pressure from the printing press. It issued a first series in 1920, which was not as successful as the government had hoped because the interest it offered was seen as too low, and the government was not trusted in monetary matters.[11] Then, three more series had to be issued in the consequent years to pay back the first series. They were increasingly unpopular and yielded less and less every year. At last, the impoverishment of the Polish population after the War was another reason, why state loans and Treasury bonds were not sufficient to cover the budget deficits. Hungry people do not save, while those who had some money to spare rather spent it after those dark six years of war. An overall sum of $ 122.2 million was very patriotic already, particularly since most of this money was lost later due to depreciation.[12]

Table 16: THE DEBTS OF THE POLISH REPUBLIC. 1919-1923
(million dollars)

	1919	1920	1921	1922	1923
Internal Debt	96.2	149.1	79.0	43.3	20.5
• consolidated	22.1	18.7	4.8	2.5	2.2
• current	74.1	130.4	64.2	40.8	18.3
External Debt	237.3	329.8	283.2	283.2	260.8
• $ Loan	-	22.8	18.1	18.1	19.2
• U.S.A.	139.5	204.8	164.8	168.4	166.4
• France	76.0	69.1	67.4	66.0	46.2
• UK.	6.5	16.0	15.9	20.9	19.8
• Italy	8.3	7.8	7.9	3.8	3.4
• Netherlands	7.0	6.9	6.6	5.7	4.8
• Norway	-	2.4	2.5	-	0.0
• Sweden	-	-	0.0	0.3	1.0
Total Debt	333.5	478.9	362.2	326.5	281.3

(Sources: *Rocznik Statystyki Rzeczypospolitej Polskiej 1920/22*, vol. 2, p. 259; *Rocznik Statystyki Rzeczypospolitej Polskiej 1924*, p. 263)

Foreign loans were not to bring much relief either. After the War, when the Polish people were struck with hunger, the young state got American relief credits. They were used to

[10] The "Rebirth" loan in 1920 paid 5 per cent p.a., while prices rose by about 550 per cent; see R. Rybarski (1922): Marka polska i zloty polski, Warszawa, p. 20

[11] L. Zadrowski (1922): "Bilety Skarbowe", in *Przemysl i Handel 3*, pp. 34-35

[12] See also G. Günther (1931): Polnische Währungspolitik von 1924 bis zur Zlotystabilisierung, Breslau, pp. 14-15

pay for the import of foodstuffs and coal. Regular credit from abroad was at that time impossible to get because of the uncertainty concerning the Polish borders and even the survival of the resurrected state. There was certainly a lot of countries that would have been willing to help Poland to start off, but they were apparently held back by the fact that the Poles instead of concentrating on the building up of their country got engaged in another war. Everyone could see that the Treasury would be burdened with high expenditure in addition to the reconstruction costs.[13] Later foreign countries were held back by the prevailing monetary disorder in Poland. Several attempts by the Polish government to secure financial aid from abroad failed. The only chance for the Poles to cover their budget deficit by this means would have been a credit secured and supervised by the League of Nations. There were actually talks going on between the two[14], but the Poles did not accept the offer, because they feared that supervision would soon turn into control and a virtual end of their new independence.[15] In conclusion, the credits that Poland did secure were attached to the purchase of certain goods, such as foodstuffs in the U.S.A., uniforms in France and army boots in the UK., but they did not in their majority help to cover the budget deficit.

Finally, since other sources were unavailable, and the state did not reduce expenditure, the government took unbacked short-term loans at the PKKP for the remaining deficit. The bank in turn had to issue additional money to meet the claim. Poland became thus a typical example of a "Treasury inflation"[16]. From the very first days, the government had to have recourse to the printing press to pay for its bills. These credits which started quite small grew with increasing speed, and very soon the lending to the Treasury became the foremost task of the PKKP which thus lost its function as a mere loan bank and was turned into the Polish Bank of Issue without any changes in its statutes. The transformation into a proper state bank was completed when from 1921, the bank also started to provide emission credits to individuals and to industry.[17] Inflation thus taxed the Polish people in addition to regular taxation, because the successive governments were unable to either balance the budget or secure enough credit to cover the deficit. The dependency on the printing press rose over the inflationary period because increasing inflation rates resulted in a fall in activity in the capital markets which also involved credits to the government. In the absence of other means, the state covered about 67 per cent of its expen-

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[13] O. Lehnich (1923): Währung und Wirtschaft in Polen, Litauen, Lettland und Estland, Berlin, pp. 50-52, 141 The Poles also made the "mistake" to favour the Bolsheviks in the Russian civil war.

[14] F. Mlynarski (1971): Wspomnienia, Warszawa, p. 166

[15] W. Grabski vindicated his position, why Poland had to reconstruct by "their own means": "The acceptance of economic supervision might give a free hand to political control. Can someone who is controlled turn down the plans of the controller? Can someone who controls not enforce his economical and political ideas on the controlled?"; see W. Grabski (1926): O wlasnych silach, Warszawa, p. 41

[16] B. Blumenstrauch (1932): Le Nouveau Régime Monétaire en Pologne et son Rôle dans l'Economie Nationale, Nancy, p. 26, pointed to the close relation of the money stock and the state debt; see also E. Taylor (1929a): "Waluta", in S. Zaleski (ed.), op. cit., vol. 2, p. 240

[17] J. Kulikowski (1923), op. cit., pp. 61-62

diture over the inflation period by this tax. The printing press helped to collect an overall sum of $ 707.8 million for the Treasury.[18] This sum was much higher than one should have expected. The continued improvement of both the tax system and the tax administration should have resulted in ever smaller deficits. Yet, this trend was reversed in the final year of inflation. Table 14 shows that revenues increased between 1921 and 1922 before they fell back again in 1923 in spite of the boom in Polish production and the institutional improvements outlined in the previous chapters. The decrease was much more significant in direct than in indirect taxes while monopolies were almost stable. The revenues from state enterprises also fell quite drastically while customs rose due to the industrial boom. The reasons for this phenomenon must be looked for in the increasing significance of collection lags and the deterioration of tax compliance. The reduction in earnings in public firms can be explained by the slower price rises of public goods compared to the general price level which was due to their signalling character as outlined in chapter II. Yet, while revenues fell, expenditure increased which was mainly due to rising costs for public firms. The expenditure for public firms more than doubled between 1922 and 1923 from zl 129.8 million or $ 25.0 million to zl 314.1 million or $ 60.6 million.[19] This rise was probably due to the boom in production which increased the pressure on the government to improve its infrastructure programme while, at the same time, high inflation rates had a negative impact on budgetary discipline. This widening of the deficit towards the end of the inflationary period again increased the government's dependency on the inflation tax.

The consequence of the increasing state debt and the resulting inflation tax was a decrease in savings. They fell from the equivalent of $ 88.0 million in 1913 to $ 13.1 million in 1919, to $ 13.7 million in 1920, $ 9.3 million in 1921, $ 6.4 million in 1922[20], and to $ 0.9 million in December 1923[21]. People would rather spend their money immediately than bring it to a bank and then watch its depreciation. In consequence, this also resulted in a decrease in funds available for credits. Interest rates lost their function of determining the savings rate because of increasingly negative expectations, particularly since everyone was expecting the announced introduction of a new and stable currency. Thus credit was scarce for industry, and therefore the PKKP became increasingly more important as a source of credit. For this purpose, too, the money stock had to be enlarged, i.e. new money had to be issued. Credits to industry became an increasingly more important task for the PKKP. These credits rose only slowly during the war with Russia since the management of the PKKP feared to give a push to inflation if it did not keep credit scarce.[22]

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18 This calculation is based on the monthly debt of the Treasury at the PKKP transferred into U.S. dollars according to the monthly average rate. E. Taylor (1926), op. cit., p. 255, calculated the inflation tax as $ 549.4 million based on the yearly budget deficits, and T. Szturm de Sztrem (1924): Zywiolosc w opodatkowaniu. Podatek inflacyjny, Warszawa, p. 15, $ 736.1 million, also based on the state debt.

19 *Rocznik Ministerstwa Skarbu 1924*, p. 173

20 J. Kulikowski (1923), op. cit., p. 91

21 *Rocznik Statystyki Rzeczypospolitej Polskiej 1924*, p. 285

22 *Zamkniecie rachunków Polskiej Krajowej Kasy Pozyczkowej za rok 1920*, p. 9

The Bank only started to react to pressure when Poland saw its first economic crisis after the war in the autumn of 1921.[23] Credits to industry rose fivefold within half a year then compared to an increase of only 50 per cent in the preceding six months.[24] Afterwards, although credit was still scarce in general, it further increased also in relative terms. The share of credits to industry in the activities of the PKKP rose steadily. At the end of 1919, it amounted to only 2.2 per cent while it increased to 5.7 per cent in 1920[25], to 11.6 per cent in 1921[26], to 17.6 per cent in 1922[27] and to 16.5 per cent at the end of 1923[28]. This rise has to be seen in a context of increasing inflation in general. While credits to industry rose from 2.2 to 16.5 per cent of the activities of the PKKP, the money stock increased from 5,300 million to 125,372,000 million[29]. However, in 1919 and 1920, credits to industry were below bank deposits. The relation of credits to industry and deposits was 4.6 per cent in 1919, 93.8 per cent in 1920, 176.3 per cent in 1921, 191.4 per cent in 1922[30] and 595.6 per cent in 1923[31], i.e. these credits steadily increased their share in the inflation. From 1921, they had to be covered in part by the issuing of new money. However, as Rose rightly pointed out, credits were still below their corresponding pre-war figures until the end of the inflationary period. Capital remained scarce even after the relaxation of the PKKP.[32] In conclusion, the inflation tax was not only used to finance the budget deficit, but also to subsidise Polish industry through emission credits. Due to the lack of savings, the PKKP issued additional money to meet the most urgent needs of industry. The printing press helped to collect an overall sum of $ 109.4 million for this purpose or 13.4 per cent of new emission.[33]

Table 17: REAL VALUE OF THE MONEY STOCK. 1920-1924
(million dollars)

	March	June	September	December
1920		154.8	124.0	85.2
1921	97.8	84.2	39.1	71.8
1922	59.2	71.1	58.9	45.2
1923	44.2	46.4	39.2	29.3
1924	67.4			

(Circulation on the basis of the exchange rate. - Source: J.P. Young (1925): European Currency and Finance, Washington, vol. 2, p. 350)

[23] All stabilisation attempts will be discussed in chapter V.
[24] *Rocznik Statystyki Rzeczypospolitej Polskiej 1923*, p. 207
[25] *Rocznik Statystyki Rzeczypospolitej Polskiej 1920/22*, vol. 2, p. 223
[26] *Zamkniecie rachunków Polskiej Krajowej Kasy Pozyczkowej za rok 1921*, Zalacznik 2
[27] *Rocznik Statystyki Rzeczypospolitej Polskiej 1923*, p. 104
[28] *Sprawozdanie Polskiej Krajowej Kasy Pozyczkowej za rok 1923*, Zalacznik 2
[29] For detailed statistics, see appendix.
[30] J. Kulikowski (1923), op. cit., p. 64
[31] *Rocznik Statystyki Rzeczypospolitej Polskiej 1924*, p. 285
[32] E. Rose (1922): Bilans gospodarczy trzech lat niepodleglosci, Warszawa, pp. 101-106
[33] The calculation is based on *Rocznik Statystyki Rzeczypospolitej Polskiej 1920/22*, vol. 2, p. 225; *Rocznik Statystyki Rzeczypospolitej Polskiej 1924*, p. 105; *Sprawozdanie Polskiej Krajowej Kasy Pozyczkowej za rok 1923*, Zalacznik 2. E. Taylor (1926), op. cit., p. 188 gives a lower figure for the total emission of industrial credit, namely $ 76 million.

Simultaneously with the increase in inflation, the real value of the money stock fell almost steadily over the period as table 17 shows impressively. In other words, all Polish marks in circulation would have bought, if changed into a stable currency or gold, goods worth $ 154.8 million in June 1920, but only $ 29.3 million in December 1923. This meant a *de facto* reduction of the real money supply which could have been compensated by either an overall reduction in goods, an increase in the velocity of goods circulation, an increase in the velocity of money circulation or the flight into other means of payments. Yet, the figures in chapter III suggested that general output grew over the period, i.e. that more goods were available. This leads one to conclude that, on the one hand, the velocity of the good and money circulation increased over the period, while, at the same time, people fled from the Polish mark into other means of payment. The latter argument is supported by the fact that during the stabilisation of 1924 when the Polish currency regained credibility, $ 30 million of foreign exchange passed from private individuals to the state bank. This figure suggests that at the end of 1923 more foreign currencies circulated in Poland than Polish marks. In consequence, the higher velocity of goods and money circulation which went along with a decrease in savings meant a boost to industry, while simultaneously the Treasury's tax base shrank. The government was increasingly faced with the dilemma that its dependency on the printing press rose while the amount of cash balances which could be "taxed" fell. Thus, new emissions resulted in an ever smaller seigniorage which should have translated into accelerating inflation rates.

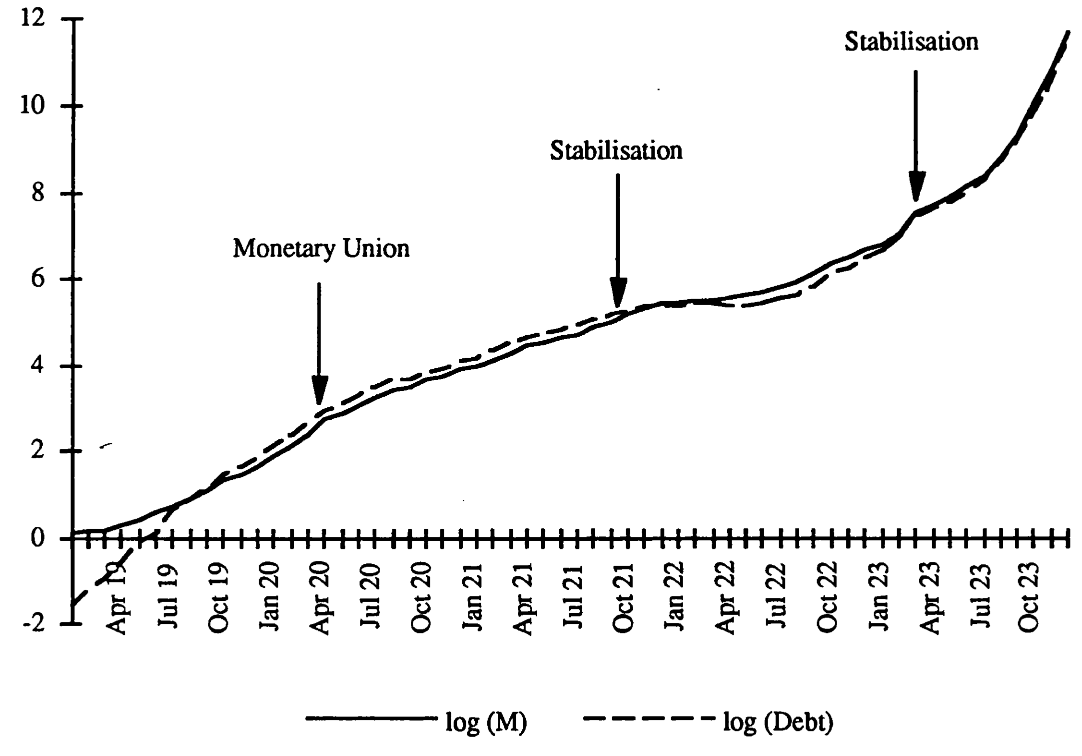
Diagram 2 shows that the growth rate of the money supply increased over the period. The main determinants of the money supply seem to have been the state debt and credits to industry. The first, as has been argued before, was the sole determinant during the wars about the borders. State debts even exceeded the money supply. This pattern changed, however, with the liberalisation of trade in the winter of 1920/21. Industry increasingly required credits, and when the government halted and even reduced the state debt during the first stabilisation attempt in winter 1921/22, the money supply passed the state debt and stayed above it for the rest of the period. The short recession of that winter changed the lending habits of the PKKP.[34] From then on, both the government and industry further heated up the inflation until W. Grabski succeeded in stabilising public finances in the spring of 1924.

Looking at the money supply, one can determine four distinct phases. There was a slowly accelerating growth rate from the outbreak of the wars about the borders, in January 1919, until April 1920 when the monetary system was unified. The average growth rate of 17.6 per cent is not surprising because at that time the Polish mark was driving out the

[34] On the rise in credits, see also *Zamkniecie rachunków Polskiej Krajowej Kasy Pozyczkowej za rok 1922.*

other currencies as will be shown later in this chapter. More interestingly, this phase was followed by a steady growth rate of 13 per cent between April 1920 and December 1921. The end of the wars only halted this trend for two months, when the army was demobilised, before it returned to the same stable growth rate. Then, during the first stabilisation attempt, the money stock grew only very slowly, before we find an accelerating trend of a 17.9 per cent growth between June 1922 and March 1923. The trend was accelerating, but then stopped in Grabski's first stabilisation attempt, before it started to rise with accelerating speed again between April and December 1923. In this last phase, an average growth rate of 49 per cent was reached.[35] In other words, the growth rate of the money

Diagram 2: MONEY SUPPLY AND STATE DEBT AT THE PKKP. 1919-1923
(log of billion of Polish marks)



(Sources: *Rocznik Statystyki Rzeczypospolitej Polskiej 1920/22*, vol. 2, p. 225; *Rocznik Statystyki Rzeczypospolitej Polskiej 1924*, p. 144; *Sprawozdanie Polskiej Krajowej Kasy Pozyczkowej za rok 1923*, Zalacznik 2)

supply started accelerating in June 1922, i.e. after the failed stabilisation attempt and parallel with the outbreak of the German hyperinflation. Although the rise of paper money can be explained in part by the increasing pressure of industrial credit, there was an obvious turning point in the development of the money supply. However, it is difficult to in-

35 The calculations for the growth rates are based on the figures given in the statistical appendix.

terpret this change as a qualitative change in the system. Looking at the seigniorage[36], one realises that while the growth rate of the money supply was steady, i.e. not accelerating, before the stabilisation attempt of 1921/22, this was paralleled by a decline in seigniorage. In other words, the government printed the same amount of money every month, but got increasingly less goods and services in return. Then, in the summer of 1922, the seigniorage had to be held stable or even increased since the government did not manage to reduce the deficit even further, and that is when the inflation rates started to accelerate. This leads one to conclude that in a scenario where the budgetary situation is not improved through savings or improvements in the collection of taxes, inflation would accelerate over the whole of the period with no obvious turning point to this pattern. The turning point which is shown in diagram 2 was thus the point where collection and state adjustment lags started to give more importance to the inflation tax while an erosion of the tax base, i.e. the real value of the money stock, worked towards the same end.

In conclusion, during the inflationary process the money supply developed a dynamics which resulted in accelerating inflation rates. However, the evidence suggests that this was a more or less steady process without obvious turning points. The Polish case shows the picture somewhat distorted since state expenditure fell drastically after the wars and the budgetary situation improved afterwards due to institutional changes. In order to evaluate the process it is important to recognise the different milestones of the development between the rebirth of the country and the stabilisation of 1924. The first turning point in the development of the money supply was the end of the wars about the borders, because, on the one hand, the government was then able to reduce expenditure and state consumption, while, on the other hand, they had more time and possibilities to concentrate on the construction of the reborn country. Their first effort was monetary unification which also became an important milestone in itself. For the first time, it became now possible to budget properly and concentrate on the completion of the construction of a tax administration, a task which was achieved at the beginning of 1922. According to calculations by Dana Durand, Poland was theoretically able to balance regular expenditure and regular revenue from 1922. However, increasing collection lags diminished revenues while the state was unable to secure state loans to cover extraordinary expenditure.[37] Collection lags only disappeared when the Polish Sejm decided on an indexation of taxes towards gold as part of a stabilisation attempt in December 1923.

[36] See statistical appendix.
[37] E. Dana Durand (1922): "Public Finance of Poland", in *Trade Information Bulletin 32, Supplement to Commerce Reports*, p. 7

THE EXCHANGE RATE

> "Every country with a currency that has fallen far below par is at the mercy of the buyer of their money, and the economically stronger who is offered - in our case - Polish marks for his goods, without bad intentions, exercises a certain monetary dictatorship."[38]

The exchange rate is the other factor in the game of economic forces that can influence price rises and, in turn, inflation as was described in chapter II. Although no one has ever argued that Poland became a victim of its negative balance of payments, an examination of the impact of exchange rates on the inflationary process is important for an overall explanation. It has to be established how far the exchange rate moved independently from the changes in the money supply and in prices. Economic theory predicts that the development of the money supply should be roughly mirrored in the exchange rate. If more money is available while all other factors remain the same, competition for goods from home and abroad increases. This results in price rises which lift the price level to match the new money supply. Since the real prices of foreign goods were assumed to be stable, the exchange rate increases their nominal value. However, there are some exogenous factors which can change this balance, e.g. foreign exchange restrictions and speculation. While the first restricts changes in the exchange rate, the latter adds to their frequency by treating the currency as a good in its own right, rather than a means of payment. The Polish mark was an unbacked paper currency, and the political situation of the country at the beginning of its independence was all but untroubled. Under such circumstances, the psychological momentum, i.e. the trust a currency gets at home and abroad, increases in importance compared to the real factors, i.e. the balance of payments and the development of public finances. With the very moment when Polish marks left the country and were traded internationally, speculation became possible. Their value was then not just determined by supply and demand, but demand was also influenced by the velocity of mark transfers abroad, i.e. the willingness of foreigners to hold Polish marks for speculative reasons. The Poles, on the other hand, could flee from their currency into stable foreign currencies when they lost confidence in the Polish mark and were looking for alternative stores of value or even means of payment. Thus demand was to increase when Polish politics suggested an economic up-swing, and it was to decrease under the "natural value" when perspectives were negative. Since both developments interfered with the real sphere of the economy by changing the prices of Polish imports and exports, the state should have had an interest in controlling speculation. Yet, it did not always have the means as will be shown later in this chapter.

In order to analyse the factors that influenced the exchange rate of the Polish mark, one has to look at the development of Poland's balance of trade first. When reborn Poland came into being, the demand for imports was exceptionally high due to destruction and

[38] O. Lehnich (1923), op. cit., p. 50

reduced output. The purchase of foodstuffs and coal was a *conditio sine qua non* for the survival of the Polish population. At the same time, the new army, which was from the very beginning engaged in the wars about the borders, had to be equipped, railways had to be reconstructed, etc. However, Poland had hardly anything to offer in return. The undersupply in Poland was so serious that a law had to be introduced forbidding the export of all goods needed within the country. Foreign trade was thus severely obstructed until the end of 1920 when it was gradually liberalised after the wars. Under the given circumstances, the Polish government concluded several bilateral agreements for barter trade, such as giving sugar for potatoes and petrol for uniforms to Czechoslovakia, potatoes and petrol for coal and railway wagons to Germany, coal for three locomotives to Austria, etc.[39] Yet, even more important in size were agreements with the U.S.A. on the delivery of foodstuffs on credit and with France on the purchase of uniforms also on credit.[40]

The foreign trade of the private sector in the first year of Poland's existence is difficult to quantify, because neither Poland, nor neighbouring Germany or Austria recorded it. Trade statistics only began in 1920. Yet, it would have been very difficult anyway to trace back this trade since German marks and Austrian crowns were still legal tenders in Poland in 1919, and the borders were wide open. In fact, probably more active than importers were smugglers at the time, or whatever one wants to call them since the first customs tariff only came into being in November 1919.[41]

Table 18: POLISH FOREIGN TRADE. 1920-1923
(million dollars)

	1920	1921	1922	1923
Imports	333.39	209.86	163.20	215.54
Exports	44.53	43.13	126.48	230.81
Balance	-288.86	-166.73	-36.72	+15.27

(Sources: R. Rybarski (1922), op. cit., pp. 45, 60; R. Sygietynski (1922): "Próbny bilans handlowy za rok 1921", in *Przemysl i Handel 20/21*, p. 328; *Rocznik Statystyki Rzeczypospolitej Polskiej 1924*, p. 88. - The Main Statistical Office only gives quantity statistics for 1920 and 1921. The figures given above are estimates by Rybarski for 1920 and by Sygietynski for 1921. However, they seem to be fairly accurate since they coincide with a trend indicated in calculations by the Polish Central Customs Office for the second quarters of 1920 and 1921 respectively, published in *Ueberseedienst 35*, 1921. Different figures for 1921 are given in E. Rose (1922), op. cit., pp. 91-92, who estimated a trade balance of $ -386.02 million while he accepted the figures for 1920.)

Table 18 shows that exports covered only 13 per cent of imports in 1920 and 20 per cent in 1921. During the war in the East, imports were particularly high due to the destruction of industry, the needs of the army and the necessity of food imports on a large scale. The

[39] A list of the contracts is given in K. Kowalewski (1920): "Umowy miedzypanstwowe o towary", in *Przemysl i Handel 4*, pp. 59-60

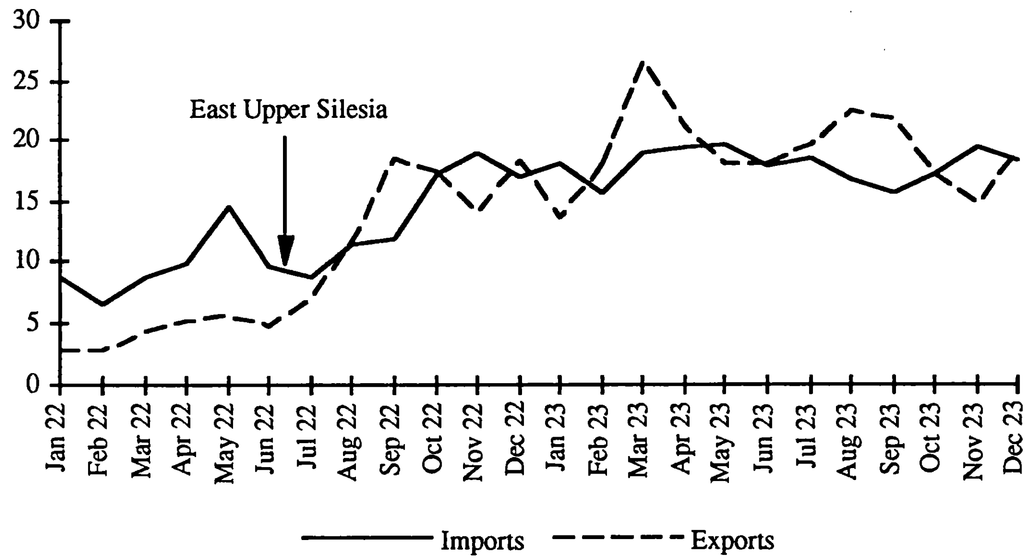
[40] The American relief credits are described in detail in H.H. Fisher (1928): America and the New Poland, New York

[41] *Dziennik Ustaw Rzeczypospolitej Polskiej 95*, 1919, p. 510

situation improved in 1921 wher. in the first year of peace, export controls were gradually removed, Polish agriculture became self-sufficient and the army was partly demobilised. However, a high trade deficit remained since industrial output was still low while imports, such as coal, fertilisers, machine parts, etc., were felt to be inelastic. The situation only improved dramatically at the time of the incorporation of East Upper Silesia into Poland on 17 June 1922 when the country gained precious coal mines while, simultaneously, exports rose in consequence of the foreign trade liberation.

Diagram 3 clearly indicates that the Polish balance of trade improved significantly over the summer of 1922 and became positive for the first time in the August of that year. The causal relationship between the changing trend and the incorporation of East Upper Silesia is evident. Having imported 372,000 tonnes of coal worth $ 1.88 million in May 1922, the figure went down to 17,000 tonnes in August worth $ 0.16 million. At the same time, Poland increased its coal exports from 43,000 tonnes worth $ 0.22 million in May to 806,000 tonnes worth $ 2.73 million in August. However, the list of traded goods shows that the improvement was only due in part to the gain of the Upper Silesian coal mines. Although Poland turned from a coal importing to a coal exporting country, the change of $ 12.93 million in exports between May, i.e. before the incorporation, and September, i.e. thereafter, is only explained by coal for up to $ 5.90 million. The data suggest a clear upward trend in exports in general. Thus, for example, the export of cotton

Diagram 3: POLISH MONTHLY FOREIGN TRADE. 1922-1923
(million dollars)



(Source: *Rocznik Statystyki Rzeczypospolitej Polskiej 1924*, p. 206)

cloth increased from 946 tonnes worth $ 0.72 million in May to 1,523 tonnes worth $

2.33 million in August. Metal finished goods increased from 2,072 tonnes worth $ 0.15 million to 29,527 tonnes worth $ 1.58 million over the same period. The reason for the continued high imports can be explained by a significant increase in the purchase of fertilisers abroad from 4,357 tonnes in June to 19,606 tonnes in August and 30,240 tonnes in January 1923. Simultaneously, prices for cotton and for metal products went up so that in August, Polish importers paid about $ 1.22 million more on the first and about $ 0.72 million more on the second commodity than in the previous month although the quantities remained almost the same.[42] Table 19 documents this overall increase in foreign trade. Quantities are used to show the increase in economic activity, a fact of which the price statistics do not always take account. The data support the argument that the incorporation of East Upper Silesia, though of enormous importance, only complimented a trend that could have achieved the same end, i.e. to balance foreign trade.

Table 19: POLISH FOREIGN TRADE FOR SELECTED GOODS. 1920-1923
(tonnes)

	1920	1921	1922	1923
Imports				
• Grain	248,316	496,065	64,957	76,004
• Coal	2,690,629	3,525,178	2,446,736	266,800
• Cotton	22,880	41,508	65,188	57,568
• Fertilisers	35,750	55,752	180,343	255,388
Exports				
• Sugar	15,528	39,455	59,280	95,139
• Coal	94,562	888,343	5,439,132	12,912,791
• Cotton Cloth	246	740	13,819	11,758
• Metal Wares	5,628	14,973	258,205	539,746

(Source: *Rocznik Ministerstwo Skarbu 1924*, pp. 68-70)

The balance of trade, however, accounts only for one part of the balance of payments which under normal circumstances is the most important determinant of the exchange rate. Speculation, likewise the flight from the Polish mark, was the other factor that influenced the exchange rate. It is very difficult to take account of the latter since the data do not allow any quantitative testing. There are only hints here and there which result in a rather vague picture. From the beginning of independence, the Polish state had foreign liabilities due to the need to fight hunger and destruction and equip the newly established army. For this end, it first sold its foreign currency reserves and then the currency of the former partitioning powers. In consequence of the need to buy these currencies on the home market for Polish marks in order to sell them abroad, the Austrian crown went up enormously against the Polish mark while the German mark did not only go up, but also

42 All data are calculated on the basis of statistics given in *Miesiecznik Statystyczny 1922*, pp. 540*, 541*, 618*, 619*, 677*, 678*; *Miesiecznik Statystyczny 1923*, pp. 93*, 94*, 193*, 194*; *Rocznik Statystyki Rzeczypospolitej Polskiej 1923*, p. 206; *Rocznik Ministerstwo Skarbu 1924*, p. 126

disappeared from the money circulation within the country.[43] The *agio* of the international value of the German mark and its value in Poland went down to 42 per cent at the end of 1919. In other words, Poles paid more than twice as much for German marks than other countries did, a relationship that could only be maintained because the Polish mark was not yet freely convertible.[44] The other means of securing foreign exchange for imports was through credits and trade contracts. However, as has been mentioned before, since Poland was not much trusted at the beginning of its existence, attempts in that direction were only of limited success. In this situation, the money which emigrants used to send home, particularly from America, became a foreign exchange inflow of major importance. These transfers can be estimated as high as $ 150 million in 1919, falling to $ 50 million in 1920 in consequence of the Polish-Russian war.[45] E. Taylor estimated the inflow of foreign currencies from emigrants and seasonal workers, together with the savings of re-emigrants as $ 405.4 million.[46] They thus outnumbered by far the capital inflow through exports in the first two years of the country's existence. Yet, the capital needs were much larger than what the state was able to secure through these channels. Thus, the government was left with only one last possibility, namely the export of its own currency to buy foreign exchange. There are no sources that help to date the beginning of these transactions, but the *agio* of the Polish mark against the German can be used as an indicator since 80 per cent of all Polish imports in 1920 stemmed from Germany and 62.2 per cent in 1921, exceeding exports several times. The two countries only came to a trade balance in 1922.[47] That such transactions actually took place, can not only be interpreted from the statistics, but they were also reported in several newspaper articles. An Austrian paper, for example, wrote in 1919: "Polish marks have recently been traded at the Wiener Platz and were extremely popular due to their rate increase at the stock exchange in Switzerland."[48] This was the same kind of speculation that influenced the price of the German mark abroad when foreigners were hoping that a monetary reform would eventually deflate the currency to its pre-war parity. Since the Polish mark was an off-spring of the German mark, a fact that was still stated on a large part of the Polish bank notes in circulation, the gold parity was the same and so were the hopes. They were even fuelled by the continuous discussion in Polish political circles about the introduction of a stable currency which went on until the collapse of the first stabilisation attempt of 1922.[49]

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[43] J. Kulikowski (1923), op. cit., p. 15
[44] O. Lehnich (1923), op. cit., p. 318
[45] R. Rybarski (1922), op. cit., pp. 48-51. The New York based Guaranty Trust Company even calculated $ 200 million for 1919; see ibid., p. 48
[46] E. Taylor (1926), op. cit., p. 282
[47] *Rocznik Statystyki Rzeczypospolitej Polskiej 1924*, p. 88
[48] "Polnische Mark", in *Polnischer Lloyd. Zentralblatt für Polens Handel, Industrie und Volkswirtschaft 13*, 1919, p. 103; see also W. Fabierkiewicz (1924b): "Zdolnosc platnicza Polski", in H. Tennenbaum (ed.): Skarb Rzeczypospolitej Polskiej, Warszawa, p. 12
[49] The international speculation in German marks was best described in C.-L. Holtfrerich (1980): Die deutsche Inflation 1914-1923. Ursachen und Folgen in internationaler Perspektive, Berlin, pp. 277-298

Table 20: DISAGIO OF THE POLISH AGAINST THE GERMAN MARK. 1919-1920
(per cent)

	March	June	September	December
1919	00.00	11.00	70.00	42.00
1920	39.00	78.00	78.50	86.75

(Source: O. Lehnich (1923), op. cit., pp. 318-319)

This currency export became a source of revenue for the Polish state in the first years of its existence. From 1 January 1921, the government even legalised payments abroad with Polish mark. From then on Polish importers were free to buy their goods for Polish marks, if they were accepted by the foreign exporter. Although additional money had to be issued to "trade" with it on the international markets, the country got goods in return. At the same time, the holders of Polish marks abroad were "taxed" by inflation just like the Poles at home. In order to determine the extent of this kind of transaction, one has to look at the balance sheet of Poland's international liabilities. Rybarski estimated that Poland had a balance of payments deficit of $ 159 million in 1920 which was covered by the export of Polish marks.[50] Again the extent of the German speculation suggests that this was a plausible explanation. Unfortunately, there are no calculations for the years 1921 and 1922. The Main Statistical Office only published their first balance of payments for 1923. However, with a trade deficit of $ 166.73[51], the expiry of foreign credits worth $ 46.6 million in that year[52] and money transfers of emigrants and seasonal workers estimated at $ 40 million[53], the balance of payments can be roughly estimated at $ -170 million in 1921. On first sight this figure seems very high and hardly credible, but the fluctuations of the exchange rate showed a very high extent of speculation particularly in that year. The growth rate of the exchange rate was much steeper than that of the money supply in the run-up to the decision about Upper Silesia and it can be assumed that, for a short period of time, the balance of payments took actually the lead in the inflation, i.e. the monetary authorities had to offer an increasing price for the Polish currency in order to sell it abroad. Yet, with the allocation of East Upper Silesia in October 1921 the exchange rate recovered enormously within only a few days and remained stable for about half a year although the trade deficit even widened.[54] At the same time, there is good reason to believe that between 1918 and 1921, Poles who received foreign currencies actually fulfilled their legal obligation to exchange them for Polish marks. At least, there are no government documents complaining about problems with the hoarding of dollars prior

[50] R. Rybarski (1922), op. cit., pp. 48-60. - It is difficult to determine whether part of the deficit was covered by proceeds from the unification of the Polish monetary system in April 1920.
[51] See table 18.
[52] See table 16.
[53] E. Taylor (1926), op. cit., p. 282
[54] There are no monthly balance sheets for Polish foreign trade in 1921, but quantitative listings for the last quarter of that year show a drop in exports and an increase in imports compared with the previous quarters; see *Rocznik Statystyki Rzeczypospolitej Polskiej 1920/22*, vol. 2, pp. 194-196

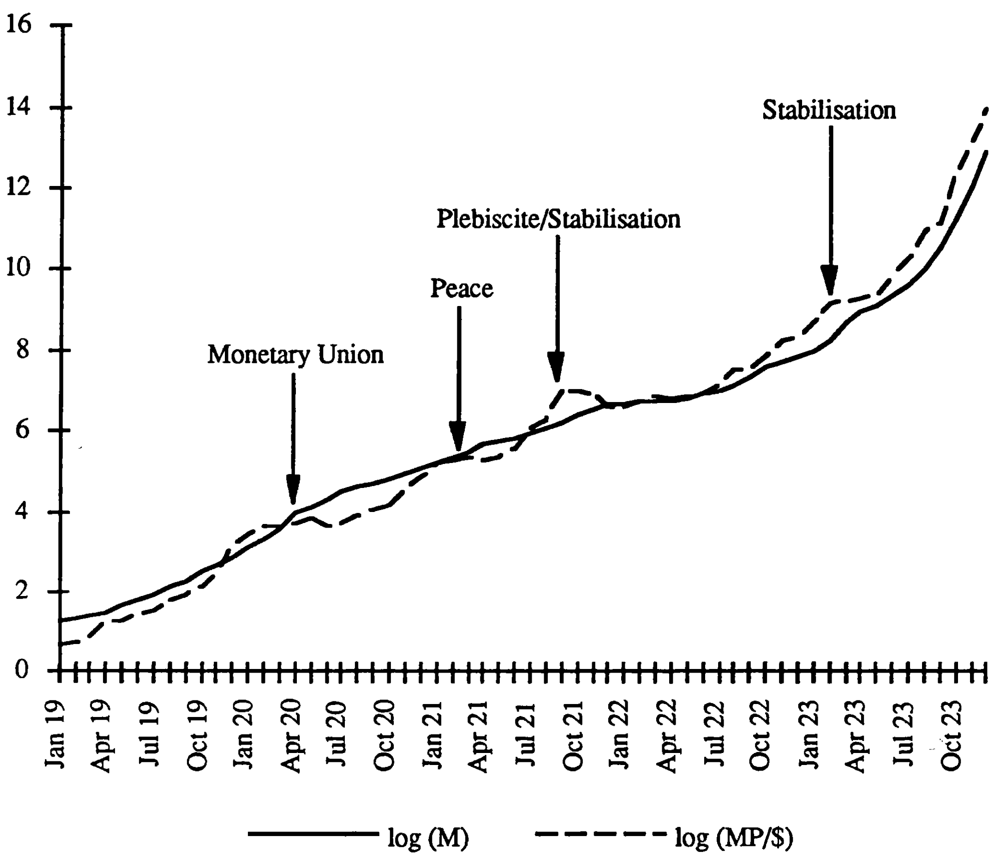
to 1922 while there are many thereafter, but also the Polish society was still so poor that most people could not afford saving the dollars that their American relatives sent them. However, the stabilisation attempt of Finance Minister Michalski in 1921/22 can be interpreted as a turning point in this development. Its failure in the spring of 1922 made it clear to everybody that fiscal stability and the introduction of a stable currency required more than just ending the wars and knowing that East Upper Silesia would eventually be incorporated. The government still saw no alternative to inflation[55], and it was easy to realise that Poland would never return to the pre-war parity. Speculation could only pay out on a day-to-day basis, but would be a loss in the long-run. It does not seem likely that foreigners continued to hold Polish marks in and after 1922, but they rather began to return the ones they had already bought. However, unlike the German case, it must be assumed that this return occurred gradually. Also, foreign speculation in Poland had been on a much smaller scale and inflation rates had been much higher so that the real value of the returning marks had very much depreciated and the impact on the exchange rate was much smaller as diagram 4 shows. In consequence, from 1922 Poland had to find other means to balance its foreign payment obligations. Yet, this was the situation when the country was particularly lucky since in 1922 Poland's trade balance turned positive due to the incorporation of East Upper Silesia. The overall trade deficit was down to $ 36.72 million while there was no movement in Poland's foreign credits. E. Taylor estimated the money transfers from emigrants as $ 30 million[56], although, with increasing inflation, there is good reason to believe that a lot of these dollars were probably not exchanged into Polish marks and thus did not alter the balance of payments. However, it seems fair to say that the Polish Republic was close to balancing its international liabilities in 1922. This trend was then continued in 1923 when according to calculations by Piekalkiewicz the country even achieved a surplus of $ 43.4 million.[57] This figure is probably not correct as the net foreign exchange holdings of the PKKP show. They actually decreased from $ 7.7 million in January 1923 to $ -0.9 million in September before they recover to $ 1.6 million in November 1923 which has to be explained by the flight from the mark.

If one now compares the development of the exchange rate with that of the money supply, one realises that the fluctuations of the first were much larger. The explanation is obvious since it has been explained that the exchange rate is mainly influenced by two different factors, namely the money supply and speculation. It has further been argued that the flight from the Polish mark, which was defined as one form of speculation, increased over the inflationary process since in the end less people were prepared to hold that currency. Chapter II argued that in such a scenario, the exchange rate could lead the process into hyperinflation if the flight of some people into other currencies causes higher inflation rates which in turn results in more people fleeing. A spiral would then develop

[55] See also chapter V.
[56] E. Taylor (1926), op. cit., p. 282
[57] J. Piekalkiewicz (1925): "Bilans platniczy za 1923 rok", in *Kwartalnik Statystyczny* 2, pp. 322-323

with inflation rates shooting up. However, diagram 4 shows that although the rates were accelerating, they remained much more moderate that in the German case. This still needs some explanation.

Diagram 4: MONEY SUPPLY AND THE EXCHANGE RATE. 1918-1923
(log of indices; 1913=1)



(Sources: *Rocznik Statystyki Rzeczypospolitej Polskiej 1920/22*, vol. 2, pp. 212, 225, 248; *Rocznik Statystyki Rzeczypospolitej Polskiej 1924*, pp. 144, 159, 284; *Sprawozdanie Polskiej Krajowej Kasy Pozyczkowej za rok 1923*, Zalacznik 2; *Rocznik Ministerstwa Skarbu 1924*, p. 126)

During the wars about the borders, the exchange rate showed a steady decline due to both the high budget deficit and the trade deficit. These two factors seem to have been more important at the time than speculation. This thesis is supported by the fact that the exchange rate showed a peak of 65 per cent in November 1920, i.e. the first month after the cease fire, while speculation should have produced a trough since the Polish outlook was much better then than in the previous months. However, November was also the month when the American relief credits were exhausted and the trade deficit had an exceptional peak.[58] Then, after the war, the situation changed. The Polish mark recovered by 10 per

[58] R. Rybarski (1922), op. cit., p. 62

cent in March 1921 when the Peace of Riga was concluded, but it fell by 111 per cent when the Silesian uprisings diminished Poland's chances to win the referendum in the areas concerned in June 1921. That is also why the mark fell by 125 per cent in September 1921, i.e. the month preceding the referendum and then recovered by 38 per cent in October when Poland was assured the coal mines of East Upper Silesia. That this was just a matter of rational expectations is proven by the fact that Poland did not actually incorporate the area then, but was only assured that it would be able to do so nine months later. The exchange rate further improved until the end of the year due to Michalski's stabilisation attempt which halted the indebtedness at the PKKP and increased confidence in Poland's future. However, the situation changed in 1922 when foreigners returned their marks and Poles began to flee into other assets. If the balance of payments had been the only driving force of the exchange rate, the change should have been for the better. Yet, both the failed stabilisation and the outbreak of the German hyperinflation after the murder of Rathenau in June 1922 combined to diminish confidence in the Polish currency.[59] People thought that if the German economy could be brought into disarray, the Polish one would probably not look better. Yet, the positive trade balance in Poland was certainly one factor that improved Poland's situation relative to the Germany one where a larger monetary overhang collapsed faster and was aggravated by the need to organise foreign currencies to pay for the reparations. Consequently, smaller inflation rates produced a smaller flight wave from the currency. It might have also been of importance that in a mainly agrarian country the people flee into commodities rather than into dollars. The argument that Poland just happened to have better exchange restrictions does not seem to be valid since the black market premium for dollars fluctuated only between 0 and 100 per cent.[60] Ultimately, the depreciation of the Polish mark accelerated only slowly until Grabski's first stabilisation attempt in the spring of 1923. However, then it was less a change in expectations which stabilised the exchange rate than interventions in the market. Just before, the positive balance of payments had increased the foreign currency reserves of the PKKP which in turn made an active intervention possible.[61] When Grabski resigned in the beginning of June, the mark collapsed, and its fall was faster than that of the money supply. However, there was no spiral that developed and pushed the exchange rate up with accelerating speed. There was a single peak in October before the rates calmed down again. Stabilisation was eventually reached with the beginning of Grabski's second stabilisation attempt in January 1924.

In conclusion, the first turning point in the development of the exchange rate was again, as in the case of the money supply, the end of the wars about the borders. Peace increased the confidence in the development of the country abroad and allowed for the export of

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[59] On the outbreak of the German hyperinflation, see C.-L. Holtfrerich (1980), op. cit., pp. 298-327

[60] See *Wiadomosci Statystyczne 1*, 1924 for the daily black market rates of October to December 1923 and *Wiadomosci Statystyczne 6*, 1924 for January to February 1924.

[61] W. Grabski (1927a): Dwa lata pracy u podstaw panstwowosci naszej (1924-1925), Warszawa, p. 15

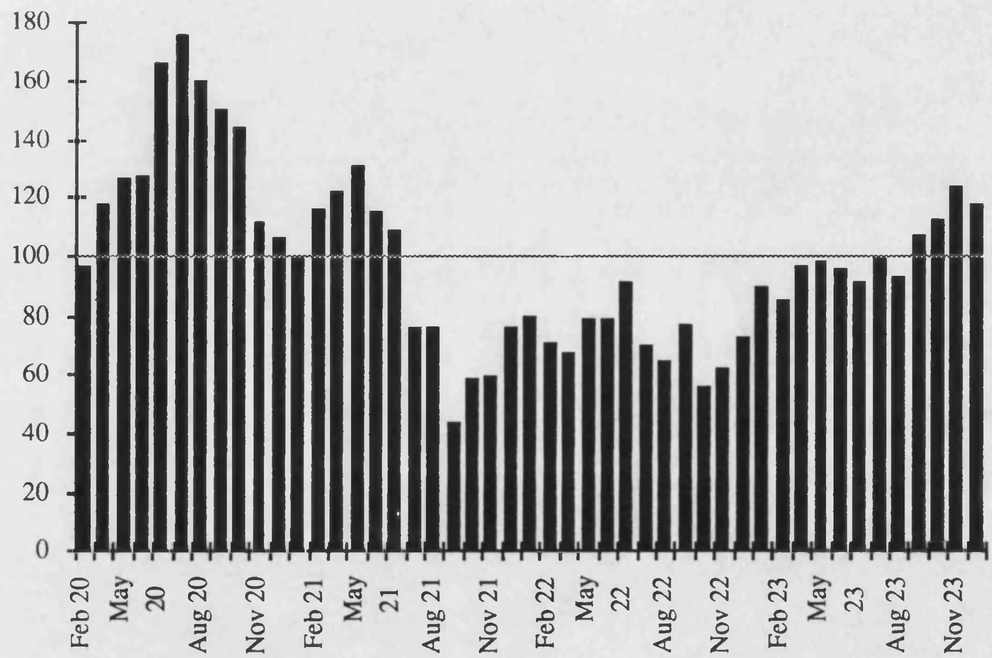
Polish marks to cover the payments deficit. The dependency on these exports lasted until 1922 when through the incorporation of East Upper Silesia and a general improvement in foreign trade the trade balance became positive. This second milestone had been assisted by the liberalisation of Polish trade during 1921. Unfortunately, the turn in the balance of trade and the restructuring of Polish finances under Michalski coincided with the outbreak of the German hyperinflation. The loss of confidence in the Polish currency was a spillover effect which exercised a negative influence. Poles were now trying to flee from their currency while foreigners were neither willing to hold Polish marks nor to invest in the Polish economy. However, positive and negative trends seem to have balance each other out so that the inflation continued its gradual development. No qualitative changes occurred which could have been interpreted as the outbreak of hyperinflation.

PRICES

The Quantity Theory of Money predicts that price developments follow changes in the money supply. If the money stock is increased, more money competes for the goods available on the market and consequently prices rise will eventually match the rises of the money supply. As far as foreign trade is concerned, the exchange rate will be the agent of change since real prices are exogenous. Yet, if, as was described in the previous paragraph, the exchange rate was not a neutral agent, but was traded as a good in its own right and thus subjected to changing preferences, then this in turn would have obviously effected prices. If foreigners bought Polish marks for speculation, foreign currencies would have flown into Poland. Consequently, their exchange rate would have fallen against the Polish mark which would have appreciated. This would have made Polish exports more expensive while lowering the prices of imports. A price level which exceeds its neutral balance level is nothing else but an overvaluation of the currency. If, however, imports were inelastic and their costs exceeded the foreign currencies that were available within the country, the monetary authorities would have had to pay a premium to everybody who was willing to sell goods for Polish marks, i.e. a speculation premium. Thus, the amount of marks would have exceeded their actual value, the exchange rate would have depreciated resulting in a lowering of export prices and an increase in import prices. Here, the price would have fallen under its neutral balance level and caused an undervaluation. The same would have happened if the Poles had started to flee from their own currency and the monetary authorities would have had to pay a premium to everybody who was still prepared to hold Polish marks rather than dollars.

In order to establish the real external value of the Polish mark over the inflationary period, one has to divide the wholesale price index by the exchange rate index. According to the Quantity Theory the fraction should always be one, or likewise 100 if given as an index number. If, however, the value of this valuation index comes to lie above the 100-mark the country is overvalued resulting in lower import prices and higher export prices. If it falls under 100, the situation of exports is eased while imports are hampered. The result of the Polish case is presented in diagram 5. Yet, it has to be interpreted with caution since both indices are based on 1913, and it is difficult to establish if prices and the exchange rate would have been in a balanced situation at the time even under the changed circumstances of new borders, new markets and new preferences. On the other hand, since this diagram should help us to explain why the Polish economy had higher growth rates in one period than in the other, the absolute figures are less important than the trends they indicate. It would thus be the turning points which make the interesting argument.

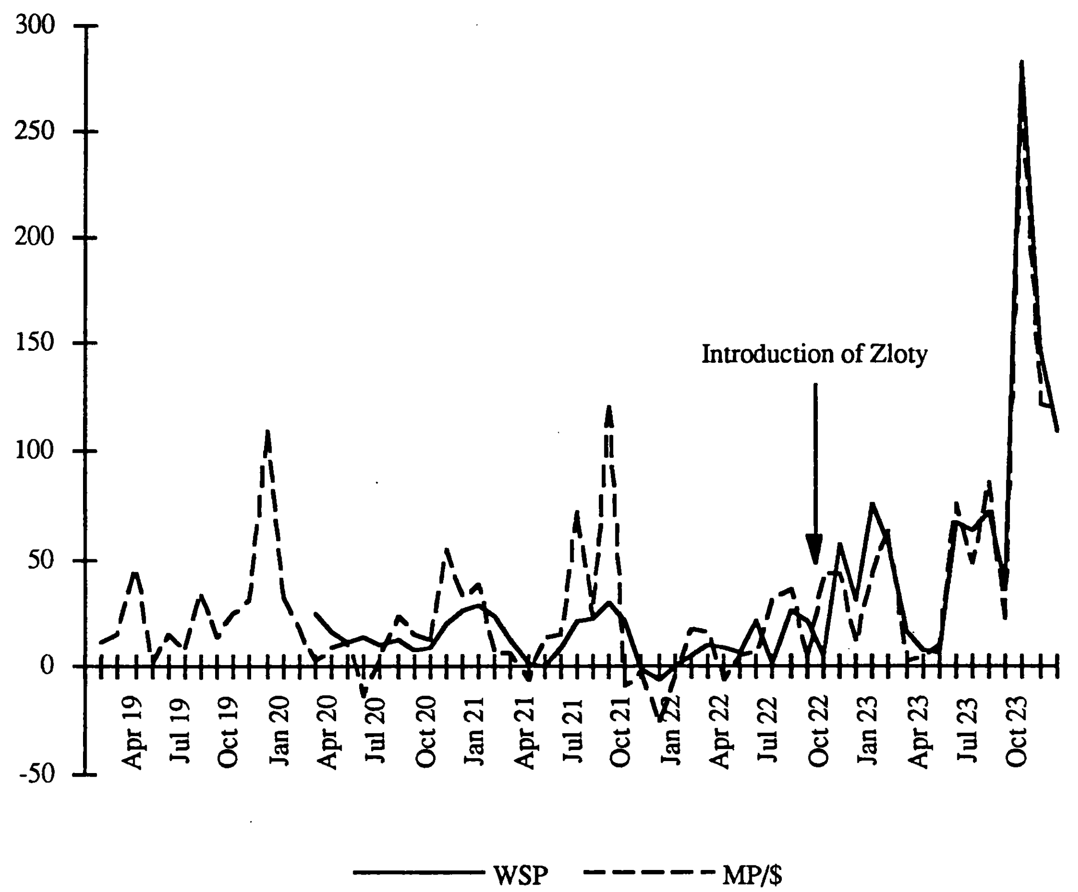
Diagram 5: EXTERNAL VALUE OF THE POLISH MARK. 1920-1923
(Ratio of wholesale price index and exchange rate index)



(Source: *Rocznik Statystyki Rzeczypospolitej Polskiej 1920/22*, vol. 2, pp. 212, 248; *Rocznik Statystyki Rzeczypospolitej Polskiej 1924*, pp. 159, 284; *Rocznik Statystyki Rzeczypospolitej Polskiej 1930*, p. 277; *Rocznik Ministerstwa Skarbu 1924*, p. 126)

Diagram 5 shows that the Polish mark was overvalued between April 1920 when the monetary system was unified and June 1921. Between July 1921 and August 1923, the index staid below 100 before it increased again towards the end of the inflationary period and exceeded the benchmark. This development can only be explained in part with the arguments given above. In the first phase, there was apparently enough foreign speculation to pay for the necessary imports. This could be explained by the positive advance of the Polish army in the East which changed in the summer of 1920 when Russian troops threw the Poles back to the doors of Warsaw. Speculation lost momentum and only took up again at the beginning of peace. When, however, the Silesian up-risisings diminished Poland's chances of gaining the area concerned expectations turned negative and did not recover fully when the decision allocated East Upper Silesia to Poland. By then, foreign trade had still only been partly liberalised and imports exceeded exports by far. Thus, Poland had to pay foreign speculators a premium for not "fleeing" from the mark. Then, the liberalisation of foreign trade in October 1921 almost coincided with the beginning of the turn of expectations about the economic development of the country in early 1922 as has been outlined earlier. The wholesale price index remained below the exchange rate index until the last phase of inflation. This last turning point needs an explanation. Why should the fraction of the two indices rise again at time when one would expect the flight from the mark the largest? One possible explanation is given in diagram 6.

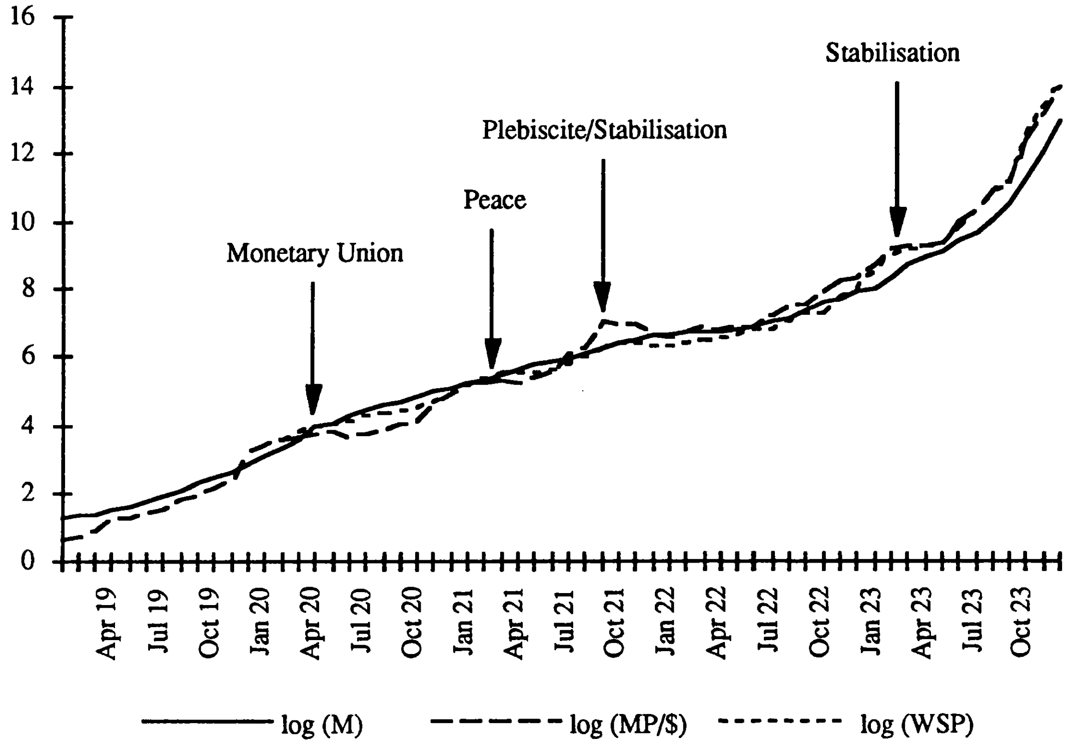
Diagram 6: MONTHLY CHANGES OF WSP AND THE EXCHANGE RATE. 1919-1923
(change in per cent of previous month)



(Sources: *Rocznik Statystyki Rzeczypospolitej Polskiej 1920/22*, vol. 2, pp. 212, 248; *Rocznik Statystyki Rzeczypospolitej Polskiej 1924*, pp. 159, 284; *Rocznik Statystyki Rzeczypospolitej Polskiej 1930*, p. 277; *Rocznik Ministerstwa Skarbu 1924*, p. 126)

At the beginning of inflation, the money supply was the driving force of nominal changes in prices. Diagram 7 shows that the money supply grew faster than wholesale prices which indicates that traders reacted somehow slowly on the fact that competition for their goods increased. The exchange rate only influenced prices were foreign trade was concerned. Every good that was either imported or the production of which required the import of raw materials was dependent on the exchange rate. However, diagram 6 suggests that with increasing inflation wholesale traders changed their pricing patterns. If they had so far used past inflation to decide about price changes, they now began to index their prices towards the exchange rate. This trend was even planned and encouraged by the government who reacted towards complaints of the business community, that the Polish mark was of no use as a standard of value anymore, by publishing daily the exchange rate of the 1922 gold, or zloty, loan.[62] The monthly changes of wholesale prices and the exchange rate show that the first started towards the end of 1922 to follow the development of the latter and match it from the beginning of 1923. From then onwards and as long as the Poles had no confidence in the government's monetary policies, the exchange rate became the sole determinant for price changes. Yet, this in turn resulted in Polish prices eventually rising above world prices.

Diagram 7: MONEY SUPPLY, EXCHANGE RATE AND WSP. 1919-1923
(log of indices. 1913=1)



[62] F. Mlynarski (1971), op. cit., p. 173; see also chapter V for a discussion of the government's intentions.

(Sources: *Rocznik Statystyki Rzeczypospolitej Polskiej 1920/22*, vol. 2, pp. 212, 225, 248; *Rocznik Statystyki Rzeczypospolitej Polskiej 1924*, pp. 144, 159, 284; *Rocznik Statystyki Rzeczypospolitej Polskiej 1930*, p. 277; *Sprawozdanie Polskiej Krajowej Kasy Pozyczkowej za rok 1923*, Zalacznik 2; *Rocznik Ministerstwa Skarbu 1924*, p. 126; E. Taylor (1926): Inflacja Polska, Poznan, pp. 22-23)

In conclusion, chapter II argued that during an inflation prices can take the lead and push an extreme inflation into hyperinflation when adjustment intervals shorten until, at one stage, prices actually increase before the money supply is expanded. The Polish example shows, however, that this is not a very likely scenario unless an external shock speeds up the adjustment process before other forces can develop which counteract this trend. If the inflationary process is allowed to continue, wholesale traders change their price setting pattern when the inflation accelerates and index their prices towards the exchange rate.

THE INFLATION TAX

The preceding paragraph showed that in the early years of the Polish Republic foreigners contributed towards the Polish reconstruction process by holding Polish marks which depreciated with increasing inflation making them a loss for the speculator, but a gain for the country's treasury. It is difficult to estimate the extent of the contributions since the data are so poor, but the country's payments deficit amounted to about $ 330 million between 1920 and 1923 and thus indicates the upper benchmark. Yet, foreigners became important for the Polish economic development not only because of their direct payments, but also because they bought Polish products at a time when Polish industry produced at much higher prices than their competitors. After World War I, Polish industry was in a parlous condition. The previous chapter already discussed that it was suffering from destruction, the lack of initiative and the raw material crisis. Yet, these temporary problems were aggravated by inherent structural deficiencies and comparative disadvantages. Thus, compared with neighbouring Germany, for example, Poland had a worse infrastructure, worse equipment in its production plants, a smaller variety of goods, with no machine industry of its own and very little of its own research capacity, a worse credit system, less international trade connections as well as more expensive working hours in real terms.[63] Under these circumstances Polish productivity was extremely low and there was no reason why there should have been any demand on the world market for Polish products apart from wood during the raw material crisis as well as some minor items. Yet, undervaluation which coincided with the liberalisation of Poland's foreign trade increased

[63] There is a more detailed discussion of these points in A. Wierzbicki (1924): "Na marginesie programu naprawy Skarbu", in *Przemysl i Handel 6*, pp. 134-139; see also S. Królikowski (1924): "Polityka celna w dobie naprawy Skarbu", in *Przemysl i Handel 7*, 1924, pp. 171-173

Polish competitiveness abroad. It worked like an export premium compensating for the comparatively high "natural prices". The new export prices, in turn, allowed the country to open up new markets for its products. The strong relation of undervaluation and exports became clear in the short recession of the winter of 1921/22 when the prices were stabilised while the exchange rate appreciated. Imports increased immediately, exports fell, and the trade deficit widened.[64] However, as has been argued before, it is difficult to quantify the impact of this trend since, on the one hand, there are no GNP figures available, while the foreign trade figures that we have do not take into account the increasing customer net which was built up by experience, on the other. There might have been months in the development of Polish foreign trade were the prices would have allowed more sales, but there were simply not enough customers.

Table 21: INDEX OF REAL PRICES AND WAGES. 1921-1923
(1914=100)

	I 1921	II 1921	I 1922	II 1922	I 1923	II 1923
Wholesale prices	115.4	65.1	75.5	70.0	85.3	86.4
Wholesale prices (industry)	..	..	86.9	86.5	110.2	114.6
Wholesale prices (agriculture)	..	..	68.4	54.3	67.8	49.8
Cost of living (Warsaw)	84.5	50.6	56.8	50.6	69.1	66.7
Industrial wages	98.0	81.0	85.0	76.0	71.0	57.0

(Sources: *Rocznik Statystyki Rzeczypospolitej Polskiej 1920/22*, vol. 2, pp. 212, 218; *Rocznik Statystyki Rzeczypospolitej Polskiej 1924*, p. 284; *Rocznik Statystyki Rzeczypospolitej Polskiej 1930*, p. 277; Z. Landau, J. Tomaszewski (1967): W dobie Inflacji, Warszawa, p. 129)

The much more important share of the inflation tax, however, was paid by the Poles themselves. Yet, it needs to be established if it was equally distributed between the different professions. Chapter II explained that theory predicts the highest share of the tax being paid by salary earners and rentiers since inflation is by definition a tax on cash balances. Salaries and bank accounts depreciate while goods maintain their real value. Yet, this seems to be only partly true for the Polish example. Although table 21 shows that real wages were always below their 1914 average and fell further with an acceleration of inflation, their index stayed above the wholesale price index between the second half of 1921 and the first half of 1923. More importantly, until the end of 1922 its value was clearly higher than that of the cost of living index which seems to be the better indicator in the discussion about the standard of living. This suggests that workers were not worse off in this period and can therefore not be seen as the main contributors to the inflation tax. Although one has to add that their savings were eroded with increasing depreciation. However, table 21 offers an alternative explanation which finds further support in observations by E. Taylor, namely that the burden of inflation was not with the same social

[64] The political impact of this recession will be discussed in chapter V; for more details about the changes in Polish foreign trade in the fourth quarter of 1921, see E. Rose (1922): Bilans gospodarczy trzech lat niepodleglosci, Warszawa, pp. 60-63

group throughout the inflationary period. Unfortunately, there are no figures for the time before 1921, but Taylor observed at the time that real prices were particularly high during the wars about the borders, an observations which seems to be supported by diagram 5, while real wages were low. This relation then changed with the liberalisation of trade in 1921 when real prices fell while real wages were maintained. Thus, industrial workers can be said to have paid for the wars and the initial reconstruction., but they improved their situation once peace changed the economic conditions in the country. At the same time, agriculture appears to have been a net gainer during the wars when agrarian prices were high due to undersupply. In this phase, only price controls exercised some restrictions on profits. Again, however, this picture changed when agrarian output increased after the cease fire and trade was liberalised. From 1921 onwards, agrarian prices were always far below industrial prices. This can be explained by the fact that foreign trade remained restricted for foodstuffs until 1924 so that there was no competition from the international markets. Of equal importance was probably that people, who want to spend more money, do not increase their food consumption, but rather buy more industrial goods, thus increasing the competition for them and consequently their prices. Thus, after the wars, agriculture was hit hardest by the inflation. A comparison with the cost of living index does not explain of their loss since it is based on the average income of a working class family and does not match the requirements of the agrarian population who grew their own food and paid no rents. For them, the relatively higher industrial prices meant a major restriction of both their consumption and their investments. This also seems to explain why agriculture stagnated before the stabilisation of 1924. They gained, however, that the debts on their land were wiped out by the inflation.

When the inflation rates accelerated in 1923 and the budget deficit widened, real wages did not keep pace with the depreciation so that now both farmers and workers contributed to the inflation tax. Yet, they were not the only groups that lost. Simultaneously, landlords made a significant loss throughout the inflationary period due to rent controls which remained in place until 1924. Also, rentiers must be seen as net contributors to the inflation tax since their savings were lost by depreciation. Last, civil servants, whose incomes were generally seen as indicators for future inflation and thus had to be kept low, lost from the very beginning. The index of their real salary reached, according to Szturm de Sztrem, only 20 in 1923.[65]

In conclusion, workers paid a much smaller share of the Polish inflation tax then theory predicted. The main burden seems to have been with the agrarian population who lost in real terms from the moment they had recultivated the fields lost in the wars and achieved self-sufficiency for Polish agriculture. The other contributors were rentiers, landlords and civil servants, a fact that was in line with economic theory. The uneven distribution of the

[65] E. Szturm de Sztrem (1923b): Place zarobkowe w okresie dewaluacji pieniedznej, Warszawa, p. 14

inflation tax leads one to conclude that Poland reconstructed its industry on the back of agriculture. Interestingly, the former dominant textile industry turned into a major problem through this means of reconstruction since the undervaluation increased the price of raw materials. Consequently, real wages were lowest in this industry and the highest share of government backed credits went into this branch.[66]

CONCLUSION

Inflation is a game with three variables. During such a period of "disturbed order" the degree to which they influence each other changes. Each of the three factors has a theoretical chance of taking the lead to push extreme inflation into hyperinflation. The driving force seems to be the adaptation by individuals to the process, i.e. the experience with past inflation. Yet, the process becomes increasingly unstable and, thus, vulnerable for "attacks" from outside factors. Testing the different possible scenarios on the Polish example, one realises that Poland was well advanced on the way towards hyperinflation, but that it had not yet reached this stage, when the stabilisation programme began, in January 1924. This contradicts Cagan's thesis that a monthly inflation rate of 50 per cent marks the entrance into hyperinflation. Poland passed this mark several times during the inflationary period without bringing about any qualitative changes to the system. What can be seen, however, is that the undervaluation of the currency, which seems to be a common feature of extreme inflations, ended before the stabilisation. This may well be a good indicator that the economy was on the verge of hyperinflation, and that the government stabilised in the very last moment before complete monetary disorder.

The important lesson for the reconstruction of Poland was that inflation provided a very favourable framework for the process, at least as far as industry was concerned. The dynamics of inflation involved a redistribution of wealth from first wage earners to industrialists between 1918 and 1921 and then from agriculture to industrialists between 1921 and 1923. Poland thus achieved a high savings quota which translated into economic growth. Inflation restricted consumption and gave a strong incentive to investment. At the same time, the undervaluation of the currency which was a direct consequence of the dynamics increased Polish competitiveness, at least for a limited period, and assisted in the sale of Polish produce abroad. The country was able to increase its exports of sugar, coal, cotton cloth and metal wares to most of its neighbouring countries significantly. However, the dynamics also restricted the positive business climate which inflation provided. When after the introduction of the theoretical zloty in autumn 1922 wholesale

[66] Dabrowski, J. (1922b): "Obecny stan kredytów", in *Przemysl i Handel 47*, pp. 658-662

traders began to index their prices to the exchange rate, the error component which had been the reason for the lowering of real prices gradually diminished, and Polish prices were eventually lifted above world market prices in late summer 1923.

V

THE ATTEMPTS TO OVERCOME INFLATION

THE DILEMMA OF STABILISATION

> "This will be our fate for now and for the future: If the currency goes up, industry falls into recession. If the currency falls, industry recovers."[1]

The core problem of Polish post-war production was its relatively high "natural prices" caused by low productivity and high costs for investments and infrastructure. The markets for Polish goods had collapsed in consequence of the outcome of World War I and new markets could only be conquered by competitive advantages. Thus, every attempt to improve Polish competitiveness had to address productivity, infrastructure, credit and/or prices. An obvious consequence should have been the lowering of wages and the extension of working hours still in 1918, but these solutions were not pursued since the workers had emerged strengthened and the government weakened from the war. On the other hand, the improvement of productivity was costly and required time. Immediate results were not to be expected from the initiative of the business community so that only the redistribution of wealth by the government was to bring about change. Firstly, the railways had to be run with a deficit to allow for the lowering of transport costs and investments into railroads and the rolling stock. Also, the state was to give credit guarantees and subsidise exports. The hampering of imports by customs barriers, on the other hand, which could have been a further remedy, was difficult to implement because the Polish Republic was from the first year of its existence bound to bilateral trade agreements with all its major trading partners. However, the same end was to be achieved by the undervaluation of the currency that lowered the prices of Polish goods relative to the international markets, thus subsidising exports and stemming imports.

This process of improving Polish competitiveness was costly and had to be financed by the redistribution of wealth. Therefore, a process of compulsory saving had to be initiated, consumption reduced and investments promoted. The successive Polish governments made inflation their tool to aim towards this end. The railway deficit was covered by revenues from the inflation tax throughout the period of extreme inflation. Real wages fell because their nominal increase was below the increase in prices. The

[1] *Short-hand Minutes of the 275. Meeting of the Legislative Sejm* (from now on: *275. Sejm*), 17 December 1921. The theoretical backing of this argument was given then shortly afterwards in J. Kulikowski (1922): "Wplyw inflacji na przemysl polski", in *Ekonomista 1*, pp. 69-78

Polish currency was undervalued from mid-1921. Exports were thus promoted and imports reduced. Credits were partly paid for by the inflation tax and partly replaced by high profits. Lastly, nobody saved and everybody shopped since money holding was expensive. However, the critical element in this system was the exchange rate. The Polish government was in no position to influence it. The undervaluation that occurred in the cause of inflation was not an economic tool introduced by conscious choice, but a side-product of the inflationary regime. It depended heavily on psychological factors. In the inflationary environment, the Polish mark depreciated, because increasingly less people wanted to hold an increasingly worthless currency. With rising inflation rates, Poles competed for foreign currencies in their flight from the Polish mark, while foreigners demanded premiums, if they were to exchange their currency for the Polish one or accept Polish marks for their goods. This trend was based on the experience with inflation that, in turn, shaped expectations. Nevertheless, expectations were also influenced by other, exogenous, factors, i.e. news which people linked with the development of the currency. Since speculation was able to reduce the real value of the Polish mark, it was also in the position to push it up or dump it even lower when expectations changed. If additional factors such as the threat of loosing the plebiscite in Upper Silesia in the summer of 1921 complimented the downward trend of the Polish mark, the currency would depreciate to a position that would be below rationality. Consequently, production would then be artificially stimulated and potential would be built up which would not be needed in the long run. The situation would invite misinterpretations. Positive expectations, on the other hand, would be able to shoot the Polish mark up to heights, again, beyond rationality. The appreciation of the currency would lead to an immediate fall in exports, an increase in imports and a consequent recession. At the same time, the situation would cause a monetary overhang abroad which would float back to Poland once expectations would calm down again. Inflation had made the Polish mark a sport for speculators.

As long as the Polish mark was low, Polish products were competitive. However, Polish foreign trade was dependent on the exchange rate, the determination of which was to a large part exogenous for the government. Every change directly affected the economic performance of Polish industry. The use of the printing press allowed for railway investments and credit guarantees. However, for these purposes, inflation worked like a tax on the holding of money. It could have been replaced by other forms of taxation without bringing about qualitative changes to the economic system. To achieve the undervaluation of the currency, on the other hand, the government needed to gain control over the exchange rate. This constellation had concrete practical consequences as far as stabilisation was concerned. Every stabilisation programme that would try to balance the state budget by an increase in revenues and a reduction of expenditure would give two impulses towards recession, because (1) the announcement of the programme would produce the appreciation of the Polish mark due to a change in expectations, while (2) its implementation would rationalise trade, i.e. reduce the incentive to spend money, rather than to save it, and consequently reduce profits. Real wages as well as the costs of credit, infrastructure and the use of public goods would increase, and the low level of productivity would immediately become apparent. Recession would then consequently result in lower state revenues and increasing expenditure. Ultimately, no one would profit from such a step. There was a strong economic argument for the continuation of inflation. Furthermore, the government also had the means to do so. They only had to impose strong restrictions on the trade of foreign currencies in order to secure that private individuals would not flee from the local currency. This would slow down fluctuations in the exchange rate and prevent the reduction of the tax base, i.e. the money stock, then index taxes to prevent collection lags, and, lastly, index credits to reduce the pressure on the printing press. These steps would hardly influence the exchange rate of the Polish mark, since it was obvious that they would not abolish, but rather strengthen the inflationary regime. However, inflation was used to allow for a large state budget that was needed to promote Polish production. This fiscal burden mobilised and exhausted the country's resources. The extent of growth achieved over this period was not sustainable in the long run. At the end of the road were an improved infrastructure and an improved machine park, but no working capital, no credit and no customers on the home market. At the same time, the level of improvements depended on the initial resources, i.e. productivity might have still been far below those of international competitors. Then, only the undervaluation of the currency and the consequent relative reduction of Polish prices could have prevented an almost incurable depression.

Since the exchange rate was the most critical element in the inflationary system, every attempt to bring public finances in order would have to start at this point. The government would have to find a means to influence the value of the Polish currency. Therefore, they would have to back it up. There were two ways towards this end. Either, an international loan could have provided the Bank of Issue with the means to intervene in the money market and establish its own exchange rate, or the Bank could have earned the necessary funds over a longer period of inflation by continued positive balances of payments. The exchange rate could have then been established below the real value to promote Polish exports. Ultimately, fiscal reforms could have replaced the inflation tax by a fairer form of levy. However, inflation, stabilisation, and reform were, above all, based on political decisions. While there might have been an economic argument to continue inflation until the total exhaustion of Polish resources, the political argument went on a different line. At last, inflation meant the continuous redistribution of wealth between different groups of society. A look at the main political factors helps to explain part of the pattern of inflation. In a rural society like the Polish one, agrarian problems automatically took priority. The core problem of modernisation in Poland was the improvement of farming structures. Industrialisation and land reform were therefore the two dominating topics in

Polish politics at the time.[2] The Left, representing workers and peasants, stood for radical land reforms, redistribution from the rich to the poor and financial stability. The Right on the other hand, representing industry and the large land owners, opposed every kind of land reform and demanded strong state interventions in order to promote Polish production. Lastly, the Centre, representing everybody else, favoured moderate land reforms and fiscal stability. Yet, as Polonsky put it: "Politics were fluid as a result of the tendency of groups of the Right and the Left to split off and join a very loosely united Centre."[3] From January 1920 the Centre, with 60 per cent of the seats, enjoyed an absolute majority over the Right and the Left, which had about 18 per cent. This situation persisted until the elections of 1922. The groups that made up the Centre lacked real cohesion, ranging from the National Peasant Union (that still had links to the rightist National Democrats) and the Christian Democrats to the Polish Peasant Party-Piast and the National Workers' Party. The major dilemma was that periods of persisting inflation would shift the political balance to the left due to increasing social pressure, while recession stemming from stabilisation attempts would shift it to the right. Since no political party had a majority, no programme prevailed. Governments were short-lived and so were economic programmes and preferences. The discussion about land reforms was a further destabilising factor. This model might seem somewhat simplistic, but so were Polish politics. As chapter III described, Polish society was not yet pluralistic and most political ideas were still determined by either national or class considerations.

Table 22: POLISH GOVERNMENTS. 1918-1923

	Prime Minister	Finance Minister
17 Nov 1918	A. Moraczewski	W. Byrka*
16 Jan 1919	J. Paderewski	J. Englich
4 Apr 1919	J. Paderewski	S. Karpinski
31 Jul 1919	J. Paderewski	L. Bilinski
13 Dec 1919	L. Skulski	W. Grabski
24 Jun 1920	W. Grabski	W. Grabski
24 Jul 1920	W. Witos	W. Grabski
26 Nov 1920	W. Witos	J. Steczkowski
20 Sep 1921	A. Ponikowski	B. Markowski*
26 Sep 1921	A. Ponikowski	J. Michalski
10 Mar 1922	A. Ponikowski	J. Michalski
28 Jun 1922	A. Sliwinski	K. Zaczek*
3 Jul 1922	A. Sliwinski	Z. Jastrebski
31 Jul 1922	J. Nowak	Z. Jastrebski
16 Dec 1922	W. Sikorski	Z. Jastrebski
4 Jan 1923	W. Sikorski	B. Markowski*
13 Jan 1923	W. Sikorski	W. Grabski
28 May 1923	W. Witos	W. Grabski
1 Jul 1923	W. Witos	H. Linde
1 Sep 1923	W. Witos	W. Kucharski
19 Dec 1923	W. Grabski	W. Grabski

*Provisional Director of the Finance Ministry

[2] See also chapter III.

[3] A. Polonsky (1980), in R.F. Leslie (ed.): The History of Poland since 1863, Cambridge, p. 132

Far from resolving the political crisis, the elections of November 1922 merely made it more acute. No political group gained a clear political majority in the Sejm. The Right, composed of the National Democrats and the Christian National Club, the principal landowners' party, had 125 seats out of 444. The Centre, comprising the Christian Democrats, the National Workers Party and the PSL-Piast, the moderate farmers' party, had altogether 132 seats. The Left, principally the Polish Workers' Party, PPS, and the radical peasant parties, had 98 seats, while the national minorities had 89. The main consequence of the election was thus to strengthen the Right, the Left and above all the national minorities at the expense of the previously dominant Centre.[4] This constellation had important implications for a possible stabilisation. A successful reform was not likely to happen before the exhaustion of Polish resources and the consequent "natural" end to the profits of industry, or the fall of the system and its consequent replacement by some form of authoritarian government. The only possible alternative could have been foreign pressure in connection with foreign aid, but, as has been argued in chapter IV, Poland excluded itself from any League of Nations Scheme while other credit was not available.

MICHALSKI 1921/22

> "During the inflationary process the governments that regarded the rapidly increasing money supply as harmful to the economy slowly became convinced that inflation might prove some sort of a blessing in disguise and could be utilised for governmental purposes."[5]

Ránki argues rather convincingly that regarding inflation as a potential contributor to the financial needs of reconstruction by deliberately restricting consumption was an idea that had not yet occurred to economists of the early 20th century. Inflation even in its moderate phase was considered to be deplorable, something that ought to be overcome. Although inflation was a result of fiscal politics, it was not part of general economic policies. It was born out of financial needs. The literature of the time shows clearly that everybody believed inflation to be harmful for the economic process. Both politicians and economists were convinced that a balanced state budget was the only thing they needed to worry about in order to achieve economic recovery.[6] It was this belief that brought the cabinet of A. Ponitowski to power. 1921 was the first year of uninterrupted peace, the first year with a surplus harvest exceeding national requirements, a year of strong economic recovery, and, at last, also the year of the ultimate decision over Upper Silesia.

[4] Ibid., p. 153

[5] G. Ránki (1983): "Inflation in Post-World War I East Central Europe", in N. Schmuckler, E. Marcus (eds): Inflation through the Ages: Economic, Social, Psychological and Historical Aspects, New York, pp. 479-480

[6] Ibid., pp. 477-478

There was an obvious upswing in the country that encouraged the parliamentarians "to combine [their] forces in order to make long-term plans for the reconstruction of the country"[7]. In late September 1921, they elected a cabinet of politically independent specialists who were to solve the country's structural problems of which the sick finances were regarded as the most urgent one. Jerzy Michalski was commissioned with curing them.[8]

Michalski was an advocate of the so called Cracower School, an association of economists at the University of Cracow. Their dogma was that the stabilisation of the currency needed a balanced budget, since budget deficits required the enlargement of the money stock and thus the depreciation of the currency in gold or dollars. The School denied any other causalities of inflation. However, because, under the given conditions, the deficit was not to be abolished and the depreciating currency not to be stabilised simply by saving, foreign credits or other forms of extraordinary revenue were needed for this purpose.[9]

Michalski's programme, that he presented to the Sejm on 4 October 1921, was in line with this theoretical approach. He explained that inflation meant a serious obstruction for the economy, because it made rational accounting impossible. That is why a stabilisation should be in everybody's interest. To solve the fiscal problems, the state would have to increase revenue and decrease expenditure. The negative balance of payments would have to be reversed by an increase in exports and a decrease in imports. Therefore, the extension of the working day would help to increase production and thus increase state revenue. Also all direct taxes would be raised and an extraordinary tax for war gains introduced. At the same time, the reduction in the number of civil servants, the sale of unprofitable state firms, and the curtailment of subsidies and credits to industry would help to decrease expenditure. The reduction of the army to peacetime strength and the raising of railway tariffs would serve the same end. Simultaneously, the liberation and promotion of foreign trade would help to balance Poland's international trade and reverse the balance of payments deficit. The transitionary period between the old and the new fiscal system was to be financed by a one-time capital levy, the so called *danina*, two thirds of which were to be paid by the agrarian sector and about one third by industry and trade. Nevertheless, a stable currency also required fiscal discipline, a good organisation, and a capable administration. Therefore, the finance minister was to have a veto on all state expenditure, new institutions to promote trade and industry at home and abroad had

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[7] A. Ponitowski, in his inaugural speech before the Sejm; see *247. Sejm*, 27 September 1921

[8] On the reasons for this coalition, see also H. Diamand (1932): Przemówienia w Sejmie Rzeczypospolitej 1919-1930 edited by A. Krieger, Warszawa, p. 254, and "Annual Report for 1921", 2 April 1923, in Public Record Office, Kew, UK (from now on: PRO), FO 371, N30/30/55,

[9] W. Malinowski (1933): Stabilizacja waluty w Polsce w latach 1924 i 1927 w Swietle literatury, Kraków, pp. 38-56; see also the collection of guiding articles by L. Bilinski, J. Steczkowski, J. Michalski, A. Krzyzanowski, F. Zweig et. al. in Towarzystwo Ekonomiczne (1931): Dziesieciolecie T.E. 1921-1931, Kraków

to be set up and the existing administration reformed. At last, this programme was to culminate in the end of state borrowing at the Bank of Issue and the stabilisation of the currency, which would make it possible to introduce an independent central bank in form of a joint stock company and the zloty as a new and stable currency.[10]

The programme was accepted by a large majority of parties in the Sejm, although parts of it were criticised. At the time, all political camps were still convinced that they should pursue "first stability and then investment".[11] Therefore, the two major points of critique raised in the discussion were not concerned with stabilisation as such, but with technical details. The addressed the very narrow time frame and the failure to valorise taxes, i.e. index them to a stable value. It was said that the programme would raise hopes for an end to state borrowing by the end of 1921 and the introduction of an independent central bank shortly thereafter. However, it could be fatal for the development of both the currency and the Treasury, if these deadlines would not be met. Given the fact that unindexed taxes were subject to various lags, this would bring about an even higher deficit than before the stabilisation.[12] Nobody realised that the exchange rate offered an open flank that was not covered by the programme at all. Also, the vagueness of the introduction of a stable currency, i.e. the problem of backing up the zloty and who was to hold the shares of the new Bank of Poland, was not mentioned during the discussion.

Immediately after the speech, the first, though only indirectly related, result occurred, namely a steep rise of the Polish mark against all other currencies. The "promise" of the new finance minister "to rule with a rod of iron over the Polish Treasury" increased confidence in the Polish currency, a trend that was further strengthened by the positive decision over East Upper Silesia only a week later. The mark rose against the dollar from 6,300 at the end of September to 3,890 at the end of October.[13] The result was an increase in export prices, while imports became cheaper. Simultaneously, the velocity of money circulation, hence the incentive to spend all money as soon as possible, fell. Therewith profits decreased and the lack of credit became apparent. Recession was the immediate consequence. Thus, the programme was doomed to failure from its very beginning. The government had no means to influence the external value of the Polish mark, as long as they continued the programme. There was no remedy for this dilemma. The introduction of import barriers could have only brought relief, because it would not have promoted exports. Besides, new import duties would have been difficult to realise since Poland was

[10] Michalski's programmatic speech can be found in *250. Sejm*, 4 October 1921, and an English summary in "Scheme for Improving the Economic and Financial Conditions of the Polish State", in *The Polish Economic Journal 8*, 1921, p. 209. The concrete theoretical background is given in S. Hofmokl (1921): Uzdrowienia waluty. Projekt ustaw zmierzajacych do uregulowania stosunków walutowych w Polsce wraz z motywami (wobec zamierzen min. Skarbu Dr. J. Michalskiego), Warszawa

[11] See also N. Davies (1981): God's Playground. A History of Poland in Two Volumes, Oxford, vol. 2, p. 415

[12] See deputies Chadzynski and Glebinski, in *252. Sejm*, 17. October 1921

[13] *Rocznik Statystyki Rzeczypospolitej Polskiej 1920/22*, vol. 2, p. 248

bound to trade agreements with almost every country that could have been affected.

Then, still in October, Michalski began to reduce the number of civil servants, close down some Polish representations abroad, and, above all, reduce government contracts. He was thus able to slim down state expenditure. The positive effect of his programme was an immediate improvement of the budgetary situation, the ultimate liberation of trade, as well as the putting in order of the fiscal administration[14], which became important for future development. The state debt that had increased by 26.6 per cent over the third quarter of 1921 only rose by 11.6 per cent over the fourth quarter. Then, when the capital levy was introduced on 16 December 1921, and the payments reached the Treasury between February and April 1922, the finance minister was even able to reduce part of the debt, so that by May 1922 it had almost reached the November 1921 level, i.e. MP 217 billion compared with MP 214 billion.[15] In consequence, one can argue that Michalski put taxes in such an order that from the spring of 1922, the Polish Treasury was capable of balancing regular revenues and regular expenditure, while only extraordinary expenditure caused by the ongoing exceptional conditions of reconstruction needs were to be financed by the danina, and later by Treasury bonds. This becomes evident in Michalski's budget for the fiscal year 1922.[16] However, industry suffered a loss that, together with the fall in exports, resulted in the rise of unemployment figures from 78,000 on 1 October 1921 to 218,000 on 1 January 1922.[17] This recession reduced tax payments and made it impossible for the Treasury to meet the deadline of halting the printing press by the end of the year. Simultaneously, while industrial output fell, credit became even scarcer, and with diminished profits, fewer funds were available for investments. At the end of 1921, the recession looked more than likely to turn into a depression, if action was not taken soon. At the same time, the deflationary policies of Michalski arouse opposition among the working class and let to a wave of strikes. d /d

In December 1921, the president of the *Association of Polish Industry, Mining, Trade, and Finances*, A. Wierzbicki, said before the Sejm that Poland saw "the improvement of the currency that was a blessing for the future, but, simultaneously, the factories stood still which was a curse for the present."[18] He then explained that Polish exports were affected by the very high exchange rate due to Poland's relatively high costs, while home trade suffered from the lack of credits and the reduction of state contracts. Since Polish industry still had not solved its structural problems, i.e. the technical backwardness and

[14] It has been mentioned before that Poland saw only now the beginning of rational accounting for the Treasury and the beginning of clear budgeting (!); see also E. Taylor (1929b), op.cit., pp. 270-278
[15] For the state debts, see table 16. The law about the capital levy was published in *Dziennink Ustaw Rzeczypospolitej Polskiej 1*, 1922, p. 1; a discussion of the implementing statutes can be found in "Danina panstwowa", in *Przemysl i Handel 2*, 1922, pp. 17-18
[16] For a discussion of the 1922 budget, see O. Lehnich (1923), op. cit., pp. 137-140, and E. Dana Durand (1922), op. cit., p. 7.
[17] J. Drecki (1929): "Bezrobocie w Polsce niepodleglej", in S.L. Zaleski (ed.), op. cit., vol. 2, p. 379
[18] *275. Sejm*, 17 December 1921

the inefficient organisation of labour, government action was needed for sometime longer. He therefore demanded (i) the continuation of all state firms, (ii) increasing state demand in all industrial branches hit by the recession, (iii) export subsidies, and (iv) the provision of industrial credit. The government agreed to this evaluation of the situation.[19] Already two weeks before this speech, economics minister Strasburger had declared his intention to help reduce production costs in order to make Polish products more competitive. He had recognised in particular the need for credit stating that "industrial credit with two signatures will be provided, i.e. without the involvement of banks, because such a credit will be cheaper."[20] Now, in mid-December 1921, he was able to report that the government had set aside the coal tax, reduced railway tariffs for the export of wood and petrol by 40 to 80 per cent, introduced various import taxes, and granted industrial credit worth MP 10 billion within less than four weeks, i.e. increased the previous level of industrial credit by 50 per cent.[21] The government then continued this policy granting another MP 10 billion over the following three weeks.[22] This was clearly a return to inflationary politics, although, this time, inflation was not used to cover the budget deficit.[23] In consequence of the government's economic policy, the money supply rose from MP 183 billion in October 1921 to MP 229 billion in December 1921 and to MP 276 billion in May 1922, i.e. by 50.8 per cent over the period, while the state debt was constant. At the same time, the exchange rate only fell by 3.8 per cent, and prices increased by 18.7 per cent.[24] This relation of money, exchange rate and prices meant the return of the export subsidy, as was shown in diagram 7, a stimulus to production, as was shown in diagram 5, and thus a recovery of Polish industry. Unemployment fell from 221,000 on 1 February 1922 to 129,000 on 1 June 1922 and continued to fall thereafter until the next stabilisation attempt in March 1923. The history of the recession then, in turn, taught the Polish leading circles about the stimulating effect of inflation and depreciation for economic development.

The economic crisis that the stabilisation had brought about resulted in a decrease of revenue for the Treasury, while unemployment benefits and subsidies increased expenditure. Thus the recession had a negative impact on the budget deficit. At the same time, industrial credits increased the money supply and the consequent collection lags resulted in a further fall in revenues. The deficit grew. Between February and May, when

[19] They did not realise that the argument contained only part of the truth. Even without structural problems, Polish exports would have collapsed, since speculation had pushed the Polish mark to a position that was beyond rationality.
[20] *263. Sejm*, 22 November 1921
[21] *275. Sejm*, 17 December 1921
[22] A. Jackowski (1922): Zycie gospodarcze Polski, Warszawa, p. 10
[23] It can be argued that even the new inflation was indirectly meant to serve the same end since these credits amounted to the equivalent of about $ 24.2 million while the share of trade and industry in the capital levy was about $ 14.7 million.
[24] See statistical appendix. - That prices increased at all was due to the danina that was passed on by traders to the customers. Prices actually fell between October and January and only started to increase when the capital levy was due; see also Chadzynski's speech in *303. Sejm*, 5 May 1922.

the danina was paid and yielded about $ 15.4 million[25], the Treasury was not only able to cover the deficit, but even paid back part of the state debt. Only when this source was exhausted, the government had to return to the printing press in June 1922. Now prices and the exchange rate reacted in accordance with the development of the money supply, since taxes, and thus consumption, had gone back to "normal". When Ponitowski's government fell at the end of June 1922 over a dispute with the president, the full extent of the failure became clear to the public. The mark fell by 32.3 per cent between June and July against the dollar.[26] The period of stability had come to an end.

In conclusion, Michalski's stabilisation attempt failed for two reasons, one political and one economic. Politically, there were still too many people who could gain from inflation, and due to the unstable political conditions, they were able to change the direction. Economically, Michalski failed to influence the exchange rate. The economic consequence of his orthodox programme was a recession caused mainly by the sudden rise in the prices of Polish goods and the consequent loss of competitiveness, but also by an increase in credit and transport costs, as well as a heavy tax burden. His shock therapy resulted in recession, which was seen at the time as a worse evil than the return to inflation. The inflation lobby then won in the dilemma situation.[27] However, this does not answer the question whether a stabilisation would have been feasible at all. The problem was that Polish industry was dependent on the further improvement of its foreign trade. Imports were needed because of structural imbalances, and exports had to pay for them. Thus, it seems fair to argue that Michalski's plan, drafted as it was, would have needed the assistance of foreign credits to provide a means to control the exchange rate.

JASTRZEBSKI 1922

> "I also want to introduce into the market a new means of payment which will not be the object of major fluctuations and which will be used for larger transactions. ... At the same time the gold loan will contribute to more stabilisation and pave the way for a complete reform in the future."[28]

After the fall of Ponitowski, a major crisis ensued when the National Democrats tried to set up a government under A. Sliwinski and were opposed by Pilsudski. Another non-party cabinet, supported by the Right and the Centre, under the conservative Nowak was

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[25] *Rocznik Ministerstwa Skarbu 1924*, p. 176
[26] See statistical appendix.
[27] The often repeated argument (see, for example, Z. Landau, J. Tomaszewski (1967), op. cit., pp. 268-269, or F. Mlynarski (1971), op. cit., p. 168) that the attempt failed because Michalski did not valorise taxes does not seem too convincing. Although inflation continued, prices were fairly stable so that collection lags only marginally affected the budget. The failure to valorise only became important in the long run.
[28] Z. Jastrzebski in his programmatic speech, in *337. Sejm*, 21 September 1922

the result. These two governments succeeding Ponitowski's now accepted inflation as a given necessity. The first stabilisation attempt had taught the Right a lesson about the blessing of an inflationary regime and the burdens of stabilisation. Thus Sliwinski argued in his inaugurational speech that only economies and an overall increase in production could solve the financial problems of the country.[29] This also remained the tenor under his successor. Nowak declared before the Sejm that inflation had to be accepted because it was a consequence of the need to reconstruct the country.[30] Both premiers made it clear that the idea of an orthodox shock therapy had disappeared from the agenda. Stabilisation became a long-term goal, and new ways to get there had to be looked for. Nowak's finance minister, Z. Jastrzebski, was put in charge of managing the new inflationary regime.

Jastrzebski was an advocate of the so called Warsawer School, a rather loose association of liberal economists in and around Warsaw. They thought that a rapid stabilisation would only be possible with the assistance of foreign credits. However, they saw no chance of assuring such funds under terms acceptable to Poland. That is why they aimed at a gradual stabilisation based on the country's own resources. Calculations by W. Fabierkiewicz showed the very low level of tax payments per capita in Poland compared to the pre-war level, which the School interpreted as mainly the result of collection lags.[31] The main working point for a gradual stabilisation should therefore be the indexation of taxes. It was not expenditure that had to be limited, but revenue that had to be optimised. They argued that Poland's post-war reconstruction programme required a large budget, and that, therefore, stabilisation would just have to replace the inflation tax by other forms of revenue.[32] Jastrzebski's programme, that he presented to the Sejm on 21 September 1922, was in line with this theoretical approach. He explained that Poland was in a very unfortunate position. It would have been desirable to build up the country on a credit basis and thus involve future generations in this enormous task. However, the lack of credit meant that the present society had to provide the entire means for these future generations through the renunciation of consumption. Inflation was a result of this situation. It helped to collect revenue where the tax system failed and it stimulated the economy as well as it kept unemployment figures down. A complete stabilisation was thus neither possible nor desirable for the moment, but an improvement of the financial conditions would be achieved by valorisation. The valorisation of taxes would increase state revenues. The valorisation of government loans and Treasury bonds would help to revive this source of revenue, and the valorisation of savings, i.e. the introduction of

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29 *324. Sejm*, 5 July 1922
30 *333. Sejm*, 3 August 1922
31 W. Fabierkiewicz (1924b): "Zdolnosc platnicza Polski", in H. Tennenbaum (ed.): Skarb Rzeczypospolitej, Warszawa, pp. 1-12; see also F. Mlynarski (1921): Zasady Reformy Walutowe, Warszawa
32 More detailed discussions of this approach can be found in S. Glabinski (1939): Historja Ekonomiki Polskiej (=Historja Ekonomiki, vol. 2), Lwów. Main supporters of this approach were Z. Jastrzebski, W. Grabski, F. Mlynarski, H. Tennenbaum, W. Fabierkiewicz.

foreign currency accounts, would provide some backing for industrial credit. Since foreign credits were unattainable for the moment, the government would use the state treasury of about $ 19.3 million and the foreign currency surplus of $ 12 million to provide the backing for an 8 percent-gold loan, half of which would be counted in Polish marks and half in zlotys. The gold coupons would be paid half-yearly in Polish marks according to the daily exchange rate or in a gold currency. These coupons would then not only be a good investment, but could also gradually become a new means of payment.[33] The plan was based on the same assumptions as the (more or less) simultaneous Russian stabilisation plan. The zloty would be introduced as a stable secondary currency that provided a standard of value for economic transactions. It allowed industry and commerce to calculate with stable prices. At the same time, the zloty could actually be used as a means of payment for larger transactions, thus reducing dollarisation. The means of payments for transactions within Poland would remain a Polish one that would facilitate their taxation. Taxation, on the other hand would also be valorised in order to secure a stable revenue. This policy would give the government time to complete the task of reconstruction and gradually improve the tax system. Industry would still profit from the inflation, while they could use this period for a gradual adjustment. Competition for the gold coupons would be fairly low at the beginning, because they would come in large denominations so that only the rich would be able to afford them. The government could then, gradually, issue additional coupons in smaller denominations whenever they got surplus funds to back them up. Thus, the good money would drive out the bad, and stabilisation would come about quite naturally.[34] Yet, the opposition to the plan was quite strong. Major criticisms concentrated on the gold parity of the zloty that was seen as too high, the use of the state treasury to back the loan, the valorisation of taxes as a useful tool to increase revenue, and, lastly, the conception of a secondary currency altogether. However, by then, there seemed to be general consensus about the main assumption, namely that immediate stabilisation was impossible and undesirable. All criticism concentrated on the management of inflation.[35]

Jastrzebski was able to introduce his secondary currency, but it remained embryonic. On 27 September 1922, he defined the gold parity of the zloty as being equal to that of the Swiss franc, i.e. 1/3100 kilogram of gold 0.900 fine[36] and released the 8 per cent gold loan[37]. However, the subscriptions that were mainly taken up by banks only brought in $ 1.5 million.[38] Industrialists and land owners apparently did not respond to the offer. The

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[33] *337. Sejm*, 21 September 1922

[34] On the Russian stabilisation and a further discussion of these points, see J. Rostowski, J. Shapiro (1992): Secondary Currencies in the Russian Hyperinflation and Stabilisation 1921-1924, London

[35] See the discussion of Jastrzebski's programme, in *340. Sejm*, 25 September 1922 (contributions by Koliszer, Diamand, et al.)

[36] *Dziennik Ustaw Rzeczypospolitej Polskiej 83*, 1922, p. 740. - The daily zloty rate was then determined by the price of gold in dollars at the London stock exchange.

[37] *Dziennik Ustaw Rzeczypospolitej Polskiej 83*, 1922, p. 741

[38] See table 15.

reason for this seems to be explained easily by the fact that half of the loan was still in Polish marks. Not only had the Poles learnt to distrust that currency, but they also had good reason to do so. Since only half of the loan was secured against depreciation, the other half was lost in the long run due to high inflation rates. The bonds thus offered no profit in real terms, but a loss of up to 42 per cent p.a. In comparison, in 1922, the inflation adjusted profit on stocks amounted to about 2 per cent p.a.[39] A further reason was probably the economic boom. Other investments just seemed more profitable at the time as the steep increases in the volume of cement, metals and machine imports indicate. In consequence, the gold loan only covered 4.3 per cent of the annual deficit of 1922, and the amount of zloty coupons was too small to play a serious role as a new and alternative means of payment. However, the daily publication of the zloty rate gradually introduced the zloty as the new standard of value, while the simultaneously introduced availability of foreign exchange bank accounts allowed for a taxation of a large part of privately held dollars.[40]

The other core of the programme, the valorisation of taxes, had no chance in the Sejm, and thus was not brought in by Jastrzebski. Since the government was dependent on the votes of the Right, the representatives of industry who feared that such a step would cause serious tax increases for their clientele were in a position strong enough to prevent such a bill.[41] Yet, the gold loan and the daily publication of its course rate became of major importance for the further development of the inflation. As was shown in the previous chapter, the indexation of wholesale prices towards the zloty rate now set in. The trend was completed by January 1923. The introduction of the gold loan thus caused, or, at least, speeded up, the emancipation of wholesale prices from the money supply. There is good reason to believe that at the same time the introduction of a new and rather theoretical standard of value slowed down the process of the flight from the Polish mark. Until the end of the Polish inflation, the exchange rate never really emancipated itself from the money supply. Apparently, the indexation of prices was sufficient for most transactions so that a swap to other means of payments was not necessary. It might have been of importance that the Poles were given a goal with the zloty. When they fled from their currency, they rather fled into the theoretical zloty than the existing dollar.[42]

In conclusion, Jastrzebski's programme contained all the ingredients for success. However, his major mistakes were to divide the loan into marks and zlotys, thus not offering a real investment alternative, and to allow foreign exchange accounts and return

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[39] Calculations based on *Rocznik Statystyki Rzeczypospolitej Polskiej 1924*, p. 160
[40] See also F. Mlynarski (1971), op. cit., pp. 172-174
[41] E. Taylor (1926), op. cit., pp. 229-231
[42] This can, of course, only be true for smaller transactions. It seems practically impossible to make large transactions in an inflating currency since everyone involved would loose. But then, on the other hand, the Grabski stabilisation of 1924 showed that there were apparently enough dollars in circulation to serve for this task.

the loan in gold currencies, thus failing to establish the zloty coupons as alternative means of payment. The inflationary regime continued, although with changes to the rules of the game. Politically, it had become obvious by now that the Right would only begin to cooperate on a feasible stabilisation scheme once the advantages of inflation were lost.

GRABSKI 1923

> "We must not flee under the cover of resignation from the enormous tasks which surround us. But we have to look at these tasks not from the point of view of one year, but of a longer period."[43]

Civil war seemed near after the murder of the first elected president of the Polish Republic in December 1922, but the crisis was resolved by the formation of a non-parliamentary Cabinet of Pacification under the widely respected General W. Sikorski. This cabinet rested on a Centre-Left majority, enjoying the support of the moderate farmers' party, PSL-Piast, disgusted by National Democrat compliance in the assassination. The positive outlook of the Polish economy after the successful incorporation of East Upper Silesia had paved the way for a shift of power and made the ongoing inflation one of the main topics in the election campaign of the autumn 1922. The political establishment was once again faced with pressure to tackle the problem of prevailing budget deficits. Thus, on 9 January 1923, the new president, S. Wojciechowski, invited all former finance ministers to a conference to discuss what had to be done. The result of this meeting was hardly promising. The gathering of specialists who had all had their share in the inflationary process only agreed that a valorisation should counteract the collection lags and guarantee for a stable revenue, but that the time for a complete stabilisation had still not come. For the time being, economies and tax improvements should be applied to ease the situation.[44] W. Grabski who had also attended the meeting and presented his ideas for a stabilisation had been rather isolated. Since his first time as minister of finance in 1920, he had left the National Democrats and joined the Centre. Under Sikorski, he was now put in charge of the Treasury again since he seemed to have the only coherent stabilisation programme acceptable to all coalition partners.[45]

Like his predecessor, Grabski was also an adherent of the Warsawer School although he used some of the tools of the Cracowers. In his programme[46], that he presented to the

[43] W. Grabski in his programmatic speech before the Sejm, in *Short-hand Minutes of the 19th Meeting of the Republican Sejm* (from now on: *19. Sejm*), 3 March 1923
[44] E. Taylor (1926), op. cit., p. 338; see also W. Grabski (1927), op. cit., p. 13
[45] F. Mlynarski (1971), op. cit., p. 174
[46] See *19. Sejm*, 3 March 1923

Sejm on 3 March 1923, he explained that the Polish economy desperately needed a new standard of value, since all accounting had become impossible due to the accelerating increase in inflation. Instinctively everybody would turn to gold or the dollar rates for this purpose, but both would be too much affected by speculation. A true and meaningful standard could only be a domestic one. That is why he suggested a "theoretical zloty" calculated on the basis of the index of wholesale prices. Such an index would be less "nervous" in its monthly fluctuations than a gold or exchange rate index. This new standard should then be applied to valorise taxes, long-term credits, and savings. He preferred such a zloty to the already existing one, because no exchange rates would be involved in its calculation and, thus, no subjective factors. Yet the valorisation was only part of a stabilisation packet. At the same time, all state enterprises would be turned into independent economic units that would be managed in the same way as private firms so that a privatisation would become possible in the long run. The reform of the state firms would begin on 1 July 1923, and should be completed by 31 December 1925. This principle would also be applied to the railways, where a balance of revenue and expenditure was aimed at. However, he repeated Jastrzebski's argument for the maintenance of a large budget, namely that "most expenditure is absolutely necessary and cannot be reduced by a state as young as the Polish."[47] That is why the programme would have to concentrate more on the revenue side. Assuming a more or less stable state expenditure, and taking the improvement of taxes through valorisation and reforms into account, the deficit for 1923-1925, i.e. the period of the stabilisation programme, would amount to zl 1,333 million[48] or $ 257.2 million. Zl 600 million or $ 157.8 million would be extraordinary expenditure that would be covered by a property levy. This extraordinary tax would be collected in three instalments over the period. Of the remaining "regular deficit" of zl 733 million or $ 141.4 million, zl 500 million or $ 96.5 million would be covered by state loans, zl 110 million or $ 21.2 million would come as foreign credits given to state firms, and the remaining zl 123 million or $ 23.7 million would be allowed to be covered by inflation. This would result in a three year period of transition during which 45 per cent of the deficit would be covered by an extraordinary tax, 46 per cent by loans, and 9 per cent by the printing press. After this process, the Treasury would be capable of balancing the budget on a regular basis. He concluded that this package would have to be accepted as such in order to function. He therefore asked for special powers that would authorise him to continue with his plan in accordance with the requirements of the moment, not having to ask parliament at each stage. The programme as such was rather confusing. Grabski juggled with two different zlotys at the same time, one that he wanted to introduce, the calculation of which was rather complicated, and the other, Jastrzebski's, that was already there and which he used for the figures in his programme. The calculation of the "theoretical", or rather "abstract" zloty was particularly complicated, because it would have caused a time lag due to the time needed to investigate prices. Thus the price setters

[47] Ibid.

[48] These zlotys are now the ones defined by Jastrzebski, i.e. zl 5.1826 to the dollar.

themselves would not have been able to use this standard. They would, as they already did, use the exchange rate for orientation. The result would be that the index would in effect again use the dollar as the only standard. The only difference an abstract zloty made was that it was a stable Polish standard, and thus made it unnecessary for smaller transactions to switch into dollars. However, this was a trend that was already prevailing after the Jastrzebski "experiment". At the core of Grabski's attempt was again the existence of two Polish currencies, the mark and the zloty, that were to circulate simultaneously, one inflating, the other backed up and thus stable. The idea behind it was, as in Jastrzebski's programme, that the good money would drive out the bad, while the system in itself could guarantee that the means of payment would always be a Polish one. Thus the exchange rate would be less affected by speculation and the flight from the inflating currency. However, there would be only one exchange rate for dealings with abroad, i.e. that of the Polish mark. Since it was obvious that the mark had no future, nobody abroad would want to hold it and the currency would continue to be undervalued. At the same time, Grabski wanted to issue new, this time completely valorised, Treasury bonds, i.e. bonds that were ensured against inflation. Again these bonds were also meant to circulate as currency for larger transactions. The major difference between Grabski and Jastrzebski was that the latter expected the inflation to die a natural death due to the introduction of the secondary currency, while Grabski tried not only to valorise taxes, but also to lift them almost to their required height. Ultimately, the programme resembled much more Michalski's attempt, with the difference that Grabski now introduced a double safety net. He checked the exchange rate with his secondary currency, while he reserved to himself the possibility, in the case of the occurrence of an unbearable recession, to revive the printing press at any time, without having to fear that this would lead to state bankruptcy. The valorised taxes would secure a stable revenue, while the new standard of value calmed down the business community. He knew that extraordinary revenues would come down eventually, since, in spring 1923, in most branches production was close to its pre-war level, and the trade balance was positive already. On the other hand, however, it was also clear that the stabilisation had to be mainly shouldered by the wealthy, i.e. industrialists and large land owners, since only they would be able to pay the property tax and buy bonds to fill the gap between expenditure and revenue.[49] However, the programme was not very popular with the Sejm. Firstly, his request for special powers was interpreted as an attack on the democratic principle of the Sejm.[50] Then, parliamentarians not only criticised the confusing use of two zlotys, but there were also serious attacks from the Right on the valorisation and on the property levy, the tenor of which was that they would bring about either a new recession or more inflation. The opposition made clear that they regarded every stabilisation attempt that was not backed by foreign credits as doomed to failure. Part of the Centre joined in the critique, and

[49] On the social aspects of the stabilisation programme, see also J. Tomaszewski (1961): Stabilizacja waluty w Polsce 1924-1925, Warszawa, p. 44.

[50] Kwiatkowski and Diamand, in *22. Sejm*, 9 March 1923

Michalski, who obviously "had seen it all before", explained before the Sejm that valorisation would increase taxes. These increases would then be passed on to the customers, i.e. prices would rise. Higher prices in turn would result in higher wages. Thus state expenditure would rise, and, correspondingly, the budget deficit. The outcome would be more inflation.[51]

Grabski was much stricter in his attempt to ban other currencies from circulating within Poland than his predecessors. Following the presentation of his programme, he first introduced very considerable restrictions on transactions in foreign currencies that made speculation difficult. He introduced high fines for black marketeers, ordered police raids, and, most importantly, abolished foreign exchange accounts for private individuals.[52] Later, towards the end of June, he even issued drastic regulations whereby the sale and purchase of foreign currencies became a Government monopoly, therewith cancelling the right of private banks to buy which they had had so far.[53] Correspondingly, his valorised six-percent Treasury bonds, the so called gold bonds, which were issued on 22 March 1923, were paid back only in Polish marks according to their daily zloty rate, and not as Jastrzebski's gold loan, alternatively in marks or gold currencies.[54] These bonds sold much better than the loan, the obvious reason being their full valorisation.[55] In contrast to the gold loan, they offered a profit of 6 per cent in real terms. They were sold out soon, so that a second series in May and a third in June were issued. Together they yielded $ 7 million.[56] The immediate result of the successful loan was that state debts grew much slower than in the preceding months. They had increased by 61 per cent in March 1923, but then the monthly growth rate of debts went back to 23 per cent in April, and to 10 per cent in May, before it started to rise again, reaching 26 per cent in June and 40 per cent in July.[57] The three series of gold bonds covered 16 per cent of the April deficit, 19 per cent of the May deficit, and 17 per cent of the June deficit.[58]

Simultaneously with Grabski's reform attempt, the exchange rate of the Polish mark remained fairly stable. There was no boost, as with Michalski's programme. Grabski had made it clear that international speculation in the Polish currency did not make much sense, since its days were numbered. It depreciated only briefly in March 1923. This

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[51] *21. Sejm*, 8 March 1923

[52] "Economic Situation in March/April 1923", 5 June 1923, in PRO, FO 371, N5087/164/55

[53] "Economic Situation in May/June 1923", 7 August 1923, in PRO, FO 371, N6787/164/55. - Also before the enactment of the law, these various institutions which were authorised to deal in foreign exchange restricted the sales to legal purposes.

[54] *Dziennik Ustaw Rzeczypospolitej Polskiej 33*, 1923, p. 215. - A further difference was that the zloty rate was not determined by the gold price in London any more, but by the exchange rate of the Swiss franc in Warsaw that had the same gold parity as the zloty. However, with an inflation rate as high as the Polish one, this manoeuvre did not cause any visible quantitative change. It only facilitated the calculation of the daily zloty rate.

[55] See F. Mlynarski (1971), op. cit., pp. 174-177

[56] See table 15.

[57] See statistical appendix.

[58] J. Zdziechowski (1925a): The Finances of Poland 1924-1925, London, p. 3

might have been partly due to increased confidence and the new foreign currency restrictions. The larger influence, however, seemed to have been government interventions in the foreign exchange market between March and May.[59]

The introduction of the gold bonds and the restrictions on foreign currency transactions were the only stabilisation means for which Grabski was able to get the Sejm's approval during his time in office. He did not really press for the restructuring of state firms, while the introduction of the property levy and the valorisation of taxes were faced with strong opposition, particularly by the lobbyists of those who would have been hardest hit by the programme, i.e. the business community and the large land owners.[60] Their combined efforts achieved the continued delay of the measures while, at the same time, they secretly negotiated for a new coalition. The following agreement between PSL-Piast and the National Democrats was a somewhat unexpected event and cut short a further implementation of the programme. The two parties accepted a compromise on land reform, which paved the way for a rightist government headed by Witos and based on a secure majority. Grabski finally resigned on 1 July 1923 when he realised that stabilisation had been removed from the political agenda.[61]

The failure of Grabski's stabilisation attempt became evident when, in July 1923, public resentment at the foreign exchange restrictions forced his successor, H. Linde, to cancel them. The resignation of Grabski in combination with the relaxation of foreign exchange transactions allowed for a flight away from the Polish mark. This, in turn, caused a significant depreciation of the Polish mark and a corresponding increase in prices. State expenditure rose due to higher prices, while collection lags diminished revenues. When Linde realised that the state debt had increased by 54 per cent between July and August, he brought a new version of the property levy bill into the Sejm on 11 August 1923, having increased the sum total from zl 600 million or $ 157.8 million to zl 1 billion or $ 193 million. This time, the bill got the approval of the Sejm.[62] The reason for the change in opinion can be found in the chain of events: The price rises after Grabski's resignation had brought about a first strike wave that had been settled by large wage concessions as well as wage indexation for several branches. Therewith, it became evident that inflation had begun to glide out of the government's hands and some remedial measures were needed. Linde got the bill passed, because, at a time when trade and industry were beginning to loose money, higher state revenues seemed to promise the return to more moderate inflation rates. The only price he had to pay to the Right to make them swallow

[59] Grabski justified the interventions in his memoirs as being "in the best interest of the Treasury"; see W. Grabski (1927a), op. cit., p. 15. However, the true reason was probably to show that his policy had already produced first successes.
[60] See E. Rose (1923): "O 'teoreticzna' walute", in *Przeglad Gospodarczy* 2, pp. 33-36
[61] Witos replaced Sikorski on 28 May 1923, but Grabski remained in charge of the Treasury; see also A. Polonsky (1980), op. cit., pp. 155-156
[62] *Dziennik Ustaw Rzeczypospolitej Polskiej 94*, 1923, p. 746

the pill was the modification in the law that payments would now be spread over ten instalments. However, Grabski's idea to tax the wealthy, because the others had nothing left, remained. The social unrest of the summer of 1923 had been a first sign that the country was approaching the exhaustion of its resources, at least those of the lower and the middle classes. The agrarian sector was supposed to contribute zl 500 million, trade and industry zl 375 million, and all others zl 125 million. Only property exceeding the value of zl 10,000 was to be taxed. Nevertheless, inflation continued since the property levy was obviously not able to produce immediate results and profits further diminished. Thus, when, at the end of the year, the monetary situation had gone from bad to worse and the attempt to secure foreign loans had failed[63], Linde's successor W. Kucharski faced hardly any opposition when he finally valorised state revenues on 30 November 1923 to prevent further tax erosion.[64]

In conclusion, Grabski's stabilisation attempt, just as Jastrzebski's, did not really get beyond the stage of programming. Most of his package was boycotted by the Right, and was then only realised later and out of context. However, his gold bonds reduced the pressure on the printing press for three months at a time, when the inflation rate had started to accelerate. Also, they provided the business community with $ 7 million of a stable currency at a time, when the value of the whole inflating money stock was only $ 44.2 million.[65] This, as well as his restrictions on foreign exchange transactions, eased the pressure on the exchange rate. Finally, with the bills on the property tax and on the valorisation of taxes that were realised under his successors, he already paved the way for his next, and then successful stabilisation in 1924. However, the stabilisation attempt seems to be an important milestone in Poland's post-war development. So far, reconstruction had been the foremost task of Polish politics, and since inflation seemed to serve this goal, power had rested with the conservatives for most of the time. Now, although they were in charge again, they had to agree to first sacrifices. The feasibility of the policy of redistribution from consumption towards investment seemed to be vanishing.

GRABSKI 1924

> "I had to go the way of my plan as I had outlined it at the beginning of 1923, but significantly speeded up. The plan had been drafted in the period of inflation, but meanwhile the country had

[63] This was a rather embarrassing story, when the Polish finance minister flew in all secrecy, unprepared and unannounced to London and Paris in October 1923, in order to beg for a loan. His demand was turned down, and the scandal at home horrendous; see "Statement made by M. Kucharski regarding objects and results of his visits to London and Paris", 19 October 1923, in PRO, FO 371, N8267729/55

[64] *Dziennik Ustaw Rzeczypospolitej Polskiej 127*, 1923, p. 1044

[65] See table 17

> fallen into hyperinflation. From this fact I drew the conclusion that all measures had to be applied at once and with concentrated effort."[66]

Grabski became finance minister again, and this time also prime minister, in December 1923 in an emergency situation. The good returns of the Polish export trade had been due to the fact that, owing to lower wages, lower overhead charges and depreciated currency, the cost of production in Poland, during the early part of the year had been lower than in most other countries, so that Polish manufactured goods competed on advantageous terms with foreign goods. Towards the end of the year, however, the cost of production had risen so enormously that Polish goods were deprived of their previous advantage, and exportation fell off proportionally. Simultaneously, the rise in the cost of living and in prices generally began to have an adverse effect on the purchasing power of the nation. This led to a significant curtailment of production. Unemployment increased, while profits fell in trade and industry. First strikes occurred in July 1923, which were settled by large wage concessions. Yet, the successive increases of wages did not keep pace with the fall in their purchasing value. Thus, in October, i.e. in the peak month of inflation, a wave of strikes set in, starting in the textile factories of Lódz, then spreading to the Dabrowa mines, and from there to the Galician railways. The government then resorted to the extreme measure of militarising the railways that almost brought about a general strike. Disturbances occurred in various places. In Cracow, that remained for some hours in the hands of workers, fighting broke out between the strikers and the military. Although order was restored in the country shortly afterwards, the "bloodshed of Cracow" was the final blow to an already unpopular government. The coalition collapsed, and Witos stepped down on 14 December 1923.[67] The conservative forces now realised that, while, on one hand, inflation had lost its function as a promoter of Polish production, any further delay in implementing financial reforms would also lead to an increase in political tensions. Thus combating inflation became of vital interest for the state and the propertied classes at the end of 1923. That is why all parties that supported the maintenance of the capitalist system proclaimed a *Treuga Dei* and accepted a non-parliamentary government under W. Grabski to carry out budgetary and monetary reforms on 19 December 1923. Grabski was put in charge again, because his programme of replacing the inflation tax by other levies rather than slimming down the budget in order to match current revenues seemed the best possible compromise to the diverse coalition.[68]

Grabski introduced his programme[69] emphasising his chief concern when dealing with

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[66] W. Grabski (1927a), op. cit., p. 32

[67] See "Annual Report for 1923", 1 July 1924, in PRO, FO 371, N5630/5630/55, and A. Polonsky (1980), in R.F. Leslie (ed.): The History of Poland since 1863, Oxford, pp. 148-151

[68] On the eagerness of the business community to get a soon stabilisation, see A. Wierzbicki (1923): "Polityka przemyslu w Polsce", in *Przeglad Gospodarczy 24*, pp. 873-883; see also Z. Landau (1983): "Inflation in Poland after World War I", in N. Schmuckler, E. Marcus (eds): Inflation through the Ages: Economic, Social, Psychological and Historical Aspects, New York, pp. 517-519

[69] *89. Sejm*, 20 December 1923

the problems of financial and economic reconstruction that Poland's sovereignty should remain unimpaired, not only in relation to other states, but also in relation to the League of Nations. His slogan, that had already become so popular, was to achieve stability "by our own means". In his programme he intended to balance the state budget and then, consequently, stabilise the currency, which would allow for the establishment of a new autonomous state bank and the enactment of a measure of currency reform. In order to balance the budget he wanted to raise taxes, borrow on the capital market, and economise in expenditure. He reminded the audience that the most important tools for increasing taxes had already been established by his predecessors, namely the property levy and the valorisation of taxes. Now these processes would just have to be speeded up. The progress of the inflation would demand immediate action to get the situation under control. That is why the process of valorisation should be completed for every source of state revenue. Yet the starting point for the stabilisation that would establish a basis for reform would be the advancement of the next two instalments of the property levy[70], now both due in the first half of 1924. The property levy would provide the Treasury with sufficient revenue to implement other stabilisation measures and give them time to work. On this basis, the most urgent problem, namely the balancing of the railway budget, could be tackled. However, since the implementation of the programme was particularly urgent and demanded immediate action, the government would need emergency powers for a period of one year. There was no opposition in the Sejm this time. All major parties greeted the programme with relief, since it seemed to offer a solution to this most burning problem of fiscal chaos. The way was open for a successful implementation.

The programme was based on the same assumptions as his previous one of March 1923, with the only major difference being an altered time frame. However, the speeding up of the process was not to be had without costs. Interestingly, Grabski did not mention any steps to control the exchange rate or even back up the new currency that was to stand at the end of a successful reform. He also failed to address the question where the needed funds would come from. At last, not only the budget deficit had to be covered, but also credit had to be provided.

Already on the day after his programmatic speech, Grabski submitted the Emergency Powers Bill to the Sejm. The preamble explained once more why special powers were necessary:

> "In order successfully to execute the proposed reform, it is essential that special powers be vested in the Government, such as those proposed in the present Act. The reform, if it is to succeed, must be rapid, and it must therefore be executed strictly according to plan. The sequence of particular measures which are to be adopted is most important and cannot be interfered with without injury to the whole scheme. The same applies to the dates on which these measures are to be

[70] The first one was collected in Autumn 1923 and was based on the assessments for land and industrial taxes. But since this instalment was payable in marks the results produced were insignificant.

passed. The reform must be rapid and any delay would be detrimental to its success. In addition, during the period of reforms questions may arise, that require immediate decision, and failure in this respect may result in a considerable delay in the execution of the whole scheme. Furthermore, some of these measures will be of a particularly confidential nature, while being prepared and elaborated, and their details cannot be prematurely divulged without causing great damage to the bulk of the population. All these requirements are not and cannot be satisfied by the ordinary legislative procedure."[71]

The Sejm agreed to his argument and passed the bill on 5 January 1924. The Senate followed on 11 January. However, they shortened the period for implementing the reforms from twelve to six months. The law allowed Grabski to (1) raise taxes, (2) change tax laws, (3) change customs tariffs, (4) sell state firms to a maximum value of zl 100 million or $ 19.3 million, (5) economise in state administration, (6) re-arrange relations between the Treasury and regional self government, (7) introduce state loans to a maximum value of zl 500 million or $ 96.5 million, (8) converse and consolidate existing state debts, (9) introduce a new monetary system based on gold, (10) establish the exchange rate between the old and the new currency, (11) liquidate the PKKP, and lastly (12) establish a new and independent central bank as a joint-stock company.[72]

As a first step Grabski tried to win public opinion. He judged that the process of stabilisation would be much smoother if it was generally credible, and the exchange rate and prices stable. However, the price of the dollar was still moving upwards, rising from MP 6.4 million on 2 January to MP 10.13 million on 8 January.[73] The minister of finance had but small funds with which to influence the money markets. The net reserves amounted only to about $ 2.5 million. Yet on 8 January, he decided to throw them on the market. It was a gamble that soon became clear, when the director of the PKKP demanded on 13 January to stop the interventions, because the reserves had fallen under $ 2 million. However, Grabski decided to continue, issuing a statement at the same time that the next two instalments of the capital levy would be due in February and March, and that from 1 February 1924, the Treasury would stop borrowing from the PKKP.[74] The statement showed Grabski's determination to end the inflationary process and people became convinced that nobody would win from a further depreciation, while a flight from the mark did not pay out any more. Speculation stopped, and owing to smaller requirements on the part of industries, the offer of foreign currencies exceeded the demand, and the mark rose against the dollar to MP 9.35 million and against the zloty to MP 1.8 million, hence the dollar depreciated by 10 per cent against the mark. The PKKP then held the rate at this point by daily interventions in the market.[75] The people had now

[71] Quoted in J. Zdziechowski (1925a), op. cit., p. 12

[72] "The Finance and Monetary Reform Act", in *Dziennik Ustaw Rzeczypospolitej Polskiej 4*, 1924, p. 28

[73] The daily exchange rates for January and February 1924 are published in *Wiadomosci Statystyczne 6*, 1924.

[74] On these moments, see the memoirs of Grabski and Mlynarski, i.e. W. Grabski (1927a), op. cit., pp. 32-36, and F. Mlynarski (1971), op. cit., pp. 187-191

[75] The reason for intervening at this point was probably because the process now seemed to continue. Also

begun to "flee from the dollar", because they feared that the conversation rate between the old and the new currency would be below the current rate.[76] Until the end of April 1924, the PKKP thus bought $ 30 million that had previously been held in private hands.[77] These interventions were to become the basis for the later monetary reform.[78] The PKKP argued convincingly that the $ 30 million had existed as a secondary currency, since they were money held within the country. Consequently, they were discounted, i.e. additional Polish marks were printed, while the foreign exchange was taken out of circulation. It was to serve as a backing for the future currency.[79]

A further step forward was made when the railway administration was separated from the state budget. The railways had to be placed on a basis of self-sufficiency, and the government grants for special purposes strictly limited. This was the only means of safeguarding the state budget against the dangers of unexpected deficits in the administration of railways. Then a railway loan was issued to cover future investment costs. However, this loan was not as successful as would have been necessary yielding only $ 2.62 million due to the strong fiscal drain of this stabilisation period. Thus a further subsidy of $ 8.4 million had to be paid by the state over the first four months of the year, and a monthly subsidy of $ 1.4 million from then onwards.[80]

Neither the interventions on the money markets, nor the favourable attitude of the population or even the revision of railway administration would have been sufficient to produce the desired results. Of much more importance was the increase of state revenue by advancing the next instalments of the capital levy. On 16 January 1924 the President of the Republic ordered the second advance on the property tax.[81] This order was most effective. Still in January, $ 0.35 million were paid in, then $ 5.39 million in February, $ 8.99 million in March, and $ 3.47 million in April. Thus, 28 per cent of the budgeted $ 64.25 million for the year as a whole was paid in over the first four months.[82] The total derived from the levy in 1924 was $ 38.47 million. The figure remained thus short of the estimate, but was more than welcome.[83] Zdziechowski is certainly right in arguing that "these 200 million [zlotys], which were, no doubt, paid up with great effort, became the

1.8 million was a round figure and, thus, seemed well suited as a conversion rate.
[76] See "Report on the economic situation for January 1924", 26 February 1924, in PRO, FO 371, N1778/253/55
[77] F. Mlynarski (1971), op. cit., p. 191
[78] Grabski's own writings do not support the thesis that this was indeed intended. It rather seems a lucky coincidence.
[79] This is the reason, why the money supply increased in spite of the stabilised state debt; see statistical appendix.
[80] J. Zdziechowski (1925a), op. cit., p. 17, 19
[81] *Dziennik Ustaw Rzeczypospolitej Polskiej 11*, 1924, p. 94
[82] *Rocznik Statystyki Rzeczypospolitej Polskiej1924*, p. 268
[83] The government was actually very pleased with the result. They had feared the sum could be much smaller. - See "Sprawozdanie z dzialalnosci Departamentu Podatków i Oplat za rok 1924", Archivum Akt Nowych, Warszawa, Poland [from now on: AAN], Kauzik 30

keystone of financial reforms, and the basis of the Budget Balance of 1924."[84] Additional revenue was then derived from the sale of some state undertakings. The government decided in March 1924 to sell several mines, mills, and woods. None of them were sold because they made deficits, but because they meant fast and easy revenue.[85]

Simultaneously, while the government secured many sources of extraordinary revenues, work also began on long-term consolidation. Between February and March, the government negotiated a credit over IL 400 million or $ 17.37 million with the *Banca Commerciale Italiana* that was signed on 9 March 1924. This sum was meant to establish a tobacco monopoly in Poland, and the proceeds of the monopoly would then pay back the credit. The loan was rather expensive. According to calculations by Z. Landau, its net value was only $ 12.54 million, but it exceeded by far the required $ 4.63 million needed for the purchase of all Polish tobacco companies. Also, the revenues from the monopoly paid back the loan easily.[86]

Although Grabski's programme was more focused on the increase in revenues than on the decrease in expenditure, efforts were also made to economise. Apart from systematic reorganisations of different state departments[87] and the gradual introduction of economies[88], the Treasury also began to allocate their funds mechanically to the departments, i.e. fixed sums that had to suffice. This went along with the introduction of monthly budgets that were introduced on recommendation of Commander Hilton Young, an English financial advisor who stayed in Poland between October 1923 and January 1924. They were supposed to check the process of stabilisation and allow for immediate action, once things started to go wrong.[89]

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[84] J. Zdziechowski (1925a), op. cit., p. 18

[85] See the *Minutes of the Meeting of the Economic Committee of the Council of Ministers for 1, 5, and 21 March 1924*, in Protokoly KERM, Kauzik 6, AAN

[86] Z. Landau (1956): "Pozyczka tytonowa", in *Zeszyty naukowe SGPS 3*. - On the importance of monopolies as a source of revenue, see also chapter III.

[87] *Monitor Polski 65*, 1924

[88] For this purpose, the Office of Special Commissioner for Economies was established on 28 January 1924; see *Dziennik Ustaw Rzeczypospolitej Polskiej 11*, 1924, p. 93 and *Dziennik Ustaw Rzeczypospolitej Polskiej 13*, 1924, p. 118

[89] This was about the only one of Young's recommendations that was adopted by Grabski. Commander Hilton Young was a British MP and a specialist in public finances. He first agreed to advise the Polish government as early as 1921, but then cancelled his mission when he was made Financial Secretary to the British Treasury. Then, in October 1923, he followed a second request by the Poles to help them with reforms. Both times, a Polish government had hoped to be able to convince the advisor of the country's desperate need for foreign credit. The advisor was then, in turn supposed to lobby for it abroad. Young's research, however, came to the result that Poland was still not capable of balancing the state budget due to high extraordinary expenditure and the inability to raise taxes to a sufficient level. He therefore suggested a gradual reform with valorised taxes, foreign exchange restrictions, and a stable secondary currency. He mentioned credit only casually saying that it would come naturally once the Polish economic outlook was improved. This was obviously not what the Polish establishment had hoped, or what they actually had time for who, at this stage, wanted a clear cut and foreign aide without political obligations. That is why Grabski asked Young to speed up his report and leave as soon as possible. On the differences between the two see E.H. Young (1924): Report on the Financial Conditions in Poland, London [presented to the Polish Prime Minister on 10 February 1924]. - Details about the first mission are to be found in PRO, FO 371, N1724/1724/55, 3 February 1921 and N4204/1724/55, 2 April 1921

As early as 20 January 1924, the president published the statutes of the future Bank of Issue, which was to be established soon.[90] Then the termination of printing marks for the need of the Treasury on 1 February 1924 paved the way for actually setting up the Bank of Poland.[91] The new monetary system was introduced by the president's order of 20 February that established the conversation rate of the mark into the zloty as 1.8 million to 1. The monopoly for the issue of zloty notes was given to the Bank of Poland that would be opened on 28 April 1924, although the minting of coins and the printing of small change to a maximum value of zl 360 million or $ 69.5 million was reserved to the state.[92] Grabski was now able to proceed to the organisation of the Bank and open subscriptions to its stock by the general public. Difficulties were encountered at first in the sale of the shares because they had to be paid in gold currencies[93], but soon the entire capital of zl 100 million or $ 19.3 million was subscribed. As with the interventions in the money market, the payments in gold currencies withdrew foreign exchange from the circulation. They were then earmarked for the backing of the future zloty. The Bank of Poland opened on 28 April 1924[94] as a semi-private institution, although controlled by the government. The stockholders of the Bank who were all private citizens were to receive a dividend of 8 per cent. Although the notes were to be convertible into gold, the date when such convertibility was to begin was to be determined later. The minimum reserve that the Bank had to hold was 30 per cent in gold or foreign exchange. Other notes in circulation above the reserve were to be secured by (1) bills of exchange and various other securities, (2) silver according to its bullion value, (3) Polish silver and subsidiary coin at its face value, which amount, however, was not to exceed 5 per cent of the total notes outstanding, or (4) a non-interesting bearing credit of up to zl 50 million or $ 9.65 million granted the government for the privilege of issuing notes.[95] The opening of the Bank of Poland was the conclusion of Grabski's stabilisation programme. The stable zloty now replaced the inflationary Polish mark. On 28 April 1924 the emission of marks was stopped, although they remained legal tender until 31 July 1924.[96] The monetary system was therewith set in order, which now allowed Poland to concentrate on fiscal and economic stability.

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[90] *Dzeinnik Ustaw Rzeczypospolitej Polskiej 7*, 1924, p. 65

[91] The state debt at the PKKP was established at MP 291,700 billion and cancelled *in toto*.

[92] *Dziennik Ustaw Rzeczypospolitej Polskiej 34*, 1924, p. 510. - Those zl 360 million, zl 150 million of which were allowed to be issued in 1924, were supposed to be an additional source of revenue for the government. The argument was that a fall in the velocity of money circulation had to be counteracted by an increase in the money supply. That is why these additional funds would not be inflationary.

[93] Payments in marks were only allowed in the last weeks before the opening.

[94] The PKKP was consequently abolished.

[95] This credit of zl 50 million is the maximum amount the Bank was allowed to loan to the government. - An English translation of the most important statutes of the Bank are in J.P. Young (1925): European Currency and Finance, Washington, vol. 2, pp. 178-180

[96] *Dziennik Ustaw Rzeczypospolitej Polskiej 34*, 1924, p. 351. - The exchange of marks into zlotys was possible between 1 June 1924 and 31 May 1925.

Within a very short period Grabski had been able to raise sufficient funds to close the budget deficit. In December 1923 revenues had been at $ 6.2 million and expenditure at $ 18.5 million. The situation improved slightly in January 1924 to $ 9.5 million and $ 18.8 million, and then the breakthrough was achieved with $ 17.6 million to $ 20.3 million in February and $ 24.6 million to $ 21.9 million in March.[97] The year finally closed with a budget surplus of $ 17 million. It was the first time since the foundation of independent Poland of a balanced budget and the Treasury not having recourse to the printing press. However, most of the new revenues were extraordinary ones. The liquidation of the PKKP brought in about $ 19.3, the profit on the mintage of coins about $ 11.6 million, another $ 3.9 million were secured through the sale of Treasury bonds, $ 5.8 million through the railway loan, and lastly $ 12.5 million through the Italian loan.[98] The large need of funds was due to the fact that expenditure was not reduced during the stabilisation, but actually increased from $ 185.6 million in 1923[99] to $ 308.7 million in 1924[100]. In conclusion, Grabski's fiscal reforms can be regarded as rather unsuccessful in the first year of their implementation. He failed to rationalise Polish public finances and simply organised funds from all possible sources to cover his very generous budget.

The most important achievement of his programme was the monetary reform. His tackling of the fiscal problems in January had resulted in an appreciation of the Polish mark. Since transactions in this currency were done almost exclusively in Warsaw at the time, after foreigners had become disillusioned with the Polish currency, he was able to intervene in the money markets and stabilise the exchange rate at an arbitrary level. He then discounted the bills that the PKKP bought, used them to remonetize the economy, and set them aside for the backing of the new currency. The subscription for the new Bank of Issue that was to be made in stable currencies only was used for the same purpose. Finally, the combination of these steps enabled him to introduce the zloty.[101] The monetary reforms then helped to normalise economic conditions. The velocity of the money and good circulation slowed down again. The value of the money supply increased, i.e. the economy was remonetized.[102] Savings increased from $ 0.9 million in December 1923 to $ 15.3 million in the same month of 1924.[103] Price setting and accounting in general became rational again. Thus a basis was given from which to operate fiscal and economic reform.[104] Yet, the programme had one dangerous negative

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97 *Rocznik Ministerstwa Skarbu 1924*, p. 123

98 "Memorandum on the Economic Situation in Poland", 8 November 1924, in Bank of England Archive, London, UK, Ov 110/21, 3216/3

99 See table 14.

100 *Rocznik Statystyki Rzeczypospolitej Polskiej1924*, p. 265

101 The introduction of a new currency was not really an achievement, since, at least in theory, it is unimportant, whether you call your currency 1 zloty or 1.8 million marks. It is the stability of the exchange that matters.

102 The foreign currency reserves of the PKKP had only been $ 2.4 million at the end of December 1923, but then increased to $ 21.4 million at the end of April 1924.

103 *Rocznik Statystyki Rzeczypospolitej Polskiej 1924*, p. 285

104 See also J. Zdziechowski (1925b): Poland's fiscal restoration, Brussels, pp. 5-7

consequence, namely that it was doomed to result in a significant fall in home demand. Firstly, the replacement of the inflation tax by the property levy shifted the tax burden from money holders to property owners. Then the same people were offered state loans, bonds and the shares of the Bank of Poland with relatively high interest rates at a time, when economic activity had already slowed down and the prospects of other profitable investments had seemingly faded away. Also credit became scarcer. In consequence, investments would be significantly curtailed. The customers, on the other hand, had lost their incentive to buy whatever was available. They started to save again and spent their money more slowly and rationally. All these factors would ultimately result in recession. The only remedy could have been offered by increases in exports. At last, the monetary reforms had enabled the government to use the exchange rate as a tool to promote Polish goods on the world market.

CONCLUSION

The Polish inflationary period saw four attempts to stabilise the inflating currency through fiscal and monetary reform. Interestingly, although the first three were unsuccessful and very different in their approach, they all influenced the course of the inflation significantly. First Michalski's attempt directed the public eye towards the monetary problem. Consequently, his failure then destroyed all hopes in an improvement of the fiscal situation within the near future, and negative expectations allowed for an acceleration of inflation. At the same time, the first recession that he had brought about changed the perception of inflation. The Right became convinced now that inflation actually served their interests. It thus became more difficult to find a consensus for further stabilisation attempts, at least as long as trade and industry were able to gain from the process. Then Jastrzebski introduced the zloty and therewith achieved the indexation of wholesale prices towards the exchange rate. He might have thus postponed the outbreak of hyperinflation because he took some pressure from the dollar, but at the same time he doomed the inflationary regime to failure because the indexation caused price rises of Polish products over world prices. Lastly, Grabski intensified the trend which Jastrzebski had initiated. However, he then provided the tools that later helped to speed up the ultimate stabilisation.

Politically, the increase of inflation over the period was accompanied by a polarisation towards the more radical policies. The "winners" grouped themselves on the Right, while the "loosers" found themselves on the Left. The previously dominant Centre lost its position after the failed stabilisation attempt of Michalski. However, since Poland was dependent on reconstruction and industrial growth, the Right dominated for most of them time. Only the increasing exhaustion of resources brought the two camps together again, and, with the outbreak of hyperinflation, united them in the attempt to stabilise a system from which nobody gained anymore.

From an economic point of view, all stabilisation attempts shared in the same mistake of failing to realise that the critical element of the inflationary regime was the external value of the currency. It seemed rather coincidental that the final stabilisation attempt was successful, since the interventions in the money markets and the rediscount of bills of exchange had not been part of Grabski's original programme. Thus, the final conversion rate of 1.8 million marks for the zloty was not a product of conscious choice. However, Poland was still lucky to reform simultaneously with the outbreak of hyperinflation and not afterwards, because the economy was thus spared serious disruptions. Exploding inflation rates would have distorted relative prices beyond repair, at least for a considerable period, disrupted trade relations, demoralised society and ultimately weakened Poland's democratic institutions.

VI

THE REAPPEARANCE OF INFLATION

THE PROBLEM OF REMONETISATION AND CREDIT

"The anaemia of capital, likewise the hunger for credit, is at the core of our recession."[1]

The country which Grabski took over at the end of 1923 differed significantly from what it had been four years before. The borders had been secured and were internationally recognised. Reconstruction was almost complete. Infrastructure had improved substantially. Trade controls and the system of rationing had been abolished. Production had reached its pre-war level in most industries. Polish export trade had found new outlets that compensated for the collapse of the old markets. Literacy and schooling were improving steadily. Finally, his reforms then introduced a stable currency that allowed for the ultimate normalisation of economic conditions. Thus, state interventions which were of vital importance at the beginning of Polish statehood had lost their urgency. The other side of the medal, however, was that Poland had had to pay a price for its gain of independence. The war had caused significant destruction, and unification then added to the costs of reconstruction. Since it was impossible to include future generations in financing this process through credits, the nation had to pay for it by the mobilisation of the country's current resources. Thus, at the end of inflation, capital was extremely scarce. Furthermore, apart from drawing on the substance of the Polish economy, inflation also caused distortions in different markets. Thus, banks, for example, had mushroomed due to the boom in speculation and so did middle-men due to the great profitability of trade. At the same time, inflation had brought in its train serious misalignments in relative prices. It had allowed for a general boom in industrial production and consequent high prices due to the given incentive to reduce cash balances, while agrarian prices had fallen in real terms in consequence of the restrictions on food exports. With monetary stability, a process of structural reform had become inevitable.

Money was another problem of the new regime. The velocity of money circulation had increased over the inflationary period while individuals had reduced their cash balances. This, taken together with the flight from the Polish mark into other assets, had reduced the real value of the money stock. Now, with and after the reforms, the monetary authorities needed to remonetise the economy. Therefore, they had to find the right money sup-

[1] F. Mlynarski (1925a): Kryzys i Reforma walutowa, Lwów, p. 65

ply. This was a difficult task and the distorted structure of the Polish economy further aggravated it. It was more than likely that after the stabilisation some initial inflation and deflation would occur due to the search for the right price level. Post-inflationary developments were thus difficult to interpret.

When Grabski took over the government in December 1923, the decline of Polish production had already set in. Prices were chained to the exchange rate and since the exchange rate index grew faster than the money supply index, prices overshot world prices.[2] Consequently, Polish exports decreased and imports rose. Unemployment started to grow, reducing home demand even further therewith. Stabilisation added to this trend by rationalising transactions. With a stable currency, good circulation and money circulation slowed down because people had no pressure anymore to spend their money as soon as they received it. Saving became possible again and the incentive to buy was lost. Simultaneously, transport costs increased due to the government's attempt to balance the budget and profits which previously had allowed for large investments were taxed away in consequence of the property levy. Likewise, the subscription to the Bank Polski, the railway loan and the new Treasury bonds offered alternative investments to innovation that were more profitable. These factors resulted in a falling-off of production, a series of bankruptcies, rising unemployment and, ultimately, political pressure to tackle the problem.

Possible solutions to the problem of economic depression included the improvement of the international competitiveness of Polish production as well as an increase in the purchasing power of the home market. Foreign trade could have been one locomotive of growth, but also home demand had a substantial potential once Poland was able to solve its structural problems. Given the state of the Polish economy in 1924, a positive trade balance would have seemed vital. If Poland had undervalued its currency as one component of the reforms, exports would have increased and imports fallen. Consequently, Poland would have exported goods and imported foreign exchange. The foreign currency reserves of the Bank Polski would have increased allowing the Bank to issue additional money. Therewith, Poland would have widened its market and found an outlet for its production. A stable Poland with positive growth rates would have ultimately attracted foreign investment and allowed for an inflow of foreign capital. In fact, the reforms made it very easy for the monetary authorities to undervalue the new Polish currency. The stabilisation rate of PM 9,350,000 for the dollar was only ten per cent below the highest peak of inflation at a time when the value of the money stock had fallen to about 30 per cent of its real value due to the flight from the Polish mark and the increased velocity of money circulation. An overall decrease in prices followed the stabilisation showing that

[2] The price of Polish coke, for example, exceeded the price of Belgian coke by a factor of 1.6 and Polish coal exceeded British coal by a factor of 1.5. See "Stan ogólnego przesilenia przemyslolego", in *Przeglad Gospodarczy 3*, 1924, pp. 125-127

money was scarce. The monetisation of foreign exchange held by individuals was only one step to remonetise the economy, but prices continued to fall even afterwards. The monetary authorities would have now had to allow a short period of deflation in order to pull the Polish price level below international prices. Polish foreign trade could have then continued or even gone beyond its performance during the inflationary boom.

By the end of 1923, industry had been mainly reconstructed and capacities had been built up that were never fully utilised. One problem which inflation had hardly influenced was the overpopulation in the countryside. On most farms, every family member worked so as to secure a bare minimum of subsistence; most probably, their marginal product was extremely low, if not negative. Employing them came close to being a charitable act on the part of the head of the family. However, the inflationary period had seen migration only on a very limited scale while land reform had been discussed, but had hardly made any progress. Hence, social development offered a significant potential for an increase in home demand. If a reduced work force had achieved the same agricultural output, while industry would have absorbed the former surplus labour, growth would have come about naturally.[3] To achieve an increase in home demand, industry had to lower its costs, while agrarian prices had to rise. The first would have made agrarian investment cheaper while the second would have allowed for profits in agriculture and lifted the purchasing power of the agrarian sector. At the same time, the government should have given incentives for migration from villages to towns, i.e. from agriculture into industry, and more land to the individual peasant through land reform. However, preconditions would have also been the constant improvement of infrastructure to facilitate internal trade and the lifting of the rigid social legislation, i.e. the indexation of wages and the eight-hour working day. This should have freed, at least, part of the Polish growth potential. Consequently, increased local demand would have helped the country out of recession. High interest rates would have given an incentive to save. Simultaneously, profits would have replaced credit for the time being.[4]

With the stabilisation of 1924, Poland had reached a turning point in its post-war development. It was now to the decision makers to agree on a path leading towards a new economic vision to take over from here. However, with the establishment of an independent central bank, a new player had entered the stage. Grabski based his new economic system on two pillars: a balanced state budget and a stable external value of the currency. The finance minister was responsible for upholding financial stability, i.e. for controling budgetary discipline. His tools were regular direct and indirect taxes, monopolies, custom tar-

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[3] See also the Polish discussion at the time: A. Wierzbicki (1924): "Na marginesie programu naprawy Skarbu", in *Przemysl i Handel 6*, pp. 134-139 and S. Królikowski (1924): "Polityka celna w dobie naprawy Skarbu", in *Przemysl i Handel 7*, pp. 171-173

[4] Part of the argument is given in E. Taylor (1927b): " Przyczyny spadku zlotego", in *Ruch prawniczy, ekonomiczny i socjologiczny 1*, p. 70*. See also W. Grabski (1927a): Dwa lata pracy u podstaw panstwowosci naszej (1924-1925), Warszawa, p. 46

iffs, the capital levy, treasury bonds, as well as the limited issue of coins and small change. Monetary stability, on the other hand, was to be safe-guarded by the independent Bank Polski. The bank law foresaw a minimum cover of all money in circulation of 30 per cent. Thus, the exchange rate was to have a self-adjusting mechanism since it was linked to the money supply. In the case of Poland having a negative balance of payments, gold or foreign currencies would flow out of the country. With smaller reserves, the Bank Polski would consequently have to reduce the money supply. The reduction would initiate deflation. Polish prices would fall. Consequently, imports would decrease and exports would rise. Ultimately, the balance of payments would come into equilibrium again.

The central bank had a very complex task because it had to carry out remonetisation and provide credit. Apart from the difficulties already mentioned, a further problem was that there were two issuing bodies, namely the Bank Polski and the state. The Bank was aware that the government had the right to issue up to zl 150 million or $ 28.9 million in coins and small change over the year 1924 and another zl 200 million or $ 38.6 million thereafter. Yet, the Treasury would not issue the entire sum at once, but only in "instalments" whenever a temporary deficit made it necessary. It was thus difficult for the Bank to control the money circulation. The non-interesting bearing credit of up to zl 50 million or $ 9.65 million to be granted to the government at any time for the privilege of issuing notes further complicated the task.[5]

The main problem of economic reforms, however, was that of political consensus. Grabski's cabinet that was commissioned to stabilise the economy stood above parties. It was the attempt to mobilise all social forces in order to solve the country's fiscal and monetary crises. Yet, although most parties supported the prime minister in this effort they remained fundamentally different in their economic programmes. Every attempt of structural reform could have put the government at risk. Grabski was thus restricted to a policy of consensus that he was only to achieve for monetary affairs. That is why Grabski asked for emergency powers in the first place, namely to get his stabilisation packet through before party strife could set in. Already then, the first difficulties appeared when the Sejm limited the special powers to a period of six months and, furthermore, only to particularly specified action. These restrictions had been demanded by *Lewiatan*, the employers' interest group of industry, mining and trade, that represented the social group that was hardest hit by the programme. It was thus clear from the start that after the initial phase of stabilisation Grabski would face serious opposition to whatever path he would decide to take.[6] Under the given circumstances, it had to be expected that Poland would

[5] About details of the monetary reforms, see chapter V.

[6] An observer of the Bank of England wrote in February 1924: "The months of almost certain deficit until October will probably be discounted in advance by opinion and provoke trouble in June. By about that time, too, the old political hands, whom Grabski had displaced, will have probably reaasembled their forces and be ready for battle." See "Letter from Mr Nixon to R. A. Leeper, British Legation, Warsaw", 19 February 1924, in Bank of England, OV 110/21, 3216/3

start the reform process with a Centre-Left programme, but would bow to the Right soon due to the post-inflationary crisis. The government would face opposition from the Left in an effort to lower the costs of industrial production by extending working hours or lowering wages, but also in attempting to lift agrarian costs by liberalising the trade of foodstuffs because of the relative rise in the cost of living for lower income groups. The Right, on the other hand, would demand credit, subsidies, state contracts and tax exemptions. The situation resembled the earlier stabilisation of Michalski. Inflation would ultimately reappear, and the stop-and-go process would continue. Economically, the situation would please no one. At the same time, politicians would move alongside the economic development from the Left to the Right and back. The lack of party discipline would further strengthen such a process. Ultimately, everybody would be disillusioned by the political system and the demand for leadership would grow louder.

GRABSKI AND THE NEW INFLATION

"To place a tax on capital is like cutting down fruit trees to have timber!"[7]

When Grabski took over the premiership he had a clear idea about what he wanted to achieve. As he explained later in his memoirs, he aimed at structural reforms increasing the purchasing power of the agrarian sector. A revised land reform act was to give more land to the peasants, while the liberalisation of food exports would raise agrarian prices. At the same time, the liberalisation of foreign trade in general by introducing a new customs act would confront Polish industry with international competition enforcing a lowering of its production costs. In consequence, profits in agriculture would have caused an economic upswing. Industry in turn would have had to increase its workforce enabling it to absorb the agrarian surplus labour. Simultaneously, tax payments would have increased strengthening the state therewith. Ultimately, industry and agriculture would have come into balance abolishing structural misalignments and recreating the state as an organic entity.[8] Yet, the main problem of this vision was that it set a long-term goal in a political environment that did not entrust him with unlimited powers. The lowering of production costs required improvements in productivity. They, in turn, needed capital. However, bank deposits were exceptionally low while profits were skimmed off by taxes. Polish taxes increased from about zl 12 to zl 52 per capita. The total amount of revenues exceeded the money stock by a factor of 2.5.[9] Furthermore, industry and commercial

[7] M. de Lasteyrie, quoted in J. Zdziechowski (1925b): Poland's Financial Restoration, Bruxelles, p. 12

[8] W. Grabski (1927a), op. cit., pp. 42-49. On his view about Polish agriculture, see also W. Grabski (1929): Historja Wsi w Polsce, Warszawa

[9] S. Szeps (1926): Die Währungs- und Notenbankpolitik der Republik Polen, Basel, p. 89

farms now paid the largest part of state revenues since taxation was progressive and only people whose income exceeded a certain income level had to contribute to the property levy. This situation contrasted significantly with the inflationary period when the inflation tax was paid to a large extent by money holders, and producers were allowed huge profits. The state of affairs was further aggravated by the rise in transport costs that was part of the stabilisation packet, and the high price level that hampered Polish exports. Part of the problem was that during the inflationary process, most firms invested in quantity and not in quality. Now, improvements were only to be achieved in the short-run by the prolongation of working hours. This was a seemingly impossible task as previous attempts had shown. At last, Grabski's scheme did not include any provisions which would have ensured that any capital would be invested and not consumed. After a period of first war and then enforced saving, it was only too likely that consumption rates would increase.

Grabski's action was only determined in part by his economic programme. The depression in industry that had set in towards the close of the year 1923 deteriorated in 1924. Although real prices came down with the beginning of the reforms, unemployment started to grow and rose from 68,000 at the beginning of January to 110,000 at the end of March 1924.[10] Simultaneously, the trade balance that had been positive in January and February turned negative in March 1924. In this situation, the government, knowing that the Polish textile industry was most sensitive in its reaction towards exchange rate fluctuations, tried to bring at least some relief when it placed a major order for uniforms at the textile factories of Lodz at the end of January 1924, just before the printing press came to a stop.[11] Then, only shortly afterwards, it suspended the coal tax in February 1924[12], a tax which was almost exclusively paid by industry since private households burned wood. A next step followed in April when the government lowered transport prices and taxes for goods exported abroad.[13] However, Grabski refused to introduce import barriers to protect Polish production. He believed that if Polish prices were unable to compete with international prices Polish firms would have to start to work more in order to compensate for inferior productivity. He started a campaign therefore attempting to reduce the number of public holidays of which Poland had more than any other European country. He also introduced the 10-hour working day in state owned coal mines and reduced their wages. Yet, his attempt to abolish the law about the 8-hour working day for the whole of Polish industry failed in the summer of 1924 due to hefty strikes that broke out immediately in all parts of the country. He was more successful in trying to raise agrarian prices. From May, Grabski lowered gradually the number of export restrictions on foodstuffs[14] and, in

[10] *Rocznik Statystyki Rzeczypospolitej Polskiej 1924*, p. 284

[11] W. Gieysztor (1924): "Przemysl Polski w walce z przesileniem", in *Przemysl i Handel 8*, pp. 197-199

[12] *Dziennik Ustaw Rzeczypospolitej Polskiej 16*, 1924, p. 164; *Dziennik Ustaw Rzeczypospolitej Polskiej 44*, 1924, p. 454

[13] *Dziennik Ustaw Rzeczypospolitej Polskiej 30*, 1924, p. 303

[14] See the *Minutes of the Meeting of the Economics Committee of Ministers (KEM) for 10 and 24 May*

June, he introduced a new, more liberal, customs tariff.[15] Yet, none of the government's actions turned the general outlook of the Polish economy. Production continued to fall and, consequently, unemployment grew due to the weak internal market. A particularly bad harvest in the summer and autumn of 1924 further aggravated this situation.[16] The trade balance remained negative. The government was faced with a dilemma. On the one hand, it knew that the economy had to readjust, on the other, however, rising unemployment exercised strong pressure for state interventions. That is why Grabski started to give credit guarantees to some big firms and to agriculture in the early summer using temporary budget surpluses. He also introduced a maximum discount rate of 24 per cent in June and urged the Bank Polski successfully to lower its discount rate from 12 to 10 per cent in November 1924.[17] He was therewith giving in in part to claims made by the Right that the economy would only grow again if more money was provided and import barriers introduced.[18]

The main reason for poor demand was high taxation, on the one hand, and small profits as well as new investment alternatives, on the other. Taxes and levies amounted to over 50 per cent of national income compared with only about 20 per cent in Germany and in the United Kingdom.[19] There was only very little interest in shares because of the gloomy outlook of Polish industry which was paralleled by high interest rates and relatively inexpensive imports of luxury goods.[20] Slight increases in Polish exports could not compensate for such enormous reductions in home demand. However, during the inflationary process, everybody had learned to look at the government for help. Although workers agreed to wage reductions in some industrial branches, the prolongation of working hours and collective wage bargaining in general remained taboos. The government, which had to organise its majorities, exceedingly bowed to the pressure. Yet, this meant also increased expenditure. Having spent zl 657.4 million or $ 126.8 million in 1922 and zl 961.5 million or $ 185.5 million in 1923, state expenditure increased in 1924 to zl 1,599.7

1924, in Archivum Akt Nowych, Warszawa, Poland (from now on: AAN), Kauzik 6

[15] *Dziennik Ustaw Rzeczypospolitej Polskiej 54*, 1924, p. 540. - See also the discussion of the new tariff in H. Bräutigam (1927): Die Handelspolitik Polens seit Erlangung der Selbständigkeit bis zum Ablauf der Genfer Konvention am 15. Juni 1925, Berlin, pp. 37-40

[16] Mlynarski claimed that agrarian output in 1924 was 33 per cent below average. Yet, Krzyzanowski pointed out that this was true for grain only. The harvest total was probably only 10 per cent below average. See F. Mlynarski (1926): The International Significance of the Depreciation of the Zloty in 1925, Warszawa, p. 33 and A. Krzyzanowski (1926): "Druga Inflacja polska", in *Ruch prawniczy, ekonomiczy i socjologiczny 4*, p. CCXXVII. For statistics, see *Rocznik Statystyki Rzeczypospolitej Polskiej 1929*, p. 38

[17] V.J. Zbijewski (1928): La Stabilisation Monétaire en Pologne, Paris, p. 40. See also "Annual Report for 1924", 20 September 1925, in Public Record Office, Kew, UK (from now on: PRO), FO 371, N1100/9169/55

[18] There was a serious discussion going on about the right money supply in which the lack of capital was confused with a lack of money; see, for example, S. Janicki (1925): Majatek i Sily Gospodarcze Panstwa Polskiego, Katowice, pp. 16-29 and G. Günther (1931): Polnische Währungspolitik von 1924 bis zur Zlotystabilisierung, Breslau, p. 42. About the mounting political pressure, see *145. Sejm*, 8. July 1924.

[19] S. Szeps (1926), op. cit., p. 88

[20] See also F. Mlynarski (1925a), op. cit., pp. 70-71

million or $ 308.7 mil'ion.[21] Grabski managed to balance the budget in 1924 since the government had accumulated large reserves during the stabilisation process. However, the fact that this huge expenditure had to be paid for was at the core of the problem. The large budget invited for state consumption since it involved a significant number of civil servants, and individual ministers would bargain for increasing funds for their respective ministry. Expenditure was simply more difficult to control and the evaluation of projects was a major problem. At the same time, Grabski also hesitated to save in other areas of state expendditure since civil servants and the military constituted an important part of his electorate. Moreover, he feared that the state might appear abroad as too poor to be able to supply standard services.[22] In consequence, the government had to mobilise all available sources to pay for its high bills, i.e. apart from regular revenue also the returns from the liquidation of the PKKP, the Italian loan, an interest-free credit with the Bank Polski and the issue of small change. Yet, there were only limited extraordinary revenues available in 1925 while regular revenues had already begun to decrease in consequence of the depression. Thus, pressure on the budget was mounting.

The most serious problem on the supply side was scarce capital. The banks had almost no funds available, partly because they had lost their original capital in the inflation, but partly also because they had invested it in mortgages and had no immediate access. Savings resumed slightly from zl 21.6 million or $ 4.2 million in April 1924 to zl 175.9 million or $ 33.9 million at the end of the year, most of which was on cheque accounts, but they could not play any important role.[23] In this situation the Bank Polski became the main source of credit. The initial argument of its executives was that the rediscount of credits could be used in order to remonetise the economy. Hence, when the bank came into being on 29 April 1924, the cover of all notes in circulation amounted to 87.0 per cent while the legal minimum required only 30 per cent. Although the bank intended to remain above this mark at about 50 per cent, there was still a lot of room for monetary expansion. For the moment, the bank did not take into account the small change that was still to be issued by the government. The management was not aware of the fact that it would have to reduce its notes again once the government went ahead with its coins, i.e. restrict credits thereafter.[24]

In the Polish case, it was difficult to determine when inflation resumed again because of remonetisation. The decrease in the velocity of money circulation and the rise in cash balances that stemmed from the reforms made an initial increase in the money supply possible without lifting the general level of prices. More precisely, the contrary would

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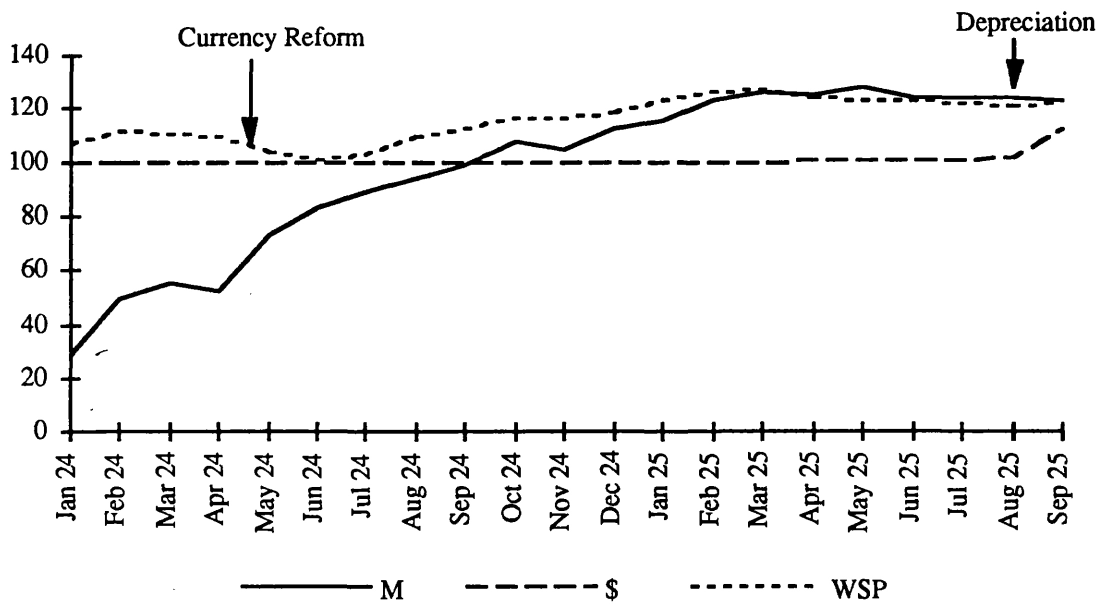
[21] *Rocznik Ministerstwa Skarbu 1924*, p. 173
[22] His national pretensions are most apparent in W. Grabski (1926): O własnych siłach, Warszawa, passim.
[23] *Sprawozdanie Banku Polskiego za pierwszy okres dzialalnosci od 28 kwietnia do 31 grudnia 1924r*, p. 9
[24] On the bank's argument, see the account of its director, Z. Karpinski (1958): Bank Polski 1924-1939, Warszawa, pp. 21-25

have happened if the monetary authorities had not issued additional money, namely a deflation. Thus, inflation will be defined as the increase in the money supply index above the exchange rate index of the dollar. Such a definition seems sensible because a money supply index that exceeds the exchange rate index is equivalent to the monetisation of a negative balance of trade that could soon exercise pressure on the exchange rate. The exchange rate was fixed at zl 5.1826 to the dollar. In the new system, the zloty was bound to gold. Its rate was upheld until August 1925. Hence, the exchange rate had lost its role as a tool of monetary and economic development. As to the money supply, E. Taylor estimated the optimal money stock for post-reform Poland as about zl 600 million or $ 116 million. He argued convincingly that this was the point where the indices of wholesale prices, the dollar exchange rate and the money supply would have fallen together. Since such a balance is what theory predicts, this figure will serve as our benchmark.[25]

Diagram 8: ECONOMIC INDICATORS. 1924-1925
(Indices. 1914=100)



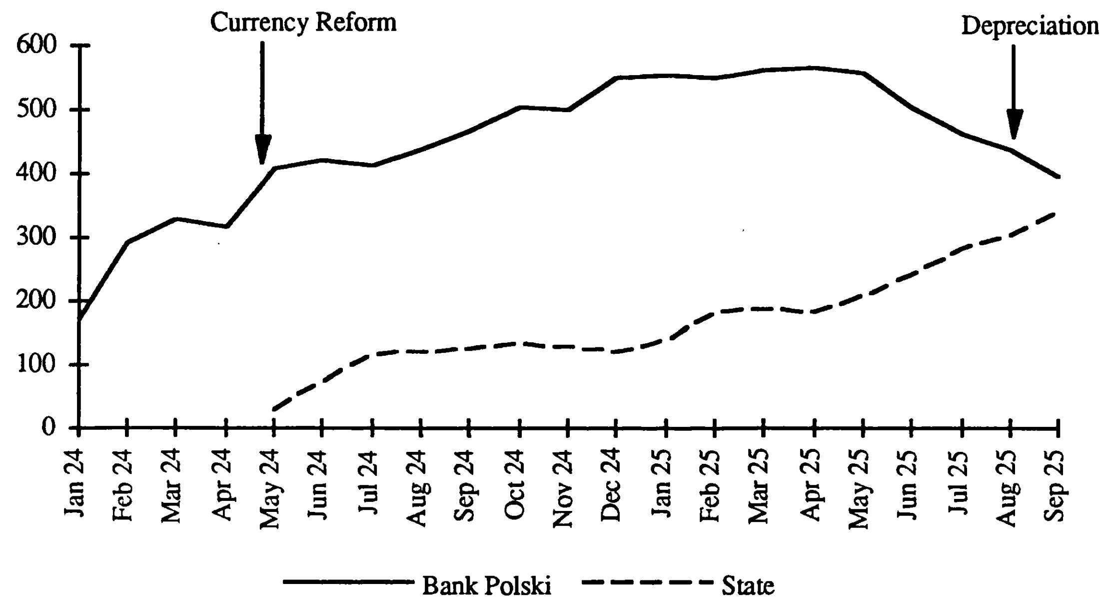
(Sources: *Rocznik Statystyki Rzeczypospolitej Polskiej 1924*, pp. 159, 284; *Rocznik Statystyki Rzeczypospolitej Polskiej 1925/26*, p. 320; *Rocznik Stastysyki Rzeczypospolitej Polskiej 1928*, p. 553; *Rocznik Ministerstwa Skarbu 1924*, p. 122; E. Lipinski et al. (1928): Konjunktura gospodarcza w Polsce 1924-1927, Warszawa, p. 60)

Diagram 8 shows that the money supply recovered rapidly from its low real value of $ 29.3 million in December 1923 to $ 61.2 million in April 1924, the month of the monetary reforms. Monetary growth then continued steadily. The money supply index passed the exchange rate index in October 1924. This date can be regarded as the outbreak of the second Polish inflation. The dynamics of the money supply can be explained by looking

[25] E. Taylor (1927a): Druga Inflacja polska, Warszawa, p. 124

at the two different issuing bodies as shown in diagram 9.[26] The law for the Polish central bank did not direct the Bank Polski to safeguard price stability, but it bound the bank to secure a minimum cover of bank notes in circulation of not less than 30 per cent. When the bank was set up at the end of April 1924, the cover of all bank notes in circulation amounted to 87.0 per cent. The bank used this as an argument to pursue a more generous credit policy and to expand the money supply. In consequence, the cover fell to 67.4 per cent at the end of 1924. However, in the meantime, the government had made use of its legal right to issue coins. Thus, the cover of all money in circulation totalled only 55.1 per cent.

Diagram 9: THE MONEY SUPPLY. 1924-1925
(billion zlotys)



(Source: *Rocznik Statystyki Rzeczypospolitej Polskiej 1925/26*, p. 295)

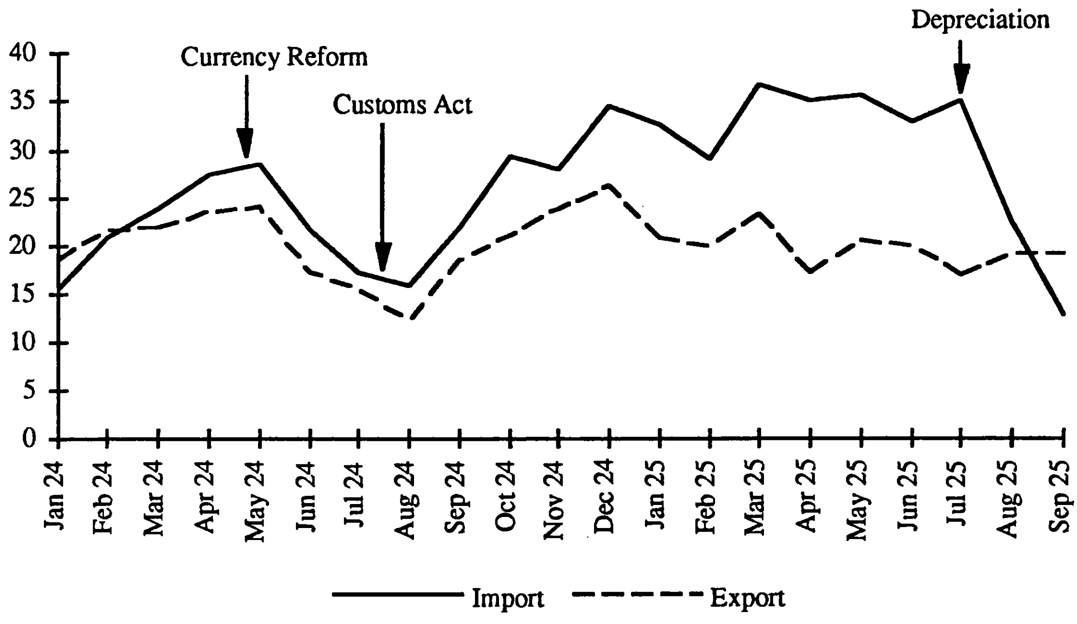
The money supply had a direct impact on prices. At the beginning of the reforms, the wholesale price index lay above the exchange rate index and prices continued to increase over the month of January. However, when credibility in Grabski's programme resumed, the velocity of money circulation fell apparently faster than the economy could be re-monetised. Polish prices started to fall and reached a low in July 1924 when their index coincided with the exchange rate index. Prices only started to grow again when agricultural prices rose by 58.5 per cent between July and October 1924 due to a bad harvest and the liberalisation of food exports while industrial prices remained stable.[27] However, until March 1925, the wholesale price index exceeded the money supply index. This seemed to

[26] See appendix for detailed monthly statistics.
[27] *Rocznik Statystyki Rzeczypospolitej Polskiej 1930*, p. 277

indicate that remonetisation had still not been completed. However, since both indices lay above the exchange rate index the situation has to be explained as the prevention of a successful restructuring of the economy by an excessive money issue. Prices did not come further down because credits hindered bankruptcies.

Diagram 10 shows that Poland's foreign trade mirrored this development. At the end of inflation, Polish imports rose because of the exhaustion of raw material stocks. However, at the same time, Polish exports increased due to falling prices. Then, in the early summer of 1924, foreign trade slowed down significantly when stocks were full and Polish exports expensive. Exports only recovered between August and December 1924 in consequence of the reduction or abolition of export taxes, and of a decrease of the railway freights for goods exported abroad.[28] Yet, imports rose more steeply and scissors opened between imports and exports. While, in the beginning of 1925, imports continued to grow, exports fell after their December peak the main reason for which being rising prices at home.

Diagram 10: POLISH FOREIGN TRADE. 1924-1925
(million dollars)



(Source: *Rocznik Statystyki Rzeczypospolitej Polskiej 1927*, p. 231)

The negative trade balance naturally influenced Poland's balance of payments. The monetary policy of the Bank Polski built up inflationary pressure when it expanded the money stock in a time of economic contraction. With high prices for Polish products, more money could now flow into import trade. According to calculations by Pszczólkowski,

[28]See also "Economic Situation in July 1924", 11 August 1924, in PRO, FO 371, N6547/253/55

the balance of payments remained still positive in 1924 due, in particular, to large dollar transfers from Polish emigrants in the United States, the Italian loan and the previously hoarded exchange flowing back during the reforms. However, since the scissors between imports and exports widened, pressure on the exchange rate was to increase soon.[29]

In conclusion, at the end of the first year of Grabski's stabilisation policy, prices were rising yet again and inflationary pressure was mounting. The Bank Polski was increasing the money stock in excess of economic growth while the government had returned to its practice of spending in excess of its means, although to a much lesser extent than in the period of extreme inflation. It had already become evident by now that only a change in policy or a substantial foreign loan could rescue the zloty from collapse.[30]

THE COLLAPSE OF THE ZLOTY

> "Without foreign credit amply sufficient to cover the excess of imports of foodstuffs and the losses on sugar and coal exports, it would have been impossible to maintain the Zloty rate at par with the dollar."[31]

At the beginning of 1925, the economic situation of Poland looked anything but promising. The number of unemployed had begun to rise again, agriculture was suffering from a bad harvest combined with taxes that were much higher than in the year before, and industry was in a state of depression. By now, all parties represented in the Sejm demanded active government intervention and the introduction of import barriers in order to assist the private sector in this difficult time. Grabski who had apparently expected faster results of his economic policy decided in January to modify and partly suspend his programme. He promised parliament to pursue a more active economic policy even if that would interfere with the stability of the currency. One of the first measures of his new regime was to grant another credit of zl 9.9 million or $ 1.9 million to the Bank Rolny at the beginning of 1925 having granted zl 25 million or $ 4.8 million to agriculture and industry in 1924 already.[32] However, he was still convinced that he could avoid changing the customs tariffs. He therefore decided to apply for a foreign credit. In February, he sent a negotiator to the League of Nations, but was unsatisfied with the result of the talks. The secretary-general had let him know that any credit would be bound to the agreement of the Bank of England and the establishment of an independent controller at the Polish

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[29] S. Pszczólkowski (1927): Bilans platniczy Polski w latach 1923-1926, Warszawa, pp. 122-123

[30] Grabski made this quite clear in his memoirs; see W. Grabski (1927a), op. cit., pp. 107-108

[31] F. Mlynarski (1926), op. cit., p. 55

[32] J. Tomaszewski (1961): Stabilizaja waluty w Polsce 1924-1925, Warszawa, p. 159

Ministry of Finance. This was more than Grabski was prepared to give and, thus, he abandoned this plan.[33] More successful were simultaneous talks with the American bank Dillon&Read. The government was able to negotiate an unconditional loan of $ 50 million, $ 21 million of which were due immediately. However, the loan only brought a temporary relief.[34] When the economic situation further deteriorated in May 1925, Grabski finally gave in and introduced import barriers for most consumption goods while restricting the export of goods of basic need.[35]

From February 1925, monthly deficits occurred that could not be covered by reserves any more. One of the problems was that reserves that existed in theory were not available in practice because the government had given them as credits to industry and agriculture, and they were only due back after the harvest, i.e. in the autumn of 1925. In this situation, Grabski resorted to the state's credit facility at the Bank Polski and to the further issuing of coins and small change. His half-hearted attempt to reduce the state's bills not only failed in the Sejm, but parliament actually voted to increase expenditure to allow for more subsidies.[36] By now, however, the reason for the occurring deficits was no longer high expenditure, but also lower revenues. The industrial depression combined with the bad harvest of 1924 had resulted in a decrease in the ground and income taxes. Most significant, however, was the reduction in the property levy that was supposed to account for 23 per cent of all taxes and a sum total of zl 300 million or $ 57.9 million *per anno*. In 1924, the revenue from the levy had only amounted to 59.6 per cent of the estimate, falling to 19.5 per cent in 1925.[37] The full extent of the problem became apparent, when the next instalment of the levy was due in June and July, but its revenue amounted only to zl 13.4 million or $ 2.6 million, which was about 80 per cent short of the estimate.[38] The government compensated for the loss by increasing the supply of coins and small exchange. Grabski issued zl 36.4 million or $ 7.0 million in June and zl 40.7 million or $ 7.8 million in July 1925. From now onwards, he increased the supply of coins and small change steadily. Yet, when the zloty collapsed at the end of July, it had not exceeded the maximum amount of zl 360 million or $ 69.5 million set out in the stabilisation law and it was

[33] W. Grabski (1927a), op. cit., p. 108. On the secret negotiations, see "Odpis bezwzglednie tajnego sprawozdania naczelnika wydzialu kredytowego Ministerstwa Skarbu z podrózy do Genewy", 1 March 1925, in AAN, Kauzik 18

[34] Poland never received the remaining $ 29 million because the loan was unpopular with the American public; see Z. Landau (1957): "Pozyczka dillonowska, przyczynek do dzialalnosci kapitalow amerikanskich w Polsce", in *Kwartalnik Historyczny 3*, p. 84

[35] *Dziennik Ustaw Rzeczypospolitej Polskiej 52*, 1925, p. 356. Grabski was very upset about this decision that was forced upon him since he expected price rises and restrictions on Polish exports by Poland's international trading partners in return; see the *Minutes of the Meeting of the Economics Committee of Ministers (KEM)* for 16 and 25 February 1925, in AAN, Kauzik 6

[36] W. Grabski (1927a), op. cit., pp. 124-132, 153

[37] "Sprawozdanie z dzialalnosci Departamentu Podatków i Oplat za rok 1924" and "Sprawozdanie z dzialalnosci Departamentu Podatków i Oplat za rok 1925", in AAN, Kauzik 30. Tomaszewski's argument that this was the result of a tax boykot of Polish industry and the inability of the state to control tax collection seems rather unconvincing given the state of Polish industry. Under the persisting conditions, the full payment of the levy would have been suicidal; see J. Tomaszewski (1961), op. cit., pp. 156-157

[38] *Rocznik Statystyki Rzeczypospolitej Polskiej 1925/26*, p. 478

only about to exceed the zl 128 million that he had budgeted for for the tax year of 1925.[39]

At the beginning of 1925, the negative trade balance began to have its impact on Poland's balance of payments. By then, the difficulties that Polish foreign trade was faced with had been further aggravated by a fall in the prices of coal and sugar, Poland's most important export items, on the international markets. Furthermore, this coincided with the need to import large quantities of foodstuffs due to the bad harvest of 1924.[40] From January, the foreign exchange holdings of the Bank Polski decreased. They had amounted to $ 51.9 million at the end of 1924, but then fell to $ 39.8 million at the end of February. The Dillon loan brought a temporary relief when the exchange holdings recovered to $ 50.1 million at the end of March, but from then on they began to fall rapidly.[41]

The Bank Polski stabilised its money supply at about zl 555 million at the beginning of January in consequence of the reduction of its foreign exchange reserves. Only when in May the cover fell to 52.1 per cent of bank notes and 38.0 per cent of all money in circulation, the Bank started to restrict credits and reduce its money stock. However, these reductions were not sufficient to counteract the Treasury's issue of coins and small change. Depreciation became an immediate threat. In this situation, the outbreak of the Polish-German customs war on 15 June 1925 exercised a significant psychological blow when a large proportion of Polish coal exports were at risk, i.e. the country's most important export commodity. Although the numbers proved later that the bilateral trade balance remained unchanged[42], it added a lot of insecurity to a development that was increasingly getting out of hand. This was probably one of the reasons behind the idea of the Vice-Director of the Bank Polski, F. Mlynarski, to introduce double book-keeping. On 15 June, the Bank separated what its management saw as being now two Polish currencies, namely bank notes and Treasury money, in its accounts. Transfers from one to the other account were not allowed. The maximum deposit of money issued by the state was restricted to zl 500 or $ 96.5. Foreign exchange could only be purchased for bank notes. The Bank therewith declared the money issued by the state a secondary currency. The management made it clear that it did not feel responsible for its coverage.[43] The immediate effect of this policy was an emerging gap between the two currencies. Traders demanded payments in good money only, and there was a general trend to get rid of the stigmatised one. On 2

[39] See also G. Günther (1931), op. cit., p. 36
[40] This is, of course, not to say that a trade balance would have been impossible. Without inflation, Poland would have restricted its imports to the necessary and an equilibrium would have come about naturally. Yet, given the state of inflation, these factors increased the pressure on the exchange rate. Mlynarski used this argument on several occasions to defend the government; see, for example, his memorandum prepared for the League of Nations on "Waluta polska i problem wolnego handlu", in League of Nations Archive, Genève, Switzerland (from now on: LN), 10/55504/3064; see also S. Osiecki (1925): "Kryzys gospodarstwa narodowego i sposoby naprawy sytuacji", in *Przemysl i Handel 50*, pp. 1617-1619
[41] *Rocznik Statystyki Rzeczypospolitej Polskiej 1925/26*, p. 292
[42] See also chapter III.
[43] See *Minutes of the Meeting of the Council of the Bank Polski for 15 June 1925*, in AAN, Bank Polski 70

July, the stock exchange in Berlin started to quote two separate Polish currencies. The confusion was severe and forced the Bank Polski to abandon this policy only three weeks after its introduction. However, this turn also meant that the rate of the zloty was not to be held anymore.

By the end of July, the cover of all money in circulation had fallen to 28.6 per cent, i.e. below the legal requirement. By then, the exchange holdings had reached a low of $ 17.7 million or $ 14.0 million net. Already, the reserves had not been sufficient for Polish foreign trade any more and, thus, Polish importers had begun to pay with zlotys for their imports increasing the zloty holdings abroad therewith. On 27 July 1925, the management of the Bank Polski decided to restrict foreign exchange transactions. The free trade of foreign currencies was suspended limiting their purchase to companies engaged in foreign trade.[44] In consequence of this action, the zloty fell on 29 July 1925 on the international money markets from zl 5.18 to zl 5.8-6.0 to the dollar. The government now panicked because the collapse of the exchange rate meant a major blow to the stabilisation programme. Grabski urged the Bank Polski to intervene in the money market. At the same time, he saw that only foreign credits could help to avoid further depreciation. That is why he sent J. Zdziechowski, by then a high official in the Finance Ministry, to the League of Nations again, commissioned to ask about their conditions for financial assistance. Again, the terms offered were unacceptable to him since a loan required the establishment of a British controller in the Polish Finance Ministry and possibly also at the Bank Polski.[45] However, the request for loans was more successful in other instances so that Poland was able to secure $ 10 million from the Federal Reserve Bank, SF 200 million from the Banque de Suisse, £ 250,000 from the British Overseas Bank and $ 600,000 from the Bank Francusko-Polski in credit.[46] Poland was thus prepared to stem further depreciation. Yet, the memories of inflation were still too fresh. Interventions did not stop Poles from the attempt to change their zlotys into dollars and foreign traders from holding back their dollar earnings. A situation arose where the central bank held its low course of zl 5.18 to the dollar while the Warsaw money market already quoted the dollar at zl 6.0. To intervene, the Bank had to sell for a lower price and buy for the higher one. Since this was not a policy that could be maintained for long, the Bank had to devalue the zloty on 26 August to zl 5.8 to the dollar.[47]

The devaluation of the zloty started a whole series of different developments. Everybody felt now that inflation had reappeared and, immediately, the Poles fell back into their routine of inflation protection. Lenders demanded their money back. Savers rushed to the

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[44] See *Minutes of the Meeting of the Council of the Bank Polski for 27 July 1925*, in AAN, Bank Polski 70

[45] J. Tomaszewski (1961), op. cit., p. 189

[46] See *Minutes of the Meeting of the Council of the Bank Polski for 18 August 1925*, in AAN, Bank Polski 70

[47] See *Minutes of the Meeting of the Council of the Bank Polski for 26 August 1925*, in AAN, Bank Polski 70

banks in order to collect their savings. People started to hoard dollars again. The black market for foreign currencies reappeared. Lastly, tax morale sank drastically. There was a general tendency to hold back taxes.[48] Parliament was shocked. Although its decisions had largely contributed to the development leading up to the new depreciation, nobody had wanted a collapse of the stabilisation programme. In the run-up to the depreciation, many had argued that a wrong conversion rate of the mark into the zloty, and therewith a wrong exchange rate, were at the core of the economic depression, but everybody had wanted monetary stability at the same time. There was a general consensus that everything had to be done now to stem further depreciation.

This view was also shared by the management of the Bank Polski who regarded it as their duty to safe-guard the gold parity of the zloty. They decided to continue interventions in the money market, on the one hand, and counteract further depreciation by the reduction of the money stock and the restriction of foreign exchange transactions, on the other. The management decided in August to curb credits to industry by 25 per cent and credits to banks, trade and agriculture by 50 per cent.[49] The note circulation decreased consequently from zl 461.6 million at the end of July and zl 439.5 million at the end of August to zl 361.8 million at the end of November 1925. However, this move was offset by the Finance Ministry which increased its money supply almost simultaneously with the reductions of the central bank. The stock of coins and small change increased from zl 284.6 million at the end of July and zl 306.1 million to zl 383.2 at the end of November 1925.[50] The government used these funds to cover the increasing budget deficit. Grabski had to cope with the fact that prices increased and taxes were held back in consequence of the depreciation. Furthermore, for the same reason, there was no chance that people would buy treasury bonds to allow for alternative forms of meeting expenditure.

The economy as a whole suffered greatly from the collapse of the zloty. The policy of the Bank Polski made capital even scarcer while foreign trading partners stopped granting goods credits due to the unfavourable condition of the Polish economy.[51] At the same time, a severe banking crisis affecting almost every credit institution broke out when Poles removed their deposits in the run on the banks while the central bank reduced its rediscounts drastically. Deposits in the 14 largest banks fell from zl 113.3 million or $

48 *Wiadomosci Banku Polskiego 19*, 1925, p. 180. The article also mentioned that wholesale traders indexed their prices to the exchange rate. The statistics, however, do not support this observation; see diagram 9.

49 See *Minutes of the Meeting of the Council of the Bank Polski for 18 August 1925*, in AAN, Bank Polski 70

50 *Rocznik Statystyki Rzeczypospolitej Polskiej 1925/26*, p. 295

51 The President of the Sejm argued in his diaries that the fall in goods credits was due to a German-British conspiracy and Tomaszewski followed him in this argumentation. However, given the fact that Poland had lived through a depression for more than a year when first a customs war with Germany reduced the market for Polish goods and then the stabilisation concept collapsed, you did probably not need to be convinced by anybody to ask for your money immediately when you sold your goods on the Polish market. It was symptomatic, on the other hand, for Poles at the time not to trust anybody, and that is why Grabski was so afraid of a foreign controller; see M. Rataj (1965): Pamietniki 1918-1927, Warszawa, p. 472

21.9 million in July 1925 to zl 68.1 million or $ 7.5 million in December of the same year.[52] This development resulted in a further fall in production and an increase in unemployment driving the country even deeper into depression. The government feared that, under the given circumstances, a collapse of the banking system could have caused the ultimate collapse of the economy. That is why Grabski decided to grant another zl 10 to 15 million in credit to industry in early September. When this did not produce any immediate results, he started a concerted action to prevent the banks from bankruptcy granting them a one-time subsidy of zl 65 million or about $ 11 million.[53] Thus, at the same time, as revenues diminished, expenditures were affected by new tasks that arose from the fact of depreciation.

The budget deficit was actually quite small compared to the fall in revenues and the increase in extraordinary expenditure. It was the result of a campaign of massive savings that Grabski initiated after the depreciation. His most severe cuts affected state firms where, at the end of the year, expenditure reached only 37.4 per cent of the budget plan, and agriculture where he saved 37.4 per cent on planned subsidies and 41.4 per cent on land reform. Overall, the government spent zl 1,884.0 million in 1925, instead of the zl 2,165.9 million planned.[54]

In the course of events following the unsuccessful collection of the capital levy and the depreciation, Grabski had realised at last that current taxation was exceeding the country's potential, but he was also aware that stability could only be achieved by bringing the issue of coins and small change to a halt as well as ensuring the restriction of credits. On 30 September he introduced a new programme into the cabinet that was to secure the stability of the zloty. At the core of it was the maintenance of a stable zloty issued by an independent central bank. The stock of coins and small change was not to exceed zl 12 per capita, i.e. about zl 360 million in total. Credits should be strictly bound to the development of the foreign currency holdings of the Bank Polski which would serve as a cover for all money in circulation. The scarcity of capital was to be overcome by foreign credits that would be obtained with the help of a British financial expert, W. Goode.[55] As to the budget, his plan foresaw massive savings for which he wanted to introduce a High Commission for Budgetary Savings, the issue of a new series of Treasury bonds and the introduction of a new monopoly. These steps were to allow him to curb the property levy

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[52] *Rocznik Statystyki Rzeczypospolitej Polskiej 1928*, pp. 552-553

[53] For details, see W. Grabski (1927a), op. cit., pp. 204-209

[54] *Rocznik Statystyki Rzeczypospolitej Polskiej 1924*, p. 265; *Rocznik Statystyki Rzeczypospolitej Polskiej 1925/26*, p. 474

[55] Goode was what we would call today a management consultant. He had no links with either the British government or the Bank of England; see *Minutes of the Meeting of the Council of Ministers for 30 September 1925*, in AAN, Protokoly Rady Ministrów 30. The sources even seem to suggest that, by then, Grabski would have been prepared to accept outside control. On this point, see also Z. Landau, J. Tomaszewski (1971): Od Grabskiego do Pilsudskiego. Okres kryzysu poinflacyjnego i ozywienia koniunktury 1924-1929, Warszawa, p. 197

by one half and therewith lighten the tax burden of potential investors.[56] The programme was accepted by the cabinet and translated into a bill, but it was clear from the start that it would not be able to ease the situation. Experience had shown that a new monopoly needed time before it would fully function and a new body investigating the chances for reductions in expenditure would need time to produce results. In the meantime, the government would not be able to hold the promise of limiting its issue of Treasury money to not more than zl 360 million. This was also at the core of the critique that Grabski was faced with when he introduced his bill in the Sejm. Most deputies did not seem to trust him anymore to be able to turn the direction of the economy, particularly since this turn would have also gone along with a political turn from the Left to the Right which was now wished for by a majority of them.[57]

Yet, in the autumn of 1925, the economic situation looked much better than the number of unemployed seemed to suggest. The harvest had been exceptionally good, thus increasing the purchasing power of the agrarian population. Also the land reform was close to being implemented[58] offering good chances for agricultural growth. At the same time, the currency depreciated while prices remained more or less stable. This caused a fall in real prices and an improvement of the competitiveness of Polish goods. Combined with the new customs tariff, this resulted in a deep fall in imports paralleled by a rise in exports. This trend was further strengthened by an almost general increase in Polish productivity. A large part of the credits that had caused the second inflation had been invested in the purchase of new machines and better equipment. Thus, the sugar industry had increased the share of motorisation from 15.4 per cent in 1922 to 29.0 per cent in 1926, while the share in the cotton industry rose from 30.4 per cent to 36.8 per cent over the same period.[59] This enabled cotton plants to reduce the number of workers per 1,000 spindles from 7-10 to 5-7.[60] At the same time, productivity had also been improved in the Polish coal mines. In 1913, one Polish miner had exploited 1.14 tonnes per day. Then the war had lowered this figure substancially and in 1924, it was still only at 0.69. Yet, by 1928, the daily output per worker had increased to 1.27 tonnes.[61] In consequence of the improvements, the balance of trade turned positive in September and the outflow of foreign exchange only continued due to the flight from the zloty. It seemed to be only a matter of time before demand started to rise again. Then, production would have increased, and so would tax payments. The only major problem seemed to be to prevent a

[56] See *Minutes of the Meeting of the Council of Ministers for 3 and 21 October 1925*, in AAN, Protokoly Rady Ministrów 31

[57] Most parties wanted above all stability. Only some voices could be heard on the Right demanding a continuation of inflation to achieve a new inflationary boom; see, for example, *244. Sejm*, 22 October 1925 and *255. Sejm*, 25 November 1925.

[58] The first reading of the bill was on 20 August 1925. The reform was enacted on 28 December 1925.

[59] J. Zarnowski (1992): Polska 1918-1939. Praca-Technika-Spoleczenstwo, Warszawa, p. 111

[60] K. Bajer (1958): Przemysl wlókienniczy na ziemiach polskich od poczatku XIX w. do 1939r. Zarys ekonomiczno-historyczny, Lódz, pp. 233-234

[61] *Maly Rocznik Statystyczny 1939*, p. 267

new spiral of increases in the money supply causing both price rises and pressure on the exchange rate resulting in budget deficits and a further increase in the money stock. Thus, the important part of Grabski's new programme was to urge the Bank Polski to continue intervening in the money market until the society would realise that their was no need to flee from the currency, as well as the attempt to secure a foreign loan to cover budget deficits until the economy would grow out of depression and to provide the means for interventions in the money market. Yet, the government seemed to have lost control over the situation. In October, the issue of coins and small change exceeded the legal limit of zl 360 million and, in November, it even passed the money stock of the Bank Polski. At the same time, the number of unemployed had increased steadily from 161,900 at the beginning of the year to 251,600 at the end of November.[62] Lastly, although the trade balance was positive, the foreign currency holdings of the Bank Polski continued to decrease. It was probably the feeling of a loss of control that made the director of the Bank Polski decide to stop further interventions on 12 November 1925. By then, the foreign exchange holdings had fallen to about $ 11.5 million.[63] Grabski was not able to change his mind, and also an intervention of the President, S. Wojchiechowski, remained without success. In consequence, Grabski resigned immediately after this failed persuasion attempt on 15 November 1925.

In conclusion, Grabski resigned at a time when the worst was already over. F. Mlynarski was probably right when he argued later that international help could have prevented the collapse of Grabski's stabilisation efforts. Polish prices were already coming down and the good harvest offered hope for an increase in demand. In the long-run, growth would have lifted state revenues to the level of expenditures. On the other hand, however, depreciation realigned the internal and the external value of the zloty. Furthermore, it urged the government to analyse the mistakes of the stabilisation packet and improve fiscal performance.

THE END OF INFLATION

> "The gold parity has been replaced by an economic parity. A small divergence from this parity means an export premium. A currency then stabilised on such a level becomes a regulator of foreign trade. It provides the basis for a trade balance."[64]

The reappearance of inflation changed the political landscape. At the end of 1923, when

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[62] J. Drecki (1929): "Bezrobocie in Polsce niepodleglej", in J. Zaleski (ed.): Bilans gospodarczy dziecieciolecia Polski odrodzonej, Poznan, vol. 2, p. 379

[63] *Rocznik Statystyki Rzeczypospolitej Polskiej 1928*, p. 553

[64] J. Zdziechowski (1926a): Sytuacja gospodarczo-skarbowa Polski i drogi naprawy, Warszawa, p. 8

Grabski was elected prime minister by the Sejm, the creation of his cabinet was a compromise between different interests. The only reason why all parties united to support his government of specialists was that he was credible in promising to cure public finances and introduce a stable currency. The different parties apparently assumed that stable fiscal and monetary conditions would establish a basis from which to fight for their own particular economic interests. They gave him six months to implement what he thought necessary, and the chance to organise his majorities thereafter. Since his government stood above parties, he was not bound to any interest group. However, a change in the political climate occurred when economic depression and the collapse of the exchange rate convinced parliament that they also had to unite in their economic programmes if they were to overcome a crisis that was shaking at the foundations of the country. When Grabski resigned on 15 November 1925, about 30 per cent of the industrial workforce were unemployed[65], and the zloty fell against the dollar from 6.2 to 6.9 within one day.[66] In this situation, all parties united in a grand coalition under A. Skrzynski in the attempt to combine their interests in one single programme. J. Zdziechowski was commissioned to work out a system that would allow for economic recovery as well as fiscal and monetary stability, but that at the same time would be acceptable to all political camps. The task seemed impossible, yet it was made easier by the fact that the depression had shifted the power to the employers. They were seen as holding the key to recovery. He was thus in a position to pursue a Rightist policy allowing only for some minor concessions to the Left. That is why Zdziechowski included Lewiatan in the process of drafting his programme.[67]

The preconditions for reform were much better than the general mood seemed to indicate. The currency was undervalued, thus stimulating exports and stemming imports. Imports were further hampered by the successful introduction of customs barriers. There were also first signs of a general improvement of world trade that raised hope for an increasing demand of Polish exports. Already, the trade balance had been positive since September and Polish productivity was gradually improving. At the same time, the harvest had been exceptionally good so that the balance of trade had turned positive for foodstuffs. Also, the land reform had finally been implemented. This seemed to promise that, in the long-run, productivity would increase in agriculture. Lastly, the realignment of prices had been rather successful in lifting agricultural prices relative to industrial prices. Although, in November 1925, agrarian prices stood exactly where they had been in January 1924 if measured in real terms, industrial prices had fallen by 12.7 per cent.[68] Hence, the purchasing power of the agrarian sector was increasing.

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[65] Estimate based on J. Drecki (1929), op. cit., p. 379 and *Maly Rocznik Statystyczne 1931*, p. 97

[66] A. Krzyzanowski (1927): Dwa programy finansowe (jesien 1925 i wiosna 1927), Kraków, p. 28

[67] W. Morawski (1991): Polityka stabilizacyjna ministra skarbu Jerzego Zdziechowskiego (listopad 1925-maj 1926), Warszawa, p. 5

[68] *Rocznik Statystyki Rzeczypospolitej Polskiej 1930*, p. 277

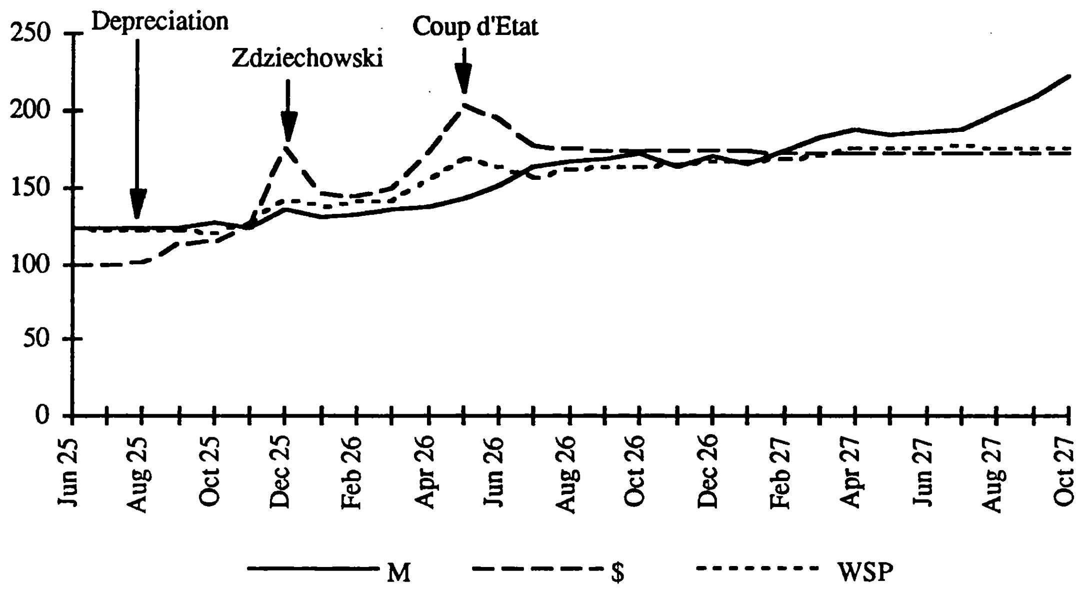
Zdziechowski aimed at the stabilisation of the zloty at an undervalued rate. He assessed foreign trade as being vital for the development of Polish industry. Export growth would effect the economy much faster than the development of the home market. Yet, undervaluation could only be maintained and controlled if the budget was in equilibrium and foreign exchange transactions restricted to foreign traders. To balance the budget he planned to save zl 120 million in public administration, zl 120 million in good purchases, zl 100 million in public investments, and zl 150 million in the army compared to the budget left over by Grabski. He appeared much tougher than his predecessor, because he did not consult any special committees about where to save, but simply allocated reduced funds to the respective ministries leaving the saving to them. In this, he was backed by the cabinet. At the same time, he hoped to be able to abolish the property levy and replace it by a new monopoly and the improvement of existing ones.[69] Hence, his ideas about the budget balance differed significantly from those of Grabski. While Grabski had aimed at a large budget paid for by the higher income groups, Zdziechowski intended to overcome the fiscal crisis by reducing expenditure and shifting revenues from direct taxes to indirect ones, i.e. taxing consumption. This was to ensure that profits could compensate for the lack of credit as a means of financing investments. Ultimately, he wanted to shift political attention back to the supply-side where it had been throughout the inflationary period. However, since indirect taxes would hit harder at the lower than at the higher income groups, he agreed to introduce export levies on foodstuffs in order to reduce their price. This was to ensure that workers, whose main expenditures were on food and rents, would not be affected by the tax reforms. It was the one concession to the Left in an otherwise Rightist programme. The agrarian sector, on the other hand, was the net loser since its profits were curtailed in order to buy the votes of the industrial workforce. Yet, the parties representing agriculture did not object since their major concern was stability, and this deal seemed better that none.[70] Consequently, the pact was sealed in the Sejm on 22 December 1925 and translated into a new stabilisation law.[71] The implementation of the programme began immediately afterwards.

Simultaneously, with the drafting of his programme still in progress, he decided to counteract further depreciation of the Polish currency. After Grabski's sudden resignation, the zloty had been falling steadily against its gold parity from zl 6.2 on 13 November to zl 9.85 on 1 December and zl 10.5 on 16 December. People were speculating that the collapse of Grabski's government was equal to the end of stability. Zdziechowski had added to this interpretation by emphasising the advantages of depreciation for Poland's economic performance. On 17 December 1925, however, he urged the Director of the Bank

[69] See *Minutes of the Meetings of the Council of Ministers for 30 November and 7 December 1925*, in AAN, Protokoly Rady Ministrów 31
[70] Cynically, one could add that peasants had no history of expensive strikes, and the next election campaign was still far.
[71] *Dziennik Ustaw Rzeczypospolitej Polskiej 129*, 1925, p. 918

Polski to throw all available funds on the market in an attempt to repeat Grabski's successful intervention of January 1924. The gamble worked out again. It was certainly supported by the fact that, by then, the stabilisation bill had already been passed in its second of three readings in the Sejm. Zdziechowski had shown his determination, and the general public believed him. At the end of December, the zloty recovered to 8.35 to the dollar and even appreciated to 7.3 on 10 January.[72]

Diagram 11: ECONOMIC INDICATORS. 1925-1927
(Indices. 1914=100)

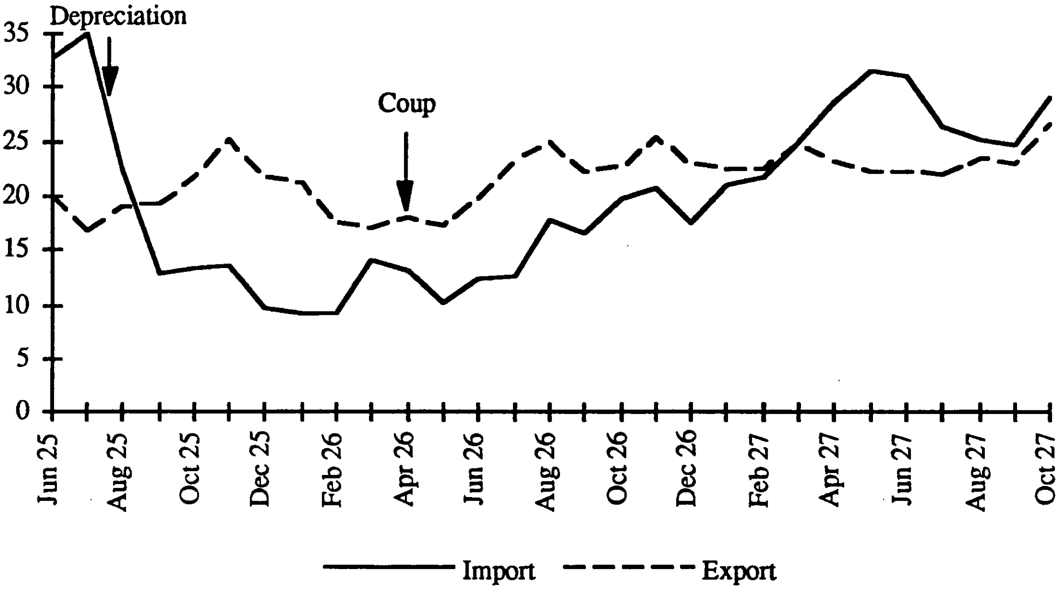


(Source: *Rocznik Statystyki Rzeczypospolitej Polskiej 1928*, pp. 552-553)

Diagram 11 shows that the exchange rate passed the money supply and the wholesale price indices in November 1925 and stayed above them thereafter. The money stock increased slightly in November and January due to the government's need to issue a new series of coins, but it remained far behind the exchange rate. The same was true for prices which from November established themselves between the other two indices. However, foreign trade was less affected by these changes than the government had hoped for. Diagram 12 shows that exports reached a peak in November 1925 and fell thereafter while imports fell until February 1926 before they started to recover. The fall in exports can be explained by a fall in world market prices for foodstuffs and the appreciation of the zloty in December that were followed by the introduction of export levies. Imports, on the other hand, were affected by their relatively high prices and the Polish economic depression. They only started to rise again with the beginning of recovery in February.

72 J. Zdziechowski (1926b): O pieniądzu i budżecie, Warszawa, pp. 9-11

Diagram 12: POLISH FOREIGN TRADE. 1925-1927
(million dollars)



(Source: *Rocznik Statystyki Rzeczypospolitej Polskiej 1928*, p. 210)

From February 1926, unemployment figures started to fall showing that depression had faded out. They had reached a peak in the middle of the month of 302,200 and then decreased steadily to 168,000 at the end of 1926 and 116,800 at the time of the second monetary reforms, in September 1927.[73] At the same time, the monthly budget deficits began to decrease. While, in January 1926, the deficit had still amounted to zl 22.6 million or $ 3 million, it fell to zl 10.7 million or $ 1.4 million in February, zl 8.9 million or $ 1.1 million in March and zl 2 million or $ 0.2 million in April. The improvements were mainly due to an increase in revenues stemming from the recovery of Polish production.[74] However, the government was not to profit from these economic changes politically. Farmers resented Zdziechoswski's anti-agrarian policy, and discontent was mounting in the countryside. At the same time, parliament was pointing at the closing gap between exports and imports and questioned his methods to reduce unemployment which was the most burning problem at the time. When, in April 1926, Zdziechowski proposed to secure the ultimate budget balance by a further reduction in civil servants, the freezing of public wages and the lifting of all indirect taxes by ten per cent[75], the Socialists were given a reason to leave the government. They could argue that this would weaken the purchasing

[73] *Rocznik Statystyki Rzeczypospolitej Polskiej 1930*, p. 303. These are the numbers of registered unemployed. Much higher figures were given in the British Foreign Office files. They reported the unemployment figure for February 1926, for example, as high as 359,810; see "Annual Report for 1926", in PRO, FO 371, N4749/4749/55

[74] *Rocznik Statystyki Rzeczypospolitej Polskiej 1927*, p. 511; *Rocznik Statystyki Rzeczypospolitej Polskiej 1928*, p. 552

[75] See *Minutes of the Meeting of the Council of Ministers for 17 April 1926*, in AAN, Protokoly Rady Ministrów 33

power even further and thus harm the economy. In consequence, the cabinet resigned on 5 May.

However, political power continued to be with the Right. Before a background of discussion over the position of Pilsudski and military insecurity due to the Locarno Pact, President Wojchiechowski agreed to the establishment of a Centre-Right government under the leader of the moderate farmers' party, W. Witos. This was a vital mistake because it brought back memories of the first Piast-National Democrat coalition. Pilsudski was outraged and demanded the resignation of Witos. When President Wojchiechowski refused, Pilsudski and the active Minister for Military Affairs, L. Zeligowski, went along with a coup d'état in order to bring the government down. Fighting broke out on 12 May and lasted for two days. It was supported by the socialist PPS who called for a general strike and hampered the transport of additional troops therewith. Pilsudski succeeded when in the night of 14 to 15 April 1926 both the government and the president resigned. ?
He then called for a government of specialists under K. Bartel that stood above parties. Pilsudski declared that his main aim was to reform the machinery of the state and purge away the demoralisation of public life. At the same time, the new government announced its intention to legislate by decree on the most essential matters. The new rulers thus left a democratic facade while the order became authoritarian.[76] The overthrow of the existing system had long been in the air. The Poles had become disappointed by politics and their economic implications as well as the constant struggle for power. At the time of the coup, most people were prepared to accept less democracy, but more leadership. The British ambassador commented on the changes shortly afterwards as: "The result [of the coup] is that political faction has lost much of its power to harm, the confidence of the masses in the State has been revived and a firm Government has been established."[77]

The finance ministers of the new regime were first G. Czechowicz until 8 June 1926, then C. Klarner until 30 September 1926 and again Czechowicz. Both of them followed the policies set out by Zdziechowski which was somehow different from what most people had expected. Pilsudski had come from the Left and Czechowicz was known as quite radical. There was serious uneasiness in business cycles when he was nominated.[78] Nevertheless, he lifted indirect taxes by ten per cent and increased the price of alcohol.

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[76] A. Polonsky (1980), in R.F. Leslie (ed.): The History of Poland since 1863, Cambridge, p. 158. - For a detailed account of the coup and its background see J. Rothschild (1966): Pilsudski's Coup d'État, New York

[77] "Annual Report for 1926", in PRO, FO 371, N4749/4749/55. At the same time, a memorandum prepared for the Bank of England observed: "After the coup, while there was severe condemnation of the matter in which Pilsudski had acted, there appeared to be entire unanaminity of feeling that the opportunity afforded should be accepted in order to place the constitution of the country on lines which were felt to be more suitable to Poland's present political development than the ultra-democratic constitution that had been originally prepared. ... The recent crisis appears to have sobered the nation and created a greater unity of sentiment than I can previously remember." See "Memo for H.A. Trotter by A.C. Gairdener (British Overseas Bank)", 23 June 1926, in Bank of England, Memoranda, OV 110/1, 3211/1

[78] Z. Landau (1963): Plan stabilizacyjny 1927-1930. Geneza, zalozenia, wyniki, Warszawa, pp. 21-22

Hence, he implemented the two suggestions of his predecessor that had contributed to the fall of the previous government. Revenues consequently increased and indirect taxes were able to make good for the reductions in the collection of the property levy. Although the latter remained a source of revenue and was not replaced, its importance shrank. Out of the planned revenue of zl 300 million or $ 57.9 million *per anno*, the treasury gained zl 199 million or $ 38.4 in 1924, zl 59.5 million or $ 10.3 million in 1925, zl 64.5 million or $ 7.2 million in 1926, and zl 65.2 million or $ 7.3 million in 1927.[79] However, more important than the rise in the level of indirect taxes was the result of economic recovery. When the economy grew, tax receipts rose accordingly. The Polish budget balanced from July 1926 and even produced surpluses thereafter.[80]

As long as the state budget was in deficit, the state continued to issue coins and small change, although on a very small scale. In July, the stock of Treasury money reached zl 469.6 million. With budget surpluses, however, the Treasury was able to reduce it afterwards. At the same time, the Bank Polski increased its notes due to the rise in gold and foreign exchange holdings. Yet, the cover of the entire money stock grew from 24.9 per cent in January 1926 to 29.7 per cent in December 1926 therewith remaining just below the legal requirement.[81]

An economic recovery was evident almost immediately. It is true that the economy had shown signs of recovery before the coup. The increased political stability did, however, affect business confidence. Although the zloty first depreciated from 10.1 to the dollar on the day before the coup to 11.1 on 20 April as a result of uncertainty, it began to rise against its gold parity with increasing political stability. The monthly average dollar exchange rate of the zloty was 10.1 in June, 9.2 in July and 9.0 in August 1926.[82] At the same time, people started to return their hoarded dollars to the Central Bank being convinced that the current appreciation of the zloty was a lasting one. Between June and August 1926, the Bank bought $ 12.1 million on the internal market.[83] Speculation ceased to play an important role and, in the summer of 1926, the Finance Ministry was even able to revoke the restrictions on exchange transactions.[84] The government was aided by the strike of British coal miners that started in May 1926 and lasted for nine months. It opened new markets for Polish coal, particularly in Scandinavia. This gave a further boost to the recovery of Polish exports and helped to retain the positive trade balance in spite of the appreciation of the currency. The trend was not interrupted by the harvest that

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79 Figures given in *Rocznik Statystyki Rzeczypospolitej Polskiej 1924*, p. 268; *Rocznik Statystyki Rzeczypospolitej Polskiej 1925/26*, p. 478; Z. Landau, J. Tomaszewski (1971), op. cit., p. 221

80 *Rocznik Statystyki Rzeczypospolitej Polskiej 1927*, p. 511

81 *Rocznik Statystyki Rzeczypospolitej Polskiej 1927*, p. 265; *Rocznik Statystyki Rzeczypospolitej Polskiej 1928*, p. 553

82 *Rocznik Statystyki Rzeczypospolitej Polskiej 1927*, p. 307

83 Z. Landau, J. Tomaszewski (1971), op. cit., p. 202

84 *Dziennik Ustaw Rzeczypospolitej Polskiej 86*, 1926, p. 482

produced an average result.[85]

Stabilisation was thus achieved *de facto* in July 1926. However, if the government wanted to bring inflation to a guaranteed end, they also needed a stabilisation *de iure* based on legal changes as well as on a stabilisation credit. Only an increase in the gold backing of the zloty was to re-establish complete confidence in the currency by the general public, and also international credibility in the Polish economy was bound to a foreign credit. Furthermore, apart from the psychological factors involved, the credit could help Poland to overcome its scarcity of capital and help develop the economy. In this situation, the mission of the American financial expert, E.W. Kemmerer, became of great importance. Kemmerer originally came to Poland in the summer of 1926 on an invitation by F. Mlynarski, the Vice-Director of the Bank Polski, dating back to the summer of 1925, the reason for the invitation being that Mlynarski had been impressed with the necessity of better publicity for Poland in the United States. He had thought that if the mission would familiarise the American people with Poland this would allow for the floating of the second rate of the Dillon Loan.[86] Then, in his reports, Kemmerer actually acknowledged the end of inflation, although he saw various fields were improvements were necessary.[87] When, encouraged by the results of the mission, the Polish government decided to apply for a foreign credit with a consortium of American banks in the autumn of 1927, Kemmerer was accepted as the economic advisor by both sides and commissioned to draft the conditions of the money being paid.[88]

On 13 October 1927, the Polish President issued a decree about the plan of financial stabilisation and the acceptance of an international loan.[89] The plan included two parts, namely one about "budgetary and fiscal measures" and the other about "monetary stabilisation". The first forbade the issue of money for budgetary purposes. The privilege to issue coins and small change was withdrawn as well as the right of an interest free credit at the central bank. The money the Treasury had issued so far was to be gradually withdrawn. The government received zl 75 million or $ 8.4 million to establish a reserve fund that was only to be accessed in a time of emergency, zl 25 million or $ 2.8 million to pay for the state debts at the Bank Polski and zl 40 million or $ 4.5 million for the acceptance

[85] *Rocznik Statystyki Rzeczypospolitje Polskiej 1929*, p. 38

[86] See "Note on conversation with M. Mlynarski by M.C. Norman, Govenor of the Bank of England", 13 September 1926, in Bank of England, Memoranda, OV 110/1, 3211/1

[87] For details, see E.W. Kemmerer (1926): Reports, submitted by the Commission of the American Fiancial experts headed by Dr Kemmerer, Warszawa. Among his recomendations were tax reforms relieving the Polish Treasury from the reliance on monopolies, the cutting down on subsidies and on the principle of progression for most taxes, the introduction of bank supervision, etc.

[88] The Bank of England still advised against the credit. Its Govenor argued in a conversation with a represantative of the Bankers Trust Company: "No doubt it was possible to make a great deal of money by lending to Poland, but the result was likely to be that the consolidation of the country would be postponed for a generation. ... There would have to be international control of a sort which could not be sanctioned by internal Polish legislation alone." See "Memorandum", 10 December 1926, in Bank of England, Memoranda, OV 110/1, 3211/1

[89] *Dziennik Ustaw Rzeczypospolitej Polskiej 88*, 1927, p. 789

of Treasury notes by the Bank as well as zl 30 million or $ 3.4 to allow for the replacement of small change by silver coins. The latter commissioned the Bank Polski to safeguard monetary stability. The zloty was devalued to a new parity of 0.16879g of gold and zl 8.9141 to the dollar. The minimum cover of the money stock was raised to 40 per cent, and the capital of the Bank was raised to zl 150 million or $ 16.8 million. The Bank therefore received zl 50 million or $ 5.6 million. A further zl 135 million or $ 15.1 million were granted for general business purposes. The plan was to be supervised by C. Dewey for three years who was based with both the government and the Bank Polski where he became a full member of its Executive Council.[90] With this law of 13 October 1927, the Polish inflation finally came to an end.

CONCLUSION

The reasons for the reoccurrence of inflation were two-fold: The first mistake was that Grabski maintained a large budget after the inflation while shifting the tax burden from the lower to the higher income groups. The second one was that the Bank Polski gave expansionary credits at a time when investments hardly paid off. In consequence, the economy was choked off, tax payments decreased and the vulnerability of the budget became evident. The Treasury had to start its own printing press and the gold parity of the zloty collapsed in the course of the new inflation.

This course of events was not at all inevitable as the later development showed. Until the depreciation of the zloty, Grabski printed about zl 285 million or $ 55 million. Yet, afterwards he was able to save zl 282 million or about $ 50 million after the shock had woken him up and Zdziechowski cut another zl 490 million or more than $ 60 million. Driven by certain obligations towards his electorate and national pretensions, Grabski had failed to use his emergency powers back in 1924 to slim down the budget.[91] With a smaller budget he would not have had to issue coins and the credit restrictions of the Bank Polski in the spring of 1925 would have been able to produce the necessary deflation to take the pressure from the exchange rate. Thus, the Treasury's privilege to issue coins and small change was another vital mistake of the reforms since it allowed the government to continue its careless spending policy. The mistake on the part of the Bank,

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[90] *Dziennik Ustaw Rzeczypospolitej Polskiej 88*, 1927, p. 790; *Dziennik Ustaw Rzeczypospolitej Polskiej 97*, 1927, p. 855; *Dziennik Ustaw Rzeczypospolitej Polskiej 97*, 1927, p. 856; see also J.F. Dulles (1928): Poland. Plan of Financial Stabilisation, New York, pp. 24-28

[91] At the time of the reforms, a British observer already argued that Poland would need "a government which not only possessed 'full powers', but was determined to use them (more than Grabski does)"; see "Letter from Mr Nixon to R. A. Leeper, British Legation, Warsaw", 19 February 1924, in Bank of England, OV 110/21, 3216/3

on the other hand, was that they did not recognise the Treasury money as being part of the money circulation and therefore did not care about its backing.

The credit for ending the Polish inflation does not go to Grabski, although he would have had the opportunity. However he deserves the distinction for laying the ground work. It was Zdziechowski who ultimately achieved stability on the basis of an undervalued currency and a reduced budget.

Last, it can be argued that both Grabski and Zdziechowski contributed to the development that culminated in Pilsudski's coup d'état. Grabski had the chance to strengthen the Centre parties which might have produced a clearer majority after the next elections, if his stabilisation had been successful. It certainly would have prevented society from a further discontent with Polish politics. Zdziechowski, on the other hand, disillusioned the Left and the peasants and drove them in the arms of Pilsudski.

VII

CONCLUSIONS

> "Decapitalisation is at the core of the problem. Hence, the accumulation of new capital is the only possible remedy, the parents of which are work and saving. The consequent conclusion is: We now have to work and save."[1]

Poland which was re-established in 1918 after 123 years of foreign partition had a very difficult beginning. The country was shattered and disorganised by the Great War, both industrial and agricultural production had decreased to small fractions of their pre-war averages, the markets for Polish produce were lost, the country was disintegrated, and a large part of the Polish population was starving. At the same time, there was only very limited private initiative to restart the economy due to the fact that nobody knew whether the new state would be able to survive and in what kind of framework this could possibly be achieved. Everything was vague, uncertain and insecure. In this situation, state intervention was needed everywhere. The border wars further increased the presence of the state. In consequence, the first Polish governments faced the problem of financing their engagements. The initial bills of the new state were exceptionally high, while revenues were very low due to both the impoverishment of the population and the lack of institutions to collect taxes. Thus, the state resorted to the printing press as the only possible alternative of mobilising the necessary funds in an emergency situation. Arguably, the factors that enforced high inflation on the reborn country, namely hunger, war, destruction, disintegration and the lack of institutions, were exogenous for the government. They were the price for Polish statehood. Until the end of the border wars, there was neither politically nor economically an alternative to inflationary finances. In this context, the original inflation that was inherited from the occupation powers does not seem to have influenced the initial dynamics of Poland's own post-war inflation.

The second stream that fed the inflation, at least in its initial phase, was the negative balance of payments. The funds needed to bridge the deficit were provided by the export of Polish marks abroad. Yet, this in turn caused a further depreciation of the currency since the exchange rate had to include a buyers' premium. The argument about the negative balance of trade then runs on a similar line as the one about the budget deficit. War and reconstruction were again exogenous factors that made it necessary for the state to import large quantities of raw materials and investment goods, while, at the same time, there were hardly any goods that could have been exported. Consequently, a negative balance

[1] A. Krzyzanowski (1925): Pauperizacja Polski wspolczesnej, Kraków, p. 116

of trade emerged causing a further depreciation of the currency.

However, the wars, inflation and the system of rationing removed these exogenous factors in short time. The war established the borders, and the need for discipline that they fostered helped to set up state institutions and actually accelerated the process. Furthermore, the new Polish army, expensive as it was, became important as a major force of integration. It compensated for the loss of markets since it bought almost the entire Polish produce. In this way, it stimulated both initiative and full employment. At the same time, the infrastructure needed for the supply of the army acted with the system of rationing to integrate the different markets. Inflation, on the other hand, lifted the burden of debts from the agrarian sector, allowed for large profits in production, but still left enough money within the society to ensure that private consumption could replace military consumption after the wars. Thus, the economy received a push that started reconstruction and growth. Simultaneously, agriculture increased its output to an extent that made Poland independent from food imports, at least for the moment, and hunger ceased to be a problem. When peace was concluded in 1921, the most burning problems had thus already been solved. The state had been given an overall framework, production had received a first push, starvation was coming to an end, and integration as well as reconstruction had begun. In conclusion, the first phase of inflation between 1918 and 1921 that coincided with the border wars can be described as a "budget inflation". It arose from a situation that was exogenous to the government. However, the rapid resolution of exogenous factors was one of the most important differences between the Polish and the German examples of post-war inflation. While in Poland the border wars and some initial reconstruction were the only exogenous factors in the inflationary regime, in Germany reparations remained a burden throughout the inflationary period and thus determined the course of the process.

When war and hunger disappeared, the argument for continuing inflation became weaker since it was no longer a question of life and death. Now, state expenditure in excess of revenues was a political preference rather than an exogenously determined necessity. Inflation remained, of course, essentially an economic problem, yet stabilisation came to be determined by political factors. The economics of stabilisation seemed rather easy since all the government would have to do was either to reduce expenditure or to replace the inflation tax by a regular form of revenue.[2] However, these changes had to be agreed by the legislature. In the Polish case, in 1921, all political parties represented in the Sejm realised the changes that the end of the wars and the improvements in industry and agriculture had brought about. All of them supported a gradual liberalisation of the economy.

[2] The first person who realised this was Grabski during his first time in office. He therefore planned institutional changes to match expenditure and revenues that were to be introduced after the wars. However, he was not able to bring them into being since he had to resign before the cease fire. For details see W. Grabski (1920): Projekt programu polityki ekonomicznej i finansowej Polski po wojnie, Warszawa

The state was to limit its involvement in the markets, the system of rationing and foreign trade restrictions was to be abolished, and state finances were to be shored up. There was a general consensus that inflation was something despicable, an evil that had to be overcome. Furthermore, the vast majority of Polish politicians regarded a stable national currency as the ultimate achievement of national autonomy. This was also the attitude that allowed for the appointment of Michalski as Finance Minister and the implementation of his stabilisation programme. Yet, his policies became a turning point in Poland's history of inflation. In the autumn of 1921, a change in expectations raised the external value of the Polish currency and lifted Polish prices over those of the world market. Simultaneously, the state reduced its demand, the volume of trade and production decreased, unemployment rose, and Polish politicians realised for the first time that inflation, as an institution, had been a major contributor to the positive business climate. In the first post-war recession, industry realised that its prices were too high to compete on the world market, that credit was too scarce to allow for further reconstruction as well as the adjustment towards the markets and that Polish taxes were eating up its profits. Consequently, it turned against the programme, demanding tax exemptions for investments and exports as well as credits for reconstruction and adjustments. Industry ranked its claims higher than the maintenance of fiscal and monetary stability. The workers, on the other hand, saw another emergency situation when unemployment rose. In this situation, they did not object to a return towards a supply-side policy since it seemed to be the fastest way to get the economy going again.

However, this development caused a further polarisation of Polish politics. The Right, which represented trade, industry and mining as well as the large land owners, knew that its clientele was the winner in the inflationary process. The Left representing the workers, on the other hand, was aware of its loosing, while the Centre with its predominantly agrarian clientele was rather indifferent towards inflation. As a result, the political development of the country already in the autumn of 1921 predicated a stop-and-go pattern of inflation. Workers would demand stability when production was booming, and industrialists would demand inflation with the re-occurrence of recession. Yet, the stop-and-go would never reach the extreme again since with increasing experience more compromises would become necessary on both sides. In the Polish case, Michalski's reform was the starting point of a new phase of inflation, yet it also brought about the introduction of the theoretical zloty as a standard of value and a basis for future indexation. Thus, a factor came into being which from then on gradually diminished the positive business climate.

Change was also brought about through the inherent dynamics of inflation that caused an acceleration of the process and a rise in the inflation rate. With ever higher and faster price rises, uncertainty increased within the society. For many, the evil became worse while the advantages were reduced. This led to another turning point in the inflationary development. In the summer of 1923, uncertainty reached a climax due to the failed attempt to restrict foreign exchange transactions and the simultaneous collapse of the German currency. Now adjustment intervals grew ever shorter and put real wages at risk. In consequence, workers demanded better protection, i.e. effective indexation, and stability. Strikes underpinned their demands. When Polish prices began to surpass world market prices and the turnover of Polish goods decreased, the Right joined in the demand for stability, allowing for a cabinet of specialists commissioned to cure the sick state finances. The second phase of inflation thus came to an end. The important feature of this phase had been that it was all directed towards industry and reconstruction. While the first phase had established the state with its borders and institutions, the second phase reconstructed industry and improved the services of the state.

However, the unsuccessful stabilisation attempt of Michalski also constituted a turning point in the development of the external value of the Polish currency. So far, international speculators had bought Polish marks in the hope that they would appreciate once the inflationary process would come to an end. The failure of this first attempt, however, showed clearly that this was an unlikely scenario. Polish marks that were still held abroad were gradually returned and from then onwards, Poland had to find other means to balance its foreign payment obligations. Luckily, this trend coincided with the liberalisation of trade, the resulting increase in exports and the incorporation of Upper Silesia so that the country did not experience balance of payments difficulties. This is another difference with the German example; namely that in Poland the monetary overhang abroad was relatively smaller and the return of Polish marks occurred more gradually. In Germany, on the other hand, it was triggered by the shock of the murder of Rathenau. The main difference, however, was again the reparation issue. While the Polish balance of payments was elastic since the end of the wars, reparations made the German one inelastic to a large extent. Germany had to make sure that it secured enough funds abroad to cover at least the reparation obligations as well as the imports of vital goods.

Grabski's stabilisation of 1924 replaced the inflation tax by other forms of revenues and simultaneously removed the distributionary mechanisms of the tax system. The tax burden of the lower income groups was lifted, while the higher income groups now had to shoulder the costs of stability. The reforms increased the prices of Polish products, hampering exports and promoting imports. Profits in industry were severely curtailed by both the beginning recession and the high tax burden. At the same time credit was scarce since inflation had eaten up savings. Finally, investments hardly seemed to pay off since the new Treasury and railway bonds promised a higher yield than innovation in a recessionary environment. Again the general attitude towards inflation changed. This time, however, the government stood firm about its own expenditure. It did not allow for a new budget inflation. But, it also did not prevent the newly emerging "business inflation".

The recession that started in the early summer of 1924 put pressure on both the government and the central bank to issue additional money to meet the most urgent credit requirements of Polish industry and agriculture. When these credits were granted, they did not translate into immediate economic growth since the purchasing power of the Polish population was low and the export trade was hampered. However, a significant share of the money was invested in productivity improvements. The Polish textile industry is a good example of this new trend of qualitative improvements in Polish industry. However, the problem with the second inflation was two-fold. On the one hand, prices and wages increased since more money was chasing a reduced number of goods. Therewith, government expenditure increased. Yet revenues did not increase to the same extent since the recession continued and more and more people found themselves unable to fulfil their tax obligations. A necessary consequence would have been to reduce expenditure, but this would have increased the number of unemployed. As a result, a new budget inflation emerged that used the issue of coins and small change to cover the new budget deficit. This time, however, the inflation rates remained far below the ones of the first period. Consequently, it was much easier to steady public finances. When the fixed exchange rate of the zloty collapsed, the Polish currency became undervalued, thus promoting exports. At the same time, the process of restructuring was completed in most industries. Thus, Polish competitiveness increased and in combination with higher protective tariffs, the economy received a push that translated into new growth from February 1926. This trend then raised public revenues and the printing press came to a halt in the autumn of 1926. The stabilisation act of 1927 only recognised the status quo. The foreign loan was used as a security net under a still volatile system. Ultimately, it was economic development that lifted the state out of recession. The first phase of inflation had assisted the economy to reconstruct its plant. It thus improved the quantity of Polish production. The second phase then restructured the firms and lifted the quality of Polish production. At the end, the basis was laid for sustainable long-term growth. This was started off by the undervaluation achieved in the second half of 1925, the British coal strike of the first half of 1926 and the political stability provided by Pilsudski's coup d'état of May 1926.

In conclusion, while the first inflation had reconstructed the plants and widened the production capacity, the second inflation now adjusted the range of products to the markets. This third phase in the inflationary period was thus entirely an industrial inflation. By then, reconstruction was already achieved and the economy now concentrated on adjustment. The new budget inflation was significant only in so far as it allowed for the realignment of the exchange rate.

This is the description of the course of inflation and stabilisation which best gives the historical facts brought to light by this thesis. How does it lead us to modify the theoretical models of hyperinflation which have been proposed and which were considered in chapter II? One of the lessons economists can draw from the Polish example is that hyperinflations are not alike even if they do all start with the printing press. This might sound trivial, but it is important to understand the problems some countries face when they try to stabilise. In Poland all factors involved in the process were endogenous once the wars had come to an end and the population produced enough food to nourish itself. Therefore, the country was able to stabilise by its own means. Since the government only had to replace the inflation tax by regular forms of revenue, stabilisation was a political problem. In Germany, on the other hand, one of the main factors was exogenous, namely reparations, and thus the problem was not entirely within the capacity of the country itself to solve. Consequently, only foreign capital was able to help Germany out of the trap.

The Polish case is also a good example of a more technical problem concerning inflation, namely identifying the factor that takes the lead in inflationary dynamics. The fact that changes in the money supply start the process does not seem controversial. Yet, the Polish case suggests that the relationship of money, prices and the exchange rate change during the process. All three variables that are influenced by inflation, namely the money supply, the exchange rate and prices, have a theoretical chance of taking the lead and shifting the regime into hyperinflation. The Polish example, however, produces new evidence that, in practice, the exchange rate will eventually take the lead if the process is not influenced by exogenous shocks. In consequence, strong exchange restrictions are vital to combat inflation. The introduction of a stable secondary currency also eases the pressure on the exchanges and can smoothen the course of stabilisation. Shocks, on the other hand, can speed up any of the inherent trends of the inflationary regime and bring about hyperinflation. The dynamics of inflation are such that shocks are not necessary to bring about the qualitative change that stands at the end of the process, but they become increasingly more likely due to the volatility of the regime.

Yet, in Poland, inflation meant more than just paying the price for reconstruction. Inflation was actually its means. In the first phase, the wars meant an increase in state consumption since goods were produced to destroy and to be destroyed. It can be argued that Polish national wealth, measured as the sum of all physical values within the country, actually declined between 1918 and 1920. The increase in production was due to a fall in savings. On the other hand, however, this state consumption can also be interpreted as a programme of public works that caused a Keynesian inflationary boost to a static situation of underemployment. The wars provided initiative, a market, infrastructure, institutions and an initial integration. This was made possible by mobilising the country's savings, taxing private consumption and allowing for large profit margins in production. Thus, Poland achieved qualitative improvements. It was a period of realignment rather than of quantitative growth. Only in the second part of the inflationary experience did Poland actually achieve growth in real terms. Employment and working hours rose while productivity remained stable and even increased in some industries. Polish industry was able to sell both at home and abroad. It was thus able to afford the reconstruction of the plants and in some industries even expansion beyond the pre-war level. At the same time, Polish production found new outlets. It was assisted by the undervaluation of the currency which made Polish prices more competitive. Simultaneously, the costs of money holding stimulated this trend even further, so that both profits and savings were invested to achieve maximum growth. Then, the first phase put strong pressure on prices and competitiveness. It was a period of economic contraction, but of qualitative improvements. Industry was able to adjust its market situation and the rapid growth of the earlier period was trimmed to put the economy on track for sustainable growth. The major problem that Poland was left with after the period of reconstruction was the structural deficiencies of the agrarian sector and the resulting poorly developed home market. Thus, Poland had to rely on improvements in its export record if it was to achieve growth in the short-run. This trend proved fatal in the crash of 1929 when international demand for Polish goods collapsed.

The failure to address the structural deficiencies of the Polish economy is directly related to the political argument in the reconstruction process. The question arises why Poland was able to build up the new state and reconstruct the economy in such a relatively short period, but did not solve the obvious problem of property rights and social structure. The evidence presented in this thesis suggests, paradoxically as it might sound, that the lack of leadership was responsible for both success and failure. Apart from many mistakes, Poland had quite a successful beginning to its new statehood. State institutions were built up, unification progressed fast and production was soon able to support the Polish population. Yet, Poland was very lucky that this was actually achieved. Inflation had never been a conscious choice, but had come about because inexperienced politicians and their diverse views paralysed the executive. It was actually the result of *laissez-faire*. However, given the state of Polish institutions, it was probably the best possible development programme. The distributionary mechanism of inflation directed all available resources into the right channels producing impressive quantitative and qualitative growth. The only burden it did not take from the shoulders of the politicians was that of the agrarian reforms and that is the reason why they took so long to be achieved. A lot of credit for post-war reconstruction must go to Grabski. He was the minister who achieved monetary unification, and his refusal of international credits arguably allowed for a faster development of the country, namely through inflation, than otherwise would have been possible. No other programme involving the same process of redistribution of wealth would have been politically feasible. He was also responsible for the successful negotiations of the second land reform bill in 1925 and the consequent development of the home market. However, his major mistake was his pretensions. He did not accept that a country like Poland could not afford a budget as large as that of some of its neighbours. It was his failure to slim down public expenditure that led to the second budget inflation. Yet, even

Grabski never provided the political leadership that would have been necessary to follow a persistent programme. Politics were paralysed throughout the inflationary period. This did not matter as long as inflation managed the reconstruction process. Once, however, it had achieved its task, the search for leadership began and culminated in Pilsudski's coup. The scenario of inflation leading the reconstruction process implies that one of the possible lessons from the Polish experience is that it is more than difficult to achieve physical, political and institutional reconstruction simultaneously. When the economy has to rely on the redistribution of wealth in order to achieve the basis for growth, politics needs strong leadership. Poland, however, found its way around the problem by accepting the lead of inflation. Another positive factor was the wars that put pressure on the institutions to act collectively and coherently rather sooner than later.

If inflation provided the means of reconstruction, it has to be established how expensive the process was. All Polish economists at the time of the inflation, i.e. in the 1920s, argued that inflation was very costly for the Polish economy. Thus, Krzyzanowski, for example, calculated the loss to the Polish economy through inflation as about zl 10,000 million or $ 1,930 million between 1918 and 1923 which the country had to pay in addition to the zl 15,000 million or $ 2,900 million lost during World War I through destruction.[3] He explained that economic growth in this period was achieved by consuming the country's savings which decreased to a larger extent than new values were produced. He based his calculations on estimated national wealth figures for Poland in the borders of 1923 for the years 1913 and 1924. Yet, this does not seem a valid question. It does not make much sense to compare the pre-World War I Polish lands with the new Polish state, which had different institutions, different markets, different orientations, a different environment as well as war losses that were more than just quantitative, but also changed the quality of the Polish economy. The true comparison has to be done between 1918 and 1927, and there one can argue that Poland achieved remarkable growth in both quantitative and qualitative terms. The overall output was similar to the 1913 figures, but now production was already adjusted towards the new requirements.

A last lesson could inform the new growth theory. Sala i Martin wrote in a recent working paper on endogenous growth that "policies directed to increasing the saving (and investment) rate effect the long-run growth rate of the economy", while "a temporary recession will have permanent effects. That is, if the capital stock temporary falls for some exogenous reason, the economy will not grow temporarily faster so as to go back to the prior path of capital accumulation. The loss will tend to be permanent."[4] The Polish example seems to support both theses. In Poland, the wars constituted exogenous factors which reduced the capital stock and changed the structure of the economy. Given the lack

[3] J. Zdziechowski (1955): Skarb i Pieniadz 1919-1939, London, p. 16

[4] X. Sala i Martin (1994a): "Lecture Notes on Economic Growth (I): Introduction to the Literature and Neo-classical Models", Economic Working Papers 77, Universitat Pompeu Fabra, p. 15

of initiative and infrastructure at the beginning of the new state, it was quite unlikely that the economy would grow very fast to compensate for the loss. It was only through inflation which increased both the saving and the investment rate and directed the funds into the right channels that Poland started a process of endogenous growth. Yet, the Polish example thus also shows that extreme inflation can be an exogenous factor in the economic performance of a country. It can provide exactly the shock that a peripheral country needs to push its economy into changes.

Ultimately, the thesis sheds new light on the generalisation about the European inflationary experiences of the 1920s. It introduces the distinction between exogenously and endogenously imposed inflation which determined both the turn into hyperinflation and the final stabilisation of the different examples. It also reduces the core problems of these exceptional economic occurrences to reparations, on the one hand, and reconstruction, on the other. Politically, all cases had in common that the governments of the inflationary regimes seemed particularly weak. These conclusions should result in further research. We lack a consistent econometric model of extreme inflation that explains the inherent trends of the process. Furthermore, it would also be interesting to have a political model which takes account of the stabilisation dilemma. For a full appreciation of the Polish experience, new research should go to the process of cartelisation which started during the inflation, as well as to the textile industry, which only survived the period due to massive subsidies, and to the chemical industry whose sudden establishment and boom might have been facilitated by the inflation.

Last, the thesis leaves us with the hypothetical question whether there would be a Bundesbank and a strong German mark today if the German inflation of the 1920s had not started with the "Schmach of Versailles"[5]. In Poland, moderate inflation seems currently to be accepted as an economic tool. Yet, there it was once (or maybe even twice as one would hope after 1989) the start of a positive new era, while in Germany it was the beginning of the end.

[5] "Disgrace of Versailles" was the slogan most Germans accepted in the interwar period as the appropriate description of the peace terms.

Appendix

	Money Stock (billion MP)	State Debt (billion MP)	MP/$	Money Index (1914=1)	$ Index (1914=1)	WSP Index (1914=1)
Jan 19	1.098	0.210	8.19	3.7	1.9	..
Feb 19	1.160	0.315	9.12	3.9	2.2	..
Mar 19	1.223	0.400	10.42	4.1	2.5	..
Apr 19	1.346	0.575	15.18	4.5	3.6	..
May 19	1.548	0.925	15.39	5.2	3.7	..
Jun 19	1.785	1.125	17.72	6.0	4.2	..
Jul 19	2.088	1.925	19.07	7.0	4.5	..
Aug 19	2.467	2.525	25.76	8.2	6.1	..
Sep 19	2.965	3.225	29.23	9.9	7.0	..
Oct 19	3.724	4.375	36.38	12.4	8.7	..
Nov 19	4.236	5.375	47.42	14.1	11.3	..
Dec 19	5.316	6.825	100.08	17.7	23.8	..
Jan 20	6.720	8.275	132.10	22.4	31.4	..
Feb 20	8.300	10.775	155.22	27.7	36.9	35.8
Mar 20	10.691	14.775	158.90	35.6	37.8	44.5
Apr 20	16.028	19.375	172.17	53.4	41.0	51.8
May 20	17.935	22.375	190.05	59.8	45.2	57.5
Jun 20	21.730	27.625	164.18	72.4	39.1	65.0
Jul 20	26.311	33.375	170.77	87.7	40.6	71.5
Aug 20	31.086	39.625	211.09	103.6	50.2	80.3
Sep 20	33.204	40.625	242.18	110.7	57.6	86.5
Oct 20	38.457	46.925	273.07	128.2	65.0	93.5
Nov 20	43.236	49.625	420.67	144.1	100.1	111.5
Dec 20	49.362	59.625	556.40	164.5	132.4	140.8

(Sources: *Rocznik Statystyki Rzeczypospolitej Polskiej 1920/22*, vol. 2, pp. 212, 225, 248; *Rocznik Statystyki Rzeczypospolitej Polskiej 1924*, pp. 144, 159, 284; *Rocznik Statystyki Rzeczypospolitej Polskiej 1930*, p. 277; *Rocznik Ministerstwa Skarbu 1924*, p. 126; *Sprawozdanie Polskiej Krajowej Kasy Pozyczkowej za rok 1923*, Zalacznik 2; E. Taylor (1926): Inflacja Polska, Poznan, pp. 22-23)

	Money Stock (billion MP)	State Debt (billion MP)	MP/$	Money Index (1914=1)	$ Index (1914=1)	WSP Index (1914=1)
Jan 21	55.080	65.625	766.51	183.6	182.4	180.5
Feb 21	62.560	77.125	807.71	208.5	192.2	222.3
Mar 21	74.084	93.625	859.59	246.9	204.6	250.0
Apr 21	86.755	106.63	805.43	289.2	191.7	251.5
May 21	94.576	117.63	914.78	315.3	217.7	250.8
Jun 21	102.70	130.63	1049.79	342.3	249.8	272.8
Jul 21	115.24	140.63	1817.54	384.1	432.5	328.8
Aug 21	133.73	158.00	2221.47	445.8	528.7	401.0
Sep 21	152.79	178.00	4944.41	509.3	1176.7	518.3
Oct 21	182.78	198.00	4498.76	609.3	1070.6	628.5
Nov 21	207.03	214.00	4361.78	690.1	1038.0	620.5
Dec 21	229.54	221.00	3190.41	765.1	759.3	578.0
Jan 22	239.62	227.35	3057.73	798.7	727.7	578.0
Feb 22	247.21	230.60	3570.81	824.0	849.8	607.0
Mar 22	250.67	232.10	4140.90	835.6	985.5	663.5
Apr 22	260.55	220.00	3855.85	868.5	917.6	721.0
May 22	276.00	217.00	4032.06	920.0	959.6	760.5
Jun 22	300.10	235.00	4260.10	1000.3	1013.8	923.0
Jul 22	335.43	260.00	5639	1118.1	1342.0	937.0
Aug 22	385.79	285.00	7660	1286.0	1822.9	1175.0
Sep 22	463.71	342.00	7788	1545.7	1853.4	1427.0
Oct 22	579.97	453.00	11191	1933.2	2663.3	1500.0
Nov 22	661.10	519.50	15976	2203.7	3802.0	2360.0
Dec 22	793.44	675.60	17741	2644.8	4222.0	3079.0
Jan 23	909.16	799.50	25354	3030.5	6033.8	5391.0
Feb 23	1177.3	1085.0	41580	3924.3	9895.3	8431.0
Mar 23	1841.2	1752.0	42697	6137.3	10161.1	9784.0
Apr 23	2332.4	2161.5	44698	7774.7	10637.3	10481.0
May 23	2733.8	2377.0	49000	9112.7	11661.1	11130.0
Jun 23	3566.6	2996.5	86055	11888.7	20479.5	18623.0
Jul 23	4478.7	4190.5	127731	14929.0	30397.7	30387.0
Aug 23	6871.8	6473.0	237041	22906.0	56411.5	52408.0
Sep 23	11198	10266	282507	37326.7	67231.6	72278.0
Oct 23	23080	19080	1033784	76933.3	246021.9	276487.0
Nov 23	53217	42854	2297859	177390.0	546848.9	679437.0
Dec 23	125372	111332	5078269	417906.7	1208536.2	1423007.0
Jan 24	313660	238200	9241975	1045533.3	2199422.9	2521667.0
Feb 24	528913	291700	9283150	1763043.3	2209221.8	2484296.0
Mar 24	596244	291700	9325000	1987480.0	2219181.3	2452779.0
Apr 24	570698	291700	9325000	1902326.7	2219181.3	2423218.0

(Sources: *Rocznik Statystyki Rzeczypospolitej Polskiej 1920/22*, vol. 2, pp. 212, 225, 248; *Rocznik Statystyki Rzeczypospolitej Polskiej 1924*, pp. 144, 159, 284; *Rocznik Statystyki Rzeczypospolitej Polskiej 1930*, p. 277; *Rocznik Ministerstwa Skarbu 1924*, p. 126; *Sprawozdanie Polskiej Krajowej Kasy Pozyczkowej za rok 1923*, Zalacznik 2; E. Taylor (1926): Inflacja Polska, Poznan, pp. 22-23)

	Money Stock (million zl)	Coins (million zl)	zl/$	Money Index (1914=1)	$ Index (1914=1)	WSP Index (1914=1)
Jan 24	171.9	0.0	5.18	28.7	100.0	106.9
Feb 24	294.2	0.0	5.18	49.0	100.0	111.8
Mar 24	331.2	0.0	5.18	55.2	100.0	110.4
Apr 24	317.1	0.0	5.18	52.9	100.0	109.0
May 24	440.0	28.7	5.18	73.3	100.0	104.0
Jun 24	499.7	76.4	5.18	83.3	100.0	100.6
Jul 24	530.8	117.5	5.18	88.5	100.0	102.3
Aug 24	563.5	123.1	5.18	93.9	100.0	109.2
Sep 24	591.1	124.7	5.18	98.5	100.0	112.4
Oct 24	642.9	136.0	5.18	107.2	100.0	116.4
Nov 24	629.0	129.3	5.18	104.8	100.0	116.6
Dec 24	675.8	123.1	5.18	112.6	100.0	118.3
Jan 25	694.3	139.3	5.18	115.7	100.0	123.2
Feb 25	737.1	185.7	5.18	122.9	100.0	125.9
Mar 25	754.8	189.9	5.18	125.8	100.0	127.0
Apr 25	752.5	183.6	5.19	125.4	100.2	124.4
May 25	766.2	207.6	5.19	127.7	100.2	123.0
Jun 25	747.2	244.0	5.19	124.5	101.4	123.0
Jul 25	746.3	284.6	5.19	124.5	112.7	121.8
Aug 25	745.7	306.1	5.25	124.3	115.4	121.3
Sep 25	739.7	343.1	5.84	123.3	125.7	121.8
Oct 25	761.5	379.1	5.98	126.9	175.7	119.4
Nov 25	745.1	383.2	6.51	124.2	145.8	126.8
Dec 25	815.0	433.6	9.10	135.8	144.8	142.3
Jan 26	781.0	419.0	7.55	130.2	150.6	136.8
Feb 26	791.7	418.8	7.50	132.0	173.9	140.3
Mar 26	815.2	425.8	7.80	135.9	203.7	140.3
Apr 26	828.7	435.8	9.01	138.1	194.8	155.0
May 26	855.2	442.2	10.55	142.5	177.6	168.5
Jun 26	907.8	459.8	10.09	151.3	174.9	164.2
Jul 26	980.8	469.6	9.20	163.5	173.7	157.2
Aug 26	1007.3	447.1	9.06	167.9	173.7	162.2
Sep 26	1008.2	426.8	9.00	168.0	173.7	162.8
Oct 26	1036.3	425.1	9.00	172.7	173.7	164.3
Nov 26	983.7	425.8	9.00	164.0	173.7	165.7
Dec 26	1021.1	428.4	9.00	170.2	173.7	166.8
Jan 27	992.1	..	8.99	165.4	173.6	167.3
Feb 27	1046.7	..	8.94	174.5	172.6	168.7
Mar 27	1091.0	..	8.94	181.8	172.6	170.4
Apr 27	1128.3	..	8.93	188.1	172.4	175.0
May 27	1104.3	..	8.93	184.1	172.4	176.4
Jun 27	1121.4	..	8.93	186.9	172.4	176.1
Jul 27	1129.3	..	8.93	188.2	172.4	176.9
Aug 27	1190.9	..	8.93	198.5	172.4	175.8
Sep 27	1253.0	..	8.93	208.8	172.4	174.9
Oct 27	1339.5	..	8.93	223.3	172.4	175.1

(Sources: *Rocznik Statystyki Rzeczypospolitej Polskiej 1924*, pp. 159, 284; *Rocznik Statystyki Rzeczypospolitej Polskiej 1925/26*, pp. 295, 320; *Rocznik Stastysyki Rzeczypospolitej Polskiej 1928*, pp. 552-553; *Rocznik Ministerstwa Skarbu 1924*, p. 122; E. Lipinski et al. (1928): Konjunktura gospodarcza w Polsce 1924-1927, Warszawa, p. 60)

Bibliography

1. ARCHIVES AND OFFICIAL PUBLICATIONS

Archivum Akt Nowych, Warszawa, Poland

- Grabski File
- Kauzik File
- Logistics Ministry
- Ministry of Agriculture
- Ministry of Communication
- *Minutes of the Meetings of the Executive Committee of the Bank Polski*
- *Minutes of the Meetings of the Council of Ministers*
- *Minutes of the Meetings of the Economic Committee of the Council of Ministers (KERM)*
- *Minutes of the Meetings of the Economic Committee of Ministers (KEM)*
- *Minutes of the Meetings of the Political Committee of the Council of Ministers (KPRM)*
- Paderewski File
- Railway Ministry
- Treasury Ministry

Bank of England, London, UK

- Overseas Department

Bank Polski, Warszawa, Poland

- *Sprawozdanie Banku Polskiego za pierwszy okres dzialalnosci od 28 kwietnia do 31 grudnia 1924r*
- *Sprawozdanie Banku Polskiego za rok 1925, ... 1926, ...1927*

Cabinet Office, Warszawa, Poland

- *Dziennik Praw Panstwa Polskiego* 1918-1919
- *Dziennik Ustaw Rzeczypospolitej Polskiej* 1919-1927
- *Monitor Polski* 1918-1927

Labour Ministry, Warszawa, Poland

- *Miesiecznik Pracy* 1921
- *Statystyka Pracy* 1922-1928

League of Nations Archive, Genève, Switzerland

- Bureau du Secrétaire général
- Drummond File
- Loveday File
- Section économique et financière

Main Statistical Office, Warszawa, Poland

- Dzial VI: Statystyka Spoleczna
- *Kwartalnik Statystyczny* 1925-1930
- *Maly Rocznik Statystyczny* 1930-1939
- *Miesiecznik Statystyczny* 1921-1927
- *Rocznik Statystyki Rzeczypospolitej Polskiej* 1920/21-1930
- *Sprawozdanie Wydzialu Statystycznego* 1918-1920
- *Wiadomosci Statystyczne* 1924, 1926, 1927

Ministry of Foreign Affaires, Warszawa, Poland

- *Sprawozdanie Miesieczne z Handlu Zagranicznego* 1919/20, 1921

Polska Krajowa Kasa Pozyczkowa, Warszawa, Poland

- *Sprawozdanie Polskiej Krajowej Kasy Pozyczkowej za czas od 11 listopada 1918r. do 1 maja 1919r.*
- *Zamkniecie rachunków Polskiej Krajowej Kasy Pozyczkowej za rok 1920, ... 1921*
- *Sprawozdanie Polskiej Krajowej Kasy Pozyczkowej za rok 1922, ... 1923*

Public Record Office, Kew, UK

- Department of Overseas Trade
- Foreign Office

Sikorski Institute, London, UK

- Raczynski File

Treasury Ministry, Warszawa, Poland

- *Bulletin statistique du Ministère des Finance* 1925-1927
- *Dziennik Urzedowy Ministerstwa Skarbu* 1919-1927
- *Rocznik Ministerstwa Skarbu* 1924, 1927-1930

2. LITERATURE

Abel, A., Dornbusch, R., Huizinga, J., Marcus, A. (1991): "Money Demand During Hyperinflation", in *Journal of Monetary Economics 5*, pp. 97-104

Adamczewski, T. (1919): Reforma walutowa w Polsce, Poznan

Adamczewski, T. (1931): Pieniadz i problem jego wartosci, Poznan

Aldcroft, D.H. (1993): The European Economy 1914-1990, 3rd ed., London

Bajer, K. (1958): Przemysl wlókienniczy na ziemiach polskich od poczatku XIX w. do 1939r. Zarys ekonomiczno-historyczny, Lódz

Baranski, T. (1926): Uwagi nad obiegiem pieniedznym w Polsce, Warszawa

Baranski, W. (1928): Kwestja drewna w Polsce, Warszawa

Bernholz, P., Gersbach, H. (1992): "The present monetary theory of advanced inflation. A failure?", in *Journal of Institutional and Theoretical Economics 148*, pp. 705-719

Bilinski, L. (1925): Wspomnienia i dokumenty, 2 vols, Warszawa

Bloomfield, A. (1963): Short-Term Capital Movements Under the Pre-1914 Gold Standard, Princeton

Blumenstrauch, B. (1932): Le nouveau régime monétaire en Pologne et son rôle dans l'économie nationale, Nancy

Bobinska, C., Pilch, A. (1975): Employment-seeking Emigrations of the Poles world-wide XIX and XXc, Kraków

Borst, K.H. (1931): Die Auslandsverschuldung des polnischen Staates, Lodz

Bräutigam, H. (1927): Die Handelspolitik Polens seit Erlangung der Selbständigkeit bis zum Ablauf der Genfer Konvention am 15. Juni 1925, Berlin

Bresciani-Turroni, C. (1937): The Economics of Inflation. A Study of Currency Depreciation in Post-War Germany, London

British Economic Mission to Poland (1919): Report on the Economic Condition of Poland. February-March 1919, London

Bruno, M. (1988): Inflation Stabilization. The Experience of Israel, Argentina, Brazil, Bolivia, and Mexico, Cambridge/Mass.

Bruno, M. (1993): Crisis, Stabilisation, and Economic Reform, Oxford

Buczkowski, T., Nowak, H. (1929): "Rozwój kredytu w latach 1918-1928", in Zaleski, S. (ed.): Bilans gospodarczy dziesieciolecia Polski odrodzonej, Poznan, vol. 2, pp. 105-204

Buell, R.L. (1939): Poland. Key to Europe, London

Buetz, G. (1921): "Polens Finanzwesen", in *Jahrbücher für Nationalökonomie und Statistik 11*, pp. 439-448

Cagan, P. (1956): "The Monetary Dynamics of Hyperinflation", in Friedman, M. (ed.): Studies in the Quantity Theory of Money, Chicago, pp. 25-117

Capie, F.H. (1991): Major Inflations in History, Aldershot

Capie, F.H. (1991): "Conditions in which very rapid inflation has appeared", in Capie, F.H. (ed.): Major inflations in History, Aldershot, pp. 3-56

Clark, C. (1957): The Conditions of Economic Progress, London

Czarnomski, F.B. (1925): The Polish Handbook, London

Czarnowski, S. (1920): "Kronika przemyslowa", in *Ekonomista 4*, pp. 86-137

Czerski, K. (1920): "Kryzys weglowy w Polsce w roku 1919", in *Ekonomista 2*, pp. 90-101

Chrzanowski, Z. (1928): "Polska produkcja zbozowa", in Przemysl i Handel (ed.): 1918-1928. Special Issue, Warszawa, pp. 322-324

Dabrowski, J. (1922a): "Rzut oka na stan przemyslu w Polsce w r. 1921", in *Przemysl i Handel 11*, pp. 164-168

Dabrowski, J. (1922b): "Obecny stan kredytów", in *Przemysl i Handel 47*, pp. 658-662

Dabrowski, M. (1929): Dziesieciolecie Polski odrodzonej. Ksiega pamietkowa 1918-1928, Kraków

Davies, N. (1972): White Eagle, Red Star, The Polish-Soviet War 1919-1920, London

Davies, N. (1981): God's Playground. A History of Poland in Two Volumes, 2 vols, Oxford

Deutsche Bundesbank (1976): Währung und Wirtschaft, Frankfurt/M.

Diamand, H. (1932): Przemówienia w Sejmie Rzeczypospolitej 1919-1930, ed. by A. Krieger, Warszawa

Dornbusch, R., Fischer, S. (1993): Macroeconomics, 6th ed., New York

Dornbusch, R., Sturzenegger, F., Wolf, H. (1990): "Extreme Inflation: Dynamics and Stabilization", in *Brookings Papers on Economic Activity 2*, pp. 1-84

Drzazdzynski, T. (1921): "Aprowizacja", in *Ruch Prawniczy i Ekonomiczny 1*

Drecki, J. (1929): "Bezrobocie w Polsce niepodleglej", in Zaleski, S. (ed.): Bilans gospodarczy dziesieciolecia Polski odrodzonej, Poznan, vol. 2, pp. 371-382

Dudek, H. (1929): "Odbudowa kraju", in Dabrowski, M. (ed.): Dziesieciolecie Polski odrodzonej. Ksiega pamietkowa 1918-1928, Kraków, pp. 381-390

Dulles, J.F. (1928): Poland, Plan of Financial Stabilisation, New York

Dziewulski, S. (1923): "Handel zagraniczny Rzeczypospolitej Polskiej", in *Ekonomista 2*, pp. 36-49

Eichengreen, B., McLean, I.W. (1994): "The supply of gold under the pre-1914 gold standard", in *Economic History Review 2*, pp. 288-309

Faberkiewicz, W. (1921): The present state of Polish industries and their prospects of development, London

Faberkiewicz, W. (1922): "O bojkocie gospodarczym Polski przez Niemcy", in *Przemysl i Handel 23*, pp. 365-366

Faberkiewicz, W. (1924a): Polska w liczbach, Warszawa

Fabierkiewicz, W. (1924b): "Zdolnosc platnicza Polski", in Tennenbaum, H. (ed.): Skarb Rzeczypospolitej Polskiej, Warszawa, pp. 1-12

Felderer, B., Homburg,S. (1989): Makrökonomik und neue Makroökonomik, 4th ed., Berlin

Feldman, G.D., Holtfrerich, C.-L., Ritter, G.A., Witt, P.C. (1982): Die deutsche

Inflation. Eine Zwischenbilanz (=Beiträge zu Inflation und Wiederaufbau in Deutschland und Europa 1914-1924, vol. 1), Berlin

Feldman, G.D., Holtfrerich, C.-L., Ritter, G.A., Witt, P.C. (1984): Die Erfahrung der Inflation im internationalen Zusammenhang und Vergleich (=Beiträge zu Inflation und Wiederaufbau in Deutschland und Europa 1914-1924, vol. 2), Berlin

Feldman, G.D. (1991): "Banks and the problem of capital shortage in Germany", in James, H., Lindgren, H., Teichowa, A. (eds): The role of banks in the interwar economy, Cambridge, pp. 49-79

Fisher, H.H. (1928): America and the New Poland, New York

Friedman, M. (1956): Studies in the Quantity Theory of Money, Chicago

Friedman, M. (1956): "The Quantity Theory of Money - A Restatement", in Friedman, M. (ed.): Studies in the Quantity Theory of Money, Chicago, pp. 1-21

Friedman, B.M., Hahn, F.H. (1990): Handbook of Monetary Economics, Amsterdam

Gerloff, W., Meisel, F. (1928): Handbuch der Finanzwissenschaft, 3 vols, Tübingen

Giersch, H., Paqué, K.-H., Schmieding, H. (1992): The Fading Miracle. Four decades of market economy in Germany, Cambridge

Gieysztor, J. (1923): "Koleje zelazne w Polsce w dobie powojennej", in *Przemysl i Handel 47*, pp. 730-731

Gieysztor, J. (1929): "Stan, praca i znaczenie kolei zelaznych w Polsce", in Zaleski, S. (ed.): Bilans gospodarczy dziesieciolecia Polski odrodzonej, Poznan, vol. 2, pp. 1-12

Gieysztor, W. (1924): "Przemysl Polski w walce z przesileniem", in *Przemysl i Handel 8*, pp. 197-199

Glabinski, S. (1920): Drozyzna w Polsce, Warszawa

Glabinski, S. (1928): Narodowa Polityka Ekonomiczna (=Ekonomika Narodowa, vol. 2), Lwów

Glabinski, S. (1939): Historia Ekonomiki Polskiej (=Historia Ekonomiki, vol. 2), Lwów

Glabinski, S. (1986): Wspomnienia polityczne, 2nd ed., London

Gliwic, H. (1938): Industrie et commerce de Pologne pendant la grande guerre, Warszawa

Golebiowski, J. (1985): Sektor panstwowy w gospodarce Polski miedzywojennej, Warszawa

Gomulka, S. (1986): Growth, Innovation and Reform in Eastern Europe, Madison/Wisc.

Gomulka, S. (1986): "Poland's industrialisation", in Gomulka, S. (ed.): Growth, Innovation and Reform in Eastern Europe, Madison/Wisc., pp. 154-194

Gomulka, S., Polonsky, A. (1990): Polish Paradoxes, London

Górecki, R. (1935): Poland and her Economic Development, London

Grabski, W. (1920): Projekt programu polityki ekonomicznej i finansowej Polski po wojnie, Warszawa

Grabski, W. (1926): O wlasnych silach, Warszawa

Grabski, W. (1927a): Dwa lata pracy u podstaw panstwowosci naszej 1924-1925, Warszawa

Grabski, W. (1927b): "Druga Inflacja polska", in *Ruch prawniczy, ekonomiczny i socjologiczny 2*, pp. 104*-115*

Grabski, W. (1929): Historja Wsi w Polsce, Warszawa

Graham, F.D. (1930): Exchange, Prices, and Production in Hyper-Inflation: Germany, 1920-1923, Princeton

Graham, W. (1927): "Financial and Economic Situation in Poland", in *The Banker 11*, pp. 476-521

Gross, D. (1929): Powojenna Odbudowa i Przebudowa Gospodarcza Polski, Kraków

Grossman, G.M., Helpman, E. (1991): Innovation and Growth in the Global Economy, Cambridge/Mass.

Grossman, G.M., Helpman, E. (1994): "Endogenous Innovation in the Theory of Growth", in *Journal of Economic Perspectives 1*, pp. 23-44

Grossman, H. (1922): "Majatek Spoleczny Królestwa Polskiego", in *Miesiecznik Statystyczny 10*, pp. 255-277

Grove, W.M. (1940): War's Aftermath, New York

Grünfeld, W. (1936): Die Auslandsverschuldung Polens, Katowitz

Günther, G. (1931): Polnische Währungspolitik von 1924 bis zur Zlotystabilisierung, Breslau

Guterman, S. (1931): L'organisation du crédit en Pologne. Son évolution depuis la première stabilisation (1924-1930), Paris

Halecki, O. (1983): A History of Poland. New Edition (With additional Material by Antony Polonsky), London

Hall, R.E. (1982): Inflation: Causes and Effects, Chicago

Haller, H. (1976): "Rolle der Staatsfinanzen", in Deutsche Bundesbank (ed.): Währung und Wirtschaft, Frankfurt, pp. 115-155

Hantos, E. (1927): La monnaie et ses systèmes et ses phénomènes en Europe Centrale: Allemagne, Austriche, Hongrie, Pologne, Roumanie, Tchécoslovaquie, Paris

Hausner, B. (1926): Sanacja polskiego pieniadzna bez pomocy zagranicy, Warszawa

Hawtrey, R.G. (1932): The Art of Central Banking, London

Hawtrey, R.G. (1947): The Gold Standard, 5th ed., London

Held, J. (1992): The Columbia History of Eastern Europe in the Twentieth Century, New York

Hilchen, F. (1920): "Rola kapitalu zagranicznego w Polsce", in *Ekonomista 1*, pp. 75-94

Hirsch, F., Goldthorpe, J. (1978): The Political Economy of Inflation, London

Hoelzer, H.,van Almsick, J. (1976): "Der Einfluß der Inflation auf die Verteilung von Einkommen und Vermögen", in *Wirtschaftswissenschaftliches Studium 5*, pp. 351-356

Hoensch, J.K. (1983): Geschichte Polens, Stuttgart

Hofmokl, S. (1921): Uzdrowienie waluty. Projekt ustaw zmierzajacych do uregulowania stosunków walutowych w Polsce wraz z motywami (wobec zamierzen min. Skarbu Dr. J. Michalskiego), Warszawa, Lwów

Holtfrerich, C.-L. (1980): Die deutsche Inflation 1914-1923. Ursachen und Folgen in internationaler Perspektive, Berlin

Holtfrerich, C.-L. (1986): The German Inflation 1914-1923. Causes and Effects in International Perspective (translated by Theo Balderston), Berlin

Holzer, J. (1974): Mozaika politiczna Drugiej Rzeczypospolitej, Warszawa

Horsman, G. (1988): Inflation in the Twentieth Century, New York

Hummel, B. (1939): Dwudziestulecie komunikacji w Polsce odrodzonej, Kraków

Hummel, B. (1939): "Odbudowa i utrzymanie kolei", in Hummel, B. (ed.): Dwudziestulecie komunikacji w Polsce odrodzonej, Kraków, pp. 140-180

Issing, O. (1991): Einführung in die Geldtheorie, 8th ed., München

Iwanski, A. (1929): "Przemysl rolny w Polsce", in Zaleski, S. (ed.): Bilans gospodarczy dziesieciolecia Polski odrodzonej, Poznan, vol. 1, pp. 257-295

Jablonski, H. (1962): Narodziny II Rzeczypospolitej 1918-1919, Warszawa

Jablonski, S. (1925): Aktualne sprawy walutowe, Warszawa

Jackowski, A. (1919): "Przemysl papierniczy w Polsce", in *Ekonomista 3*, pp. 133-149

Jackowski, A. (1920): Przemysl w Polsce po wojnie Europejskiej, Warszawa

Jackowski, A. (1922): Zycie gospodarcze Polski, Warszawa

James, H., Lindgren, H., Teichowa, A. (1991): The Role of Banks in the Interwar Economy, Cambridge

Janicki, S. (1920): Industrial Reconstruction in Poland, London

Janicki, S. (1925): Majatek i Sily Gospodarcze Panstwa Polskiego, Katowice

Janowska, H. (1981): Emigracja zarobkowa z Polski 1918-1939, Warszawa

Jastrzebski, Z. (1923): Eksperimenty czy naprawa Skarbu, Warszawa

Kandir, A. (1991): The Dynamics of Inflation, London

Karpinski, S. (1931): Pamietnik Dziesieciolecia 1915-1924, Warszawa

Karpinski, Z. (1958): Bank Polski 1924-1939, Warszawa

Karpinski, Z. (1968): Ustroje pieniezne w Polsce od roku 1917, Warszawa

Karpinski, Z. (1971): O Wielkopolsce, zlocie i dalekich podrózach. Wspomnienia 1860-1960, Warszawa

Kaser, M.C., Radice, E.A. (1986): The Economic History of Eastern Europe, 1919-1975, 5 vols, Oxford

Kemmerer, E.W. (1926): Reports, submitted by the Commission of the American Fiancial experts headed by Dr Kemmerer, Warszawa

Keynes, J.M. (1923): A Tract on Monetary Reform, London

Kirk, D. (1946): Europe's Population in the Interwar Years, Genéve

Klarner, C. (1926): Drogi sanacji i gospodarczej, Warszawa

Klarner, C. (1929): Przemysl i handel w pierwszym dziesieciuleciu niepodleglosci Polski, Warszawa

Kleiss, H. (1925): Die Sanierung Polens und ihre Voraussetzungen, Bielitz

Kofman, J. (1986): Lewiatan a podstawowe zagadnienia ekonomiczno-spoleczne Drugiej Rzeczypospolitej, Warszawa

Konderski, W. (1927): Koniunktura swiatowa a nasza polityka gospodarcza, Kraków

Kostrowicka, I., Landau, Z., Tomaszewski, J. (1978): Historia gospodarcza Polski XIX i XX wieku, 3rd ed., Warszawa

Kolodko, G.W., Gotz-Kozierkiewicz, Skrzeszewska-Paczek (1992): Hyperinflation and Stabilization in Postsocialist Economies, Boston

Konderski, W. (1927): Konjunktura swiatowa a nasza polityka gospodarcza, Kraków

Korbonski, A. (1992): "Poland: 1918-1990", in Held, J. (ed.): The Columbia History of Eastern Europe in the Twentieth Century, New York, pp. 229-276

Kowalewski, K. (1920): "Umowy miedzypanstwowe o towary", in *Przemysl i Handel 4*, pp. 59-60

Kramsztyk, J. (1921): "Bilans weglowy za r. 1920", in *Przemysl i Handel 11*, p. 146

Królikowski, S. (1924): "Polityka celna w dobie naprawy Skarbu", in *Przemysl i Handel 7*, pp. 171-173

Kruszewski, S. (1931): Majatek panstwa polskiego, Warszawa

Krygier, Z. (1919): Monografja przemyslu cukierniczego w Polsce, Warszawa

Krzemicki, S. (1922): "Die wirtschaftlichen Verhältnisse Polens", in *Jahrbücher für Nationalökonomie und Statistik 7*, pp. 25-44

Krzyzanowski, A. (1919a): Gospodarka wojenna, Kraków

Krzyzanowski, A. (1919b): Drozyzna, Warszawa, Kraków

Krzyzanowski, A. (1924): "The currency reform in Poland", in *Ekonomica 12*, pp. 315-326

Krzyzanowski, A. (1925): Pauperyzacja Polski wspólczesnej, Kraków

Krzyzanowski, A. (1926): "Druga Inflacja polska", in *Ruch prawniczy, ekonomiczny i socjologiczny 4*, pp. CCXXXIII-CCXLI

Krzyzanowski, A. (1927): Dwa programy finansowe (jesien 1925 i wiosna 1926), Kraków

Krzyzanowski, A. (1931): Polityka i gospodarstwo, Kraków

Kuczewski, W. (1926): "Przyszlosc przemyslu metalowego w Polsce", in *Przemysl i Handel 2*, pp. 41-43

Kühn, A. (1928): "Stan, rozwój i potrzeby komunikacji w Polsce", in Przemysl i Handel (ed.): 1918-1928. Special Issue, Warszawa, pp. 19-21

Kulikowski, J. (1922): Wplyw inflacji na przemysl polski, in *Ekonomista 1*, pp. 69-78

Kumaniecki, K. (1924): Odbudowa panstwowosci polskiej. Najwazniejsze dokumenty 1912-styczen 1924, Warszawa

Kwiatkowski, E. (1928): "Fizyka gospodarczo-polityczna Polski", in Przemysl i Handel (ed.): 1918-1928. Special Issue, Warszawa, pp. 3-8

Landau, Z. (1957): "Pozyczka dillonowska, przyczynek do dzialalnosci kapitalow amerikanskich w Polsce", in *Kwartalnik Historiczny 3*, pp. 70-84

Landau, Z. (1961): Polskie zagraniczne pozyczki panstwowe, 1918-1926, Warszawa

Landau, Z. (1963): Plan stabilizacyjny 1927-1930. Geneza, zalozenia, wyniki, Warszawa

Landau, Z. (1983): "Inflation in Poland after World War I", in Schmuckler, N., Marcus,

E. (eds): Inflation through the Ages: Economic, Social, Psychological and Historical Aspects, New York, pp. 510-523

Landau, Z. (1985): "Inflacja w Polsce po pierwszej wojnie swiatowej", in *Studia Finansowe 32*, pp. 323-402

Landau, Z. (1992): "The economic integration of Poland 1918-23", in Latawski, P. (ed.): The Reconstruction of Poland, 1914-23, London, pp. 144-157

Landau, Z., Tomaszewski, J. (1964): Kapitaly obce w Polsce, Warszawa

Landau, Z., Tomaszewski, J. (1967): W dobie inflacji (=Gospodarka Polski miedzywojennej 1918-1939, vol. 1), Warszawa

Landau, Z., Tomaszewski, J. (1968): Anonimowi wladcy. Z dziejów kapitalu obcego w Polsce (1918-1939), Warszawa

Landau, Z., Tomaszewski, J. (1971): Od Grabskiego do Pilsudskiego. Okres kryzysu poinflacyjnego i ozywienia koniunktury 1924-1929 (=Gospodarka Polski miedzywojennej 1918-1939, vol. 2), Warszawa

Landau, Z., Tomaszewski, J. (1977): Druga Rzeczpospolita: gospodarka-spoleczenstwo-miejsce na swiecie, Warszawa

Landau, Z., Tomaszewski, J. (1984a): "Poland Between Inflation and Stabilization 1914-1927", in Feldmann, G.D., Holtfrerich, C.-L., Ritter, G.A., Witt, P.C. (eds): Die Erfahrung der Inflation im internationalen Zusammenhang und Vergleich, Berlin

Landau, Z., Tomaszewski, J. (1984b): Polska w Europie i swiecie 1918-1939, 2nd ed., Warszawa

Landau, Z., Tomaszewski, J. (1985): The Polish Economy in the Twentieth Century, London

Landau, Z., Tomaszewski, J. (1986): Zarys historii gospodarczej Polski. 1918-1939, 5th ed., Warszawa

Landau, Z., Tomaszewski, J. (1991): Gospodarka Drugiej Rzeczypospolitej, Warszawa

Lange, O. (1928): "Konjunktura w zyciu gospodarczym Polski 1923-1927", in Oberlender, L., Stein, K., Rittermann, S., Friediger, B., Zauberman, A., Lange, O. (eds.): Przewroty walutowe i gospodarcze po wielkiej wojnie, Kraków, pp. 347-437

Latawski, P. (1992): The Reconstruction of Poland, 1914-23, London

League of Nations (1925): Memorandum on Currency and Central Banks, 1913-1924, vol. 1, Genève

League of Nations (1927): Memorandum on Public Finance (1922-1926), Genève

League of Nations (1944): International Currency Experience. Lessons of the Inter-War Period, Genève

League of Nations (1946): The Course and Control of Inflation. A Review of monetary Experience in Europe after World War I, Genève

Lehnich, O. (1923): Währung und Wirtschaft in Polen, Litauen, Lettland und Estland, Berlin

Leslie, R. (1980): The History of Poland since 1863, Cambridge

Lipinski, E., Pszczólkowski, S., Landau, L., Wisniewski, J. (1928): Konjunktura

gospodarcza w Polsce 1924-1927, Warszawa
Ludkiewicz, Z. (1932): Podrecznik polityki agrarnej, 2 vols, Warszawa
Malinowski, W. (1933): Stabilizacja waluty w Polsce w latach 1924 i 1927 w swietle literatury, Kraków
Manteuffel, M. (1930): Bankowosc in Polsce, Warszawa
Markowski, B. (1931): Administracja skarbowa w Polsce, Warszawa
Matenko, W. (1939): Zagadnienie monopolów skarbowych w Polsce, Warszawa
Meyer, H. (1980): Standortverteilung der Produktion und regionale Wirtschaftsstrukturen in Polen vor 1945, Frankfurt/M.
Michalski, J. (1928): "Der Staatshaushalt und das Finanzsystem Polens", in Gerloff, W., Meisel, F. (eds): Handbuch der Finanzwissenschaft, Tübingen, vol. 3, pp. 236-246
Mieszczankowski, M. (1960): Struktura agrarna Polski miedzywojennej, Warszawa
Milward, A.S. (1984): The Reconstruction of Western Europe 1945-51, London
Mincer, T. (1928): Bilans handlowy a naplyw kapitalu zagranicznego do Polski, Warszawa
Ministerstwo Komunikacji (1929): Polskie Koleje Panstwowe 1918-1928, Warszawa
Ministerstwo Przemyslu i Handlu (1922): Panstwowa Gospodarka Weglowa w Polsce 1918-1921r, Warszawa
Mlynarski, F. (1921): Zasady reformy walutowej, Warszawa
Mlynarski, F. (1922): Na przelomie kwestii walutowej, Warszawa
Mlynarski, F. (1924): Walka o naprawe Skarbu, Warszawa
Mlynarski, F. (1925a): Kryzys i reforma walutowa, Lwów
Mlynarski, F. (1925b): The Genoa Resolution and the Currency Reform in Poland, Warszawa
Mlynarski, F. (1926): The International Significance of the Depreciation of the Zloty in 1925, Warszawa
Mlynarski, F. (1927): "Poland's stabilisation policy", in *The Banker 11*, pp. 497-521
Mlynarski, F. (1971): Wspomnienia, Warszawa
Moore, W.E. (1945): Economic Demography of Eastern and Southern Europe, Genéve
Morawski, W. (1991): Polityka stabilizacyjna ministra skarbu Jerzego Zdziechowskiego (listopad 1925-maj 1926), Warszawa
Moscicki, H. (1928): Dziesieciolecie odrodzenia Polskiej Sily Zbrojnej 1918-1928, Warszawa
Munting, R., Holderness, B.A. (1991): Crisis, Recovery and War. An Economic History of Continental Europe 1918-1945, New York
Najder, E.R. (1993): Une histoire de la monnaie polonaise, 1918-1992, Paris
Northedge, F.S. (1986): The League of Nations - its life and times - 1920-1946, New York
Nötel, R. (1986): "International Finance and Monetary Reforms", in Kaser, M.C., Radice, E.A. (eds): The Economic History of Eastern Europe, 1919-1975, Oxford, vol. 2, pp. 520-563

Oberlender, L., Stein, K., Rittermann, S., Friediger, B., Zauberman A., Lange, O. (1928): Przewroty walutowe i gospodarcze po wielkiej wojnie, Kraków
Olszewski, A. (1929): "Górnictwo w Polsce niepodleglej", in Zaleski, S. (ed.): Bilans gospodarczy dziesieciolecia Polski odrodzonej, Poznan, vol. 1, pp. 321-344
Osborne, S. (1921): Die oberschlesische Frage und das deutsche Kohlenproblem, Berlin
Osiatynski, J. (1991): Collected Works of Michal Kalecki, 2 vols, Oxford
Osiecki, S. (1925): "Kryzys gospodarstwa narodowego i sposoby naprawy sytuacji", in *Przemysl i Handel 50*, pp. 1617-1619
Pack, H. (1994): "Endogenous Growth Theory: Intellectual Appeal and Empirical Shortcomings", in *Journal of Economic Perspectives 1*, pp. 55-72
Phillips, C. (1923): The new Poland, London
Piekalkiewicz, J. (1925): "Bilans platniczy za 1923 rok", in *Kwartalnik Statystyczny 2*, pp. 322-323
Pietkiewicz, Z. (1925): "Przemysl cementowy", in *Przemysl i Handel 14/15*, pp. 427-429
Pietrzak, M. (1969): Rzady parlamentarne w Polsce w l. 1919-1926, Warszawa
Pobóg-Malinowski, W. (1956): Najnowsza historia Polski 1864-1945, 3 vols., London
Polonsky, A. (1972): Politics in Independent Poland, 1921-1939. The Crisis of Constitutional Government, Oxford
Prochnik, A. (1957): Pierwsze pietnastolecie Polski niepodleglej, Warzawa
Przemysl i Handel (1928): 1918-1928. Tom specjalny, Warszawa
Przemysl i Handel (1929): Zniszczenia wojenne i odbudcwa Polski, Warszawa
Przybylski, A. (1928): "Wojna Polski odrodzonej 1918-1921r.", in Moscicki, H. (ed.): Dziesieciolecie odrodzenia Polskiej Sily Zbrojnej 1918-1928, Warszawa, pp. 171-200
Pszczólkowski, S. (1926): Stabilizacja kursu zlotego, Warszawa
Pszczólkowski, S. (1927): Bilans platniczy Polski w latach 1923-1926, Warszawa
Puchert, B. (1963): Der Wirtschaftskrieg des deutschen Imperialismus gegen Polen 1925-1934, Berlin
Rataj, M. (1965): Pamietniki 1918-1927, Warszawa
Rhode, G. (1966): Geschichte Polens, 2nd ed., Darmstadt
Robbins, L. (1937): Wielkie przesilenie gospodarcze, Kraków
Romer, P.M. (1994): "The Origins of Endogenous Growth", in *Journal of Economic Perspectives 1*, pp. 3-22
Roos, H. (1986): Geschichte der polnischen Nation 1918-1985, 4th ed., Stuttgart
Rose, E. (1920): "Program gospodarczy rzadu", in *Przeglad Gospodarczy 16*, pp. 3-6
Rose, E. (1922): Bilans gospodarczy trzech lat niepodleglosci, Warszawa
Rose, E. (1923): "O 'teoreticzna' walute", in *Przeglad Gospodarczy 2*, pp. 33-36
Rose, E. (1924a): "Program p. Grabskiego", in *Przeglad Gospodarczy 2*, pp. 40-42
Rose, E. (1924b): La reconstruction financière de la Pologne. Restauration du tresor public et nouveau régime monétaire, Warszawa
Rostowski, J. (1992): "Secondary Currencies in the Russian Hyperinflation", London School of Economics, Centre for Economic Performance, Discussion Paper No. 59

Roszkowski, W. (1982): Ksialtowanie sie podstaw polskiej gospodarki panstwowej w przemysle i bankowosci w latach 1918-1924, Warszawa

Roszkowski, W. (1992): "The reconstruction of the government and state apparatus in the Second Polish Republic", in Latawski, P. (ed.): The Reconstruction of Poland, 1914-23, London, pp. 158-177

Rothschild, J. (1966): Pilsudski's Coup d'État, New York

Rybarski, R. (1922): Marka Polska i Zloty Polski, Warszawa

Rybarski, R. (1924): Ciezar Podatków w Polsce, Warszawa

Sakowicz, J. (1926): "Obecny stan cukrownictwa polskiego", in *Przemysl i Handel 20*, pp. 683-684

Sala i Martin, X. (1994a): "Lecture Notes on Economic Growth (I): Introduction to the Literature and Neoclassical Models", Universitat Pompeu Fabra, Economic Working Papers 77

Sala i Martin, X. (1994b): "Lecture Notes on Economic Growth (II): Five Prototype Models of Endogenous Growth", Universitat Pompeu Fabra, Economic Working Papers 78

Sargent, T.J. (1982): "The Ends of Four Big Inflations", in Hall, R.E. (ed.): Inflation: Causes and Effects, Chicago, pp. 41-98

Sargent, T.J. (1984): "Die Beendigung vier großer Inflationen", in Feldmann, G.D., Holtfrerich, C.-L., Ritter, G.A., Witt, P.C. (eds): Die Erfahrung der Inflation im internationalen Zusammenhang und Vergleich, Berlin

Sargent, T.J. (1986): Rational Expectations and Inflation, New York

Schacht, H. (1927): The Stabilization of the Mark, London

Schmuckler, N., Marcus, E. (1983): Inflation through the Ages: Economic, Social, Psychological and Historical Aspects, New York

Schön, J. (1927): Das polnische Bankwesen, Basel

Siebeneichen, A. (1920): Reglamentacja handlu w Polsce, Warszawa

Siklos, P. (1991): War Finance, Reconstruction, Hyperinflation and Stabilization in Hungary, 1938-48, Oxford

Skonieczny, S. (1927): "Banking in Poland", in *The Banker 11*, pp. 486-496

Södersten, B. (1980): International Economics, 2nd ed., London

Spulber, N. (1966): The State and Economic Development in Eastern Europe, New York

Stanislawski, L. (1923): "Kryzys w przemysl papierniczym", in *Przemysl i Handel 23*, p. 306

Stanislawski, L. (1925): "Rozkwit krajowej produkcji papieru", in *Przemysl i Handel 13*, pp. 381-382

Stanislawski, L. (1926): "Produkcja papieru w r. 1925", in *Przemysl i Handel 5*, pp. 135-136

Starzynski, S. (1927): Polish economic conditions in 1926, Warszawa

Starzynski, S. (1928): The financial situation of Poland in 1927, Warszawa

Studnicki, W. (1930): Die wirtschaftliche und kulturelle Entwicklung des wieder-

auferstandenen Polens, Berlin
Sygietynski, R. (1922): "Próbny bilans handlowy za rok 1921", in *Przemysl i Handel 20/21*, p. 328
Szeps, S. (1926): Die Währungs- und Notenbankpolitik der Republik Polen, Basel
Szlajfer, H. (1990): Economic Nationalism in East-Central Europe and South America 1918-1939, Genève
Szturm de Sztrem, H. (1923a): Dzialanie Inflacji w sferze podatkowej, Warszawa
Szturm de Sztrem, H. (1923b): Place zarobkowe w okresie dewaluacji pienieznej, Warszawa
Szturm de Sztrem, H. (1924): Zywiolosc w opodatkowaniu: Podatek inflacyjny, Warszawa
Szulc, S. (1936): "Ruch naturalny ludnosci w latach 1895-1935", in *Statystyka Polski C/41*, p. 15
Taube, G. (1922): Hyperinflacja i równowaga budzetowa, in *Ekonomista 2*, pp. 50-65
Taylor, E. (1925): "Ciezar inflacji w Polsce", in *Ruch prawniczy, ekonomiczny i socjologiczny 1*
Taylor, E. (1926): Inflacja Polska, Poznan
Taylor, E. (1927a): Druga Inflacja polska, Poznan
Taylor, E. (1927b): "Przyczyny spadku zlotego", in *Ruch prawniczy, ekonomiczny i socjologiczny 1*, pp. 59*-72*
Taylor, E. (1928): Finanzpolitik und Steuersystem der Republik Polen, Jena
Taylor, E. (1929a): "Waluta", in Zaleski, S. (ed.): Bilans gospodarczy dziesieciolecia Polski odrodzonej, Poznan, vol. 2, pp. 233-250
Taylor, E. (1929b): "Skarbowosc", in Zaleski, S. (ed.): Bilans gospodarczy dziesieciolecia Polski odrodzonej, Poznan, vol. 2, pp. 263-294
Taylor, J. (1952): The Economic Development of Poland 1919-1950, New York
Teichova, A., Cottrell, P.L. (1983): International Business and Central Europe 1918-1939, New York
Teichova, A. (1983): "A comparative view of the inflation of the 1920s in Austria and Czechoslovakia", in Schmuckler, N., Marcus, E. (eds): Inflation through the Ages: Economic, Social, Psychological and Historical Aspects, New York, pp. 531-567
Tennenbaum, H. (1916): Bilans handlowy Krolestwa Polskiego, Warszawa
Tennenbaum, H. (1924): Skarb Rzeczypospolitej, Warszawa
Tomaszewski, J. (1961): Stabilizacja waluty w Polsce. Z badan nad polytyka gospodarcza rzadu polskiego przed przewrotem majowym, Warszawa
Tomaszewski, J. (1965): "Handel reglamentowany w Polsce 1918-1921", in *Zeszyty Naukowe SGPS 56*, pp. 6-39
Towarzystwo Ekonomiczne (1931): Dziesieciolecie T.E. 1921-1931, Kraków
Triebe, I.G. (1929): Zehn Jahre polnische Währung (1928-1928), Berlin
Turnock, D. (1989): Eastern Europe. An Historical Geography 1815-1945, London
Walre de Bordes, J. v. (1924): The Austrian Crown, London

Webb, S. (1989): Hyperinflation and Stabilization, New York
Weinfeld, I., Szturm de Sztrem, E., Piekalkiewicz, J. (1924): Atlas statystyczny Polski, 2 vols, Bydgosc
Weinfeld, I. (1925): Tablice statystyczne Polski wydane za rok 1924, Warszawa
Weinfeld, I. (1927): Tablice statystyczne Polski wydane za rok 1925 i 1926, Warszawa
Wellish, L. (1938): Foreign Capital in Poland, London
Wierzbicki, A. (1923): "Polityka przemyslu w Polsce", in *Przeglad Gospodarczy 24*, pp. 873-883
Wierzbicki, A. (1924): "Na marginesie programu naprawy Skarbu", in *Przemysl i Handel 6*, pp. 134-139
Wierzbicki, A. (1928): "Ogólny poglad na rozwój przemyslu polskiego", in Zaleski, S. (ed.): Bilans gospodarczy dziesieciolecia Polski odrodzonej, Poznan, vol. 1, pp. 297-319
Wierzbicki, A. (1957): Wspomnienia i dokumenty 1877-1920, Warszawa
Witos, W. (1981): Moje Wspomnienia, Olsztyn
Woll, A. (1976): Allgemeine Volkswirtschaftslehre, 5th ed., München
Young, E.H. (1924): Report on Financial Conditions in Poland, London
Young, J.P. (1925): European Currency and Finance, 2 vols, Washington
Zabinski, Z. (1981): Systemy pieniedzne na ziemiach polskich, Wroclaw
Zadrowski, L. (1922): "Bilety Skarbowe", in *Przemysl i Handel 3*, pp. 34-35
Zajda, J. (1986): Kierunki polityki walutowej Polski w okresie miedzywojennym, Warszawa
Zaleski, S. (1929): Bilans gospodarczy dziesieciolecia Polski odrodzonej, 2 vols, Warszawa
Zarnowski, J. (1964): Struktura spoleczna inteligencji w Polsce w latach 1918-1939, Warszawa
Zarnowski, J. (1992): Polska 1918-1939. Praca-Technika-Spoleczenstwo, Warszawa
Zawadzki, W. (1929): "Wytwórczosc", in Dabrowski, M. (ed.): Dziesieciolecie Polski odrodzonej. Ksiega pamietkowa 1918-1928, Kraków, pp. 885-887
Zbijewski, V.J. (1928): La Stabilisation Monétaire en Pologne, Paris
Zdziechowski, J. (1925a): The Finances of Poland 1924-1925, London
Zdziechowski, J. (1925b): Poland's Financial Restoration, Bruxelles
Zdziechowski, J. (1926a): Sytuacja gospodarczo-skarbowa Polski i drogi naprawy, Warszawa
Zdziechowski, J. (1926b): O pieniadzu i budziecie, Warszawa
Zdziechowski, J. (1955): Skarb i Pieniadz 1919-1939, London
Ziercke, M. (1970): Die redistributiven Wirkungen von Inflationen, Göttingen
Zweig, F. (1923): Zloty Polski, Kraków
Zweig, F. (1944): Poland Between Two Wars, London