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**Scylla and Charybdis.  
The European Economy and Poland's  
Adherence to Gold, 1928-1936**

**Nikolaus Wolf**

## **Abstract**

This paper examines the timing of exit from the gold-exchange standard for European countries based on a panel of monthly observations 1928-1936 for two purposes: first it aims to understand the enormous variation in monetary policy choices across Europe. I show that the pattern of exit from gold can be understood in terms of variation in factors commonly suggested in the theoretical literature, which makes it possible to predict with reasonable accuracy the very month when a country will exit gold in the 1930s. Second, I analyse the case of Poland more closely because it appears to be an intriguing outlier. Poland did not leave gold until April 1936 and suffered through one of the worst examples of a depression, with massive deflation and a complete collapse of industrial production. The estimated model fares worst for Poland, and predicts an exit even later than April 1936. By closer inspection, the factors that drive this prediction are the non-democratic character of the regime and a surprisingly high degree of trade integration with France. I argue that Poland's monetary policy was determined by attempts of the Pilsudski regime to defend Poland against foreign (esp. German) aggression. I provide evidence that strongly supports this view until about mid-1933. Ironically, just when Poland had joined the gold-bloc there were signs of a broad strategic reorientation, which paved the way for an exit in 1936.

Keywords: Gold-Exchange Standard, Interwar Period, Europe, Poland

JEL Classifications: E42, E44, N14

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Nikolaus Wolf is a Research Affiliate of the Centre for Economic Performance, London School of Economics. He is also a Senior Research Fellow at the Centre for the Study of Globalisation and Regionalisation, The University of Warwick.

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## I. Introduction

This paper takes up Barry Eichengreen's question of "why were some more inclined than others to release their gold fetters?" (Eichengreen 1992, p. 23), for two related purposes: first, it provides a comparative analysis of the exit decisions of several European countries, linking it up with other recent work (H. Wolf and Yousef 2005, Wandschneider 2005). The paper is the first to use a panel of *monthly* observations for several European economies 1928-36, which allows exploring the time structure of exit decisions in much more detail. I test several hypotheses and show that deflation, changes in gold and foreign exchange, a few institutional variables and pre-existing patterns of trade integration explain the observed variations in exit decisions in the 1930s rather well. Moreover, based on this background, the paper explores the case of Poland in more detail. Poland joined the gold bloc in 1933 and did not leave the gold exchange standard until April 1936, suffering through one of the worst and longest depressions of all European countries.

The Polish historiography so far considers the late exit from the gold standard as a "big misunderstanding" (Knakiewicz 1967, p. 336), mainly due to policymakers misled by the classical orthodox school who tried to cure the economy by deflation (Landau and Tomaszewski 1999, p. 235). The background to this is traditionally seen in a widespread fear among policymakers of yet another inflation which would destabilize the country and scare off badly needed foreign capital (Studentowicz 1935) and a perceived necessity to adjust industrial prices downwards to prices in agriculture to foster domestic demand for industrial products (Matuszewski 1937). This paper puts these arguments in a comparative European perspective and argues that from this perspective Poland apparently fits roughly into the general picture of exit decision as a function of a set of commonly used economic and institutional factors. However, by closer inspection, such a model fits Poland worse than other countries and the factors which help to explain the extremely late exit decision of Poland are rather specific: a surprisingly high degree of trade integration with France and the authoritarian character of the Piłsudski regime. This opens up more new questions than it can answer.

To shed some light into the black boxes of "authoritarian rule" and "integration with France" I argue that the Piłsudski regime that ruled Poland since

May 1926 was mainly concerned with strategies to defend the independence and territorial integrity of the new Polish state against foreign (esp. German) aggression. The perceived risk that leaving the gold standard can produce monetary instability was in part due to the Polish experience of hyperinflation until 1923 followed by a second inflation in 1925-26. But contrary to other countries that experienced a hyperinflation in the 1920s, the Polish government was afraid of an additional cost of leaving gold: losing access to „friendly” capital in terms of the political system of Versailles. It is obvious that for her long-run development Poland desperately needed to accumulate capital, through savings and capital imports. But the Polish government made much effort to be selective with regard to capital imports, increasingly so after the open conflict with Germany about renegotiating trade conditions since 1925. It continued these efforts during the great depression. Crucially, the exit of Germany and Austria from gold in 1931 and the non-exit of France, Belgium, and the Netherlands created an incentive for the Piłsudski government to stay on gold as well. French armament credits complete this picture, both existing ones and others under negotiation well into 1936. Bold rhetoric of monetary orthodoxy and several external factors including some signs of economic recovery in late 1932 helped the Polish government to defend this position, which culminated in Poland joining the “gold bloc” in July 1933. But ironically, just from 1933 onwards the pendulum slowly started to swing back. Increasing tensions with France, a temporal improvement in Polish-German relations, and worsening economic conditions reopened the discussion about monetary policy. The Central Bank started to engineer a slow increase in M1 from 1934 onwards, but most importantly, there was a growing pressure from military circles to speed up the modernization of the Polish army, even without French support. In October 1935 E. Kwiatkowski, just appointed minister of finance, started to realize his old plans of big push industrialization merged with military plans to set-up a Polish armament industry. After the Rhine crisis of March 1936 had proved French unwillingness to fight for the political system of Versailles, and the defenders of the Franc Poincaré had started to retreat, Poland prepared the exit decision. In April 9<sup>th</sup>, 1936 a 1 billion Złoty National Defence Fund was set up to finance the modernization of Poland’s army, before Poland introduced exchange controls in April 26<sup>nd</sup>, 1936 and thereby finally left the gold standard.

The structure of the paper is as follows. Section II starts with a short discussion of five sets of hypotheses, commonly mentioned in the literature to

understand the decisions of countries to exit the gold standard. Section III motivates my empirical strategy, with a short discussion of binary choice and duration models, and some pitfalls in using them. In section IV the data is presented to test the relevance of the five hypotheses for several European economies, while section V contains the main empirical results from the comparative analysis. Based on this background, section VI argues for a specific political economy story of the Polish case. Section VII concludes.

## II. Five sets of Hypotheses

Possible explanations for the observed variation in exit decisions are in abundance and tend to be rather complex. In short, the literature provides five sets of hypotheses for the considerable variation in European countries' exit decisions (see also the survey in H. Wolf and Yousef 2005).

First, countries experiencing bad macroeconomic shocks (either from within or from outside) tended to deteriorate their economic situation when pursuing monetary orthodoxy, with the result of sharp price deflation, rising real wages, real interest rates, growing unemployment and a slump in industrial production (Newell and Symons 1988, Bernanke and James 1991). An early exit might have allowed them to follow expansionary monetary policies and thereby help the economy to recover (Eichengreen and Sachs 1985).

Second, the promise of recovery from releasing the golden fetters had to be weighted against a possible loss in credibility as argued in Bordo, Edelstein and Rockoff (1999). Especially for peripheral countries – or, for this matter, new states, without a track record of monetary policy - the interwar gold standard continued to serve as a “good housekeeping” seal of approval. These results have been fundamentally questioned by Taylor and Obstfeld (2003) and may well be time-dependent: the more core-countries left the gold standard during the Great Depression, the weaker the credibility signal of adherence may have become (H. Wolf and Yousef 2005). Actually, as argued in Drazen and Masson (1994), policymakers may have hurt rather than enhanced their credibility through policies that appear “tough” but not sustainable in the long-run.

Third, policymakers and their electorates may differ in their adhesion to monetary orthodoxy (their “mentality”) because of their own recent experience. In countries which suffered a hyperinflation or a significant depreciation of their currencies relative to the pre-war parities, one can expect a wide reluctance to adopt expansionary monetary policies (Eichengreen 1992). In the Polish context, this is the most widespread explanation to understand Poland’s belated exit (esp. Knakiewicz 1967). Moreover, this should be related to issues like central bank independence, insofar as the perceived risk of expansionary monetary policies to produce hyperinflation may be smaller the less directly a government can affect monetary policy (Kydland and Prescott 1977).

Fourth, economic integration between country pairs differed widely during the interwar years. For example countries which traded intensively with the UK might have had stronger incentives to follow Britain off gold in 1931 than others, while integration with France may have had the opposite effect. In general, the exit decision of major trading partners could force a country to leave as well. The pattern of currency bloc formation after 1931 broadly supports this view (Ritschl and N. Wolf 2003), which challenges a recent literature on the trade creating effects of currency blocs (Rose 2000).

Fifth, the political system prevailing in a country can affect a country’s choice of monetary policy or several reasons. The extension of the franchise (James 2001) and political instability (Eichengreen and Simmons 1995) might have weakened the ability of governments to commit to the rules of the gold standard. Authoritarian regimes in turn might have had tools at hand to defend the gold standard and successfully suppress any political quest for expansionary full employment policies. This ability to defend the gold standard may have also increased with the weight of agriculture in the economy, insofar as political parties demanding expansionary monetary policies tended to have their electorate in industrial centres.

In the following, I will estimate the empirical relevance of these five sets of factors first separately and then simultaneously, both to explore what drives the general pattern of exit decisions in European countries and to see how Poland fits into that general pattern.

### III. Empirical Strategy

A simple and straightforward way to test the empirical relevance of each of these hypotheses is to estimate the probability to exit the interwar gold exchange system as a function of cross-sectional and time series variation in a large set of explanatory variables. In this paper I use monthly data to track the time-path of potential explanatory variables as closely as possible. I follow Klein and Marion (1997) who propose to estimate a logit model where the dependent variable equals zero in any month when the country adheres to the gold standard and equals one in the month that the spell ends. To determine the probability of exit in month  $t+1$  I use variables from month  $t$ . After the spell has ended, the country drops out of the sample. In this framework, the probability of staying on gold until month  $t+1$  ( $D_{t+1}=0$ ) and the probability of exit in month  $t+1$  ( $D_{t+1}=1$ ) depend on the vector of variables  $X_t$  as follows:

$$\text{Prob}(D_{t+1} = 0 | X_t) = \frac{1}{1 + \exp(\gamma_0 + \gamma_1 X_t)},$$
$$\text{Prob}(D_{t+1} = 1 | X_t) = \frac{\exp(\gamma_0 + \gamma_1 X_t)}{1 + \exp(\gamma_0 + \gamma_1 X_t)},$$

which can be written in terms of the logarithm of the odds ratio as:

$$\ln\left(\frac{\text{Prob}(D_{t+1} = 1)}{\text{Prob}(D_{t+1} = 0)}\right) | X_t = \gamma_0 + \gamma_1 X_t.$$

The elements of the  $\gamma_1$  vector represent the partial elasticities of the likelihood to exit the gold standard with respect to the vector of variables  $X_t$ .

An obvious alternative approach would be to estimate a (single spell) duration model as proposed by Wandschneider (2005) and H. Wolf and Yousef (2005). The explanatory variables in these papers are in part constant over time, and in part time-varying on an annual basis, due mainly to limited data availability. That is, these models operate necessarily in time-inhomogeneous environments. There are two key problems with their approach. First, it is difficult to see how annual data can possibly

explain the changing propensity of countries to stay or exit the gold standard during the interwar years. Hypotheses 1, 2, and 4 all suggest that the probability to stay on gold should have been considerably higher during the first half of 1931 than during the second half of that same year, due to the events occurring in Germany and due to Great Britain's decision to exit the gold standard in September 1931. For example, Wandschneider (2005) rejects in her analysis the hypothesis of Bernanke and James (1991) that deflation contributed to regime exit, probably because many countries inflated immediately after they left the regime. Hence, an empirical analysis based on annual averages of explanatory variables will probably miss some part of the story.

Second, it is questionable whether duration analysis provides an optimal approach to analyse the timing of exit decisions. Duration models are based on the idea of duration dependence, i.e. that the probability to transit from one state into another at time  $t$  depends not only on a set of independent regressors at that time but is itself also a function of time. While this idea is interesting, it (so far) lacks an explicit economic foundation and is at least not directly implied by the above mentioned hypotheses. What is more it implies serious econometric difficulties. As argued in Heckman and Singer (1984, pp. 77-83), single spell duration models in time-inhomogeneous environments (as in the current context) face identification problems, because it is difficult to separate duration dependence per se from the effects of time varying variables (Heckman and Singer 1984, p. 82). One might expect identification problems especially for variables with a linear time trend over the sample period.

Nevertheless, I will also estimate a simple single spell duration model, based on the monthly data set, where I include the amount of time a country has stayed on the gold standard. I do this as a robustness check and because it allows the estimation of survival functions for a convenient visualisation of results. The next section describes the variables used to capture the basic ideas of the five main hypotheses.

#### IV. A monthly Data Panel for Eight European Countries

I will test the mentioned hypotheses for eight European countries over the period January 1928 through December 1936, namely for the five largest countries in central Europe (Austria, Czechoslovakia, Germany, Hungary, and Poland) and their



neighbours France, Italy and Sweden. The list of countries included is mainly determined by the availability of a complete data panel for key variables and will be extended in future research, but it comprises the whole range of monetary policy choices as observed during the interwar years.

To capture the simple idea that the probability to exit should depend on how badly the economy was hit by the great depression I collected monthly data on wholesale prices (*whole*), industrial production (*ind*), and rates of unemployment (*unrate*), see Figures 1-3.

The data on wholesale prices and industrial production are indexed to 1928=100. Note that the use of index data eliminates the cross-sectional variation in levels of industrial production and prices, due to data limitations. The data on rates of unemployment refer to the number of registered unemployed over the total economically active population to ensure comparability between countries, adjusted for seasonal fluctuations by the X12 seasonal adjustment method. The hypothesis to be tested is that, *ceteris paribus*, countries experiencing more severe price deflation, a steeper decline in industrial production, and a higher number in registered unemployed per active population in month *t* face more pressure to release their gold fetters than others in month *t+1*.

Next, the idea that countries adhered to the gold standard to gain in credibility is explored by using the value of foreign exchanges (*exchange*) and gold reserves (*gold*) in month *t*. The commitment to stay on gold in month *t+1* is the more credible, the higher a country's reserves in gold and foreign exchange in month *t*, see Figures 4-5.

Moreover, I add an indicator variable *ukus\_offgold* to capture the effect of the UK and the USA leaving the gold standard on the sample countries (the variable equals 0 as long as both are still on gold, 1 after the UK left gold, and 2 when both are off gold). A significant coefficient with a positive sign would indicate that the exit of these core countries out of the gold exchange system increased the probability of other countries to follow off gold.

Third, the effect of historical experience on the “mentality” of policymakers and their electorates is captured first by the parity at which a country resume the gold standard in the 1920s as a percentage of its pre-war parity (*devalhist*), varying from values close to 0 to 100. To explore the idea that markets may have considered the risk of producing hyperinflation to be lower under institutions that assure central bank independence, I use a measure of central bank independence (*indep*) from Simmons (1994) that varies from 4 (non-existent government input) to 1 (chief executives and board of bank appointed by the government).

The political regime is captured by a simple 0,1 dummy (*democracy*), that equals 1 if the country is a parliamentary democracy and 0 otherwise. While this changes in the cases of Austria and Germany from 0 to 1 in 1933, the variable is constant over the sample time because both countries left the gold standard already in 1931. Finally, I analyse the idea that trade integration might have affected a country’s decision to either join the Sterling-Bloc or the Reichsmark-Bloc and hence leave the gold standard or to join the Gold-Bloc and hence stay on Gold as discussed in Ritschl and N. Wolf (2003). To this end I use their estimates of bilateral trade integration with the potential anchor countries Great Britain, Germany, and France, based on a gravity model of bilateral trade flows for 1928 (*int28\_f*, *int28\_g*, *int28\_uk*). This measure captures the idea of integration in the sense of (positive or negative) deviation from “normalized” bilateral trade flows after controlling for geographical proximity and the sizes of trading partners, hence a country can well be better integrated with its second largest trading partner than with its largest trading partner. To account for other trade-network effects, I also include a dummy variable *tradegold*, which equals 1 as long as the country’s major trading partner is on the gold standard and 0 else.

## V. Results, Interpretation, and new questions

I will first evaluate the five hypotheses separately, to assess to what extent they can help our understanding of exit decisions in principle. Then however, I put them all simultaneously into a “horse race” to explore which factors dominated others. All equations are estimated with Logit with a dependent variable *depvar* that equals 0 in any month the country adheres to the gold standard and equals 1 in the month that the spell ends. Exit is defined as either the imposition of exchange controls

or devaluation. The explanatory variables are always introduced with a one-month time lag.

Table 1a estimates the relevance of economic depression for the exit decision. All coefficients have the expected signs. Both, the index of wholesale prices (1928=100) and the rate of unemployment in month  $t$  are statistically significant at the 10% level, while the index of industrial production is not. An obvious alternative specification is to consider information of previous months as well, which I do using 3-months moving averages of the variables in  $t$  to estimate the probability to leave gold in  $t+1$ . The coefficients change only slightly but the fit of the estimation - as indicated by a Hosmer-Lemeshow test statistic - increases from 18% to 50% (Table 1b). The fact that the index of industrial production is not significant is probably related to collinearity with the price index because deflation increased real production costs via real factor costs as shown in Newell and Symons (1988).<sup>3</sup> The impact of deflation on unemployment is also present but probably attenuated by other factors (structure of the labour market, unemployment benefits, public work programmes, etc.).

Table 2a presents estimates of the effects of changing reserves in foreign exchange and gold on the probability to leave gold, controlling for possible effects of the two core countries UK and USA leaving gold in 1931 and 1933 respectively. The coefficient on exchange is highly significant with the expected negative sign, while the other two coefficients are not. The higher a country's foreign exchange reserves, the lower the probability to leave the gold standard. The insignificant coefficient on gold may well be explained by the fact that many countries which experienced pressure on their currency to devalue tried to bolster their gold reserves by selling foreign exchange (Bernanke 2000). Again, the coefficients do not change much if we replace the levels by 3-month moving averages, but the fit of the model improves slightly as indicated by Hosmer-Lemeshow statistics (Table 2b).

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<sup>3</sup> If I regress *ind* on a constant and *whole*, I get a highly significant positive coefficient. The same is true for a regression based on 3-month moving averages.

Table 3 combines a test of hypotheses 3 and 4, where I estimate the relevance of democratic rule, the experience of hyperinflation, and central bank independence. While the signs of the estimated coefficients are in line with expectations (democracies tend to leave earlier, less devaluation in the 1920s due to less inflation implies a smaller perceived risk of leaving the gold standard, independent central banks tend to defend monetary orthodoxy and stay on gold), none is significant. However, given that these variables are virtually constant over time, it is not surprising that they do not help much to explain the timing of exit decisions. Nevertheless, in interaction with other factors they might explain why some countries postponed exit longer than others.

Table 4 then explores the impact of trade networks on exit decisions. All coefficients have the expected signs, that is to say, high trade integration with Great Britain and Germany tends to increase the probability to leave the gold standard, while trade integration with France lowers that probability, and significantly so. In addition to that effect from integration patterns, countries tended to follow their main trading partner off gold, sometimes with conflicting effects. Consider the case of Poland. On one hand side gravity estimates of Ritschl and N. Wolf (2003) show that bilateral trade flows between Poland and France in 1928 were higher than predicted from an Anderson/van Wincoop-type gravity model, while trade with Germany in 1928 was slightly lower. On the other hand, it was Germany by a large margin - not France - that was Poland's main trading partner well into the 1930s, but less so over time. As will be shown below, Poland tried to reorient her trade flows away from Germany as part of a general effort to decrease her economic dependency from Germany, especially from 1926 onwards (N. Wolf 2007). The gravity-based measure of trade integration apparently captures these Polish efforts to reorient economic ties.

Table 5.1 proceeds with estimations that explore all hypotheses simultaneously. The overall fit improves considerably. Again, deflation significantly

increases the probability to leave gold, as do lower reserves in foreign exchange and gold, while the rate of unemployment has no significant additional effect. Interestingly, countries that had experienced high inflation in the 1920s (*devalhist* low) apparently tend to have a higher probability to leave gold, which is in line with the historical experience of Austria, Germany, and Hungary, but not easy to fit with theoretical predictions. On the other hand, the positive and significant coefficient on *indep* indicates that more independent central banks might indeed have earlier left gold as their commitment to pursue low inflation policies even without the fetters of gold may have been stronger. The estimation also reproduces the finding that democracies were quicker to leave gold, as has been stressed elsewhere in the literature (Wandschneider 2005). To avoid collinearity problems I only include the indicator of trade integration with France and the 0,1 dummy *tradegold* to capture the effect of the main trading partner leaving gold. Inclusion of the latter is also the reason to drop the effect of the UK and the USA leaving gold, again to avoid possible problems of collinearity. Here, integration with France significantly lowers the probability to leave gold, while there is no significant effect of the main trading partner leaving gold.

Table 5.2 shows a slight variation of the specification, where I interact the effect of a high inflation history with the indicator of central bank independence. This alters and improves the results somewhat. Countries that experienced only limited inflation in the 1920s and had a largely independent central bank had a higher probability to leave the gold standard in the 1930s. They also tended to follow their main trading partners, given the other controls and especially given their trade integration with France.

How helpful are these results to understand “why were some more inclined than others to release their gold fetters?” Do these general findings give plausible stories for specific countries? Table 6 shows an expectation-prediction table for the last

estimated model (5.2) showing that it correctly predicts the month when a country left gold in roughly half of the eight cases under consideration.

The key question remains: how much does the model's predicted time of exit differ from the actual exit time? Table 7 compares the actual dates of exit to the predicted time of exit.<sup>4</sup> The model fits the data rather well, except that Hungary's exit is predicted to be later, and except that the estimated probability to exit for France reaches a maximum in October 1936 at just 25% and for Poland in May 1935 at only 14%.

To explore the factors in the model that drive this prediction in the case of Poland in more detail, I re-estimate the exit probability for Poland dropping several candidate explanatory variables. Without taking the high trade integration with France into account, the model would predict an exit in December 1934, after Italy. Instead, if we drop the democracy dummy, the model predicts that Poland would leave gold in September 1931, shortly after her largest trading partner Germany.<sup>5</sup> If both effects are dropped, the model would predict an exit with Germany in July 1931.

A duration analysis delivers very similar results, the only difference being that the effect of neither the index of wholesale prices, nor the index of industrial production, nor the rate of unemployment is ever estimated to be significant. However, a duration model would predict an exit of France in July 1936 and Poland in March 1936. Moreover it allows visualising these predictions as changing survival probabilities over time. Figures 6-10 show the various predictions for France and Poland from a duration model based on the eight sample countries 1928-1936.

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<sup>4</sup> To this end I re-estimated model 5.2 excluding the non-significant variables, in order to have a prediction that is only based on significant coefficients. This has only very minor effects on the estimated coefficients, but helps to interpret the prediction results.

<sup>5</sup> For this purpose, I re-estimated the model replacing the democracy dummy (which is 0 in the case of Poland over the sample period) by its inverse, an "autocracy" dummy. This obviously alters only the constant and the sign of the dummy, but nothing else. Especially the predicted exit time for Poland remains unchanged at May 1935. When the prediction is done with setting this dummy =0, the model predicts an exit in July 1931.

## VI. Scylla and Charybdis - Why Poland did not exit, 1928-1936

The notion of high trade integration with France in 1928 - with Germany still being Poland's largest trading partner - and the empirical effect of the democracy dummy hardly provide a satisfying explanation for Poland's belated exit decision. However, they give a hint that an answer will have to take political factors into account, and that Poland's relations with France played a specific role. In the following I attempt to outline such an explanation.

The return of Poland on the European map after the First World War was possible due to the specific constellation that all three former partition powers were severely weakened through war and revolution (see N. Wolf 2005). The borders of the new Polish state were not established before mid-1921, after several uprisings in Upper Silesia and Great Poland, some heavily disputed referenda, and a very costly Polish victory over the Red Army, financed by French and US capital and excessive inflation taxation (Krzyżanowski 1976, pp. 13ff). From then onwards, the most direct threat to Poland's territorial integrity was seen in German attempts to revise the Polish-German border, i.e. both the division of Upper Silesia and the Polish Corridor, dividing the German East Prussia from Germany proper. None of the German governments during the Weimar Republic - whether left-wing, centre or right-wing - was ever willing to accept the German-Polish border (Schulze 1982).

In this situation, Poland regarded France as her natural strategic partner, and initially, the French were eager to play that role. After 1918 France tried to strengthen Poland and Czechoslovakia as an "eastern barrier designed to keep Berlin in check and preserve the status quo" (Wandycz 1988, p. 3). French military missions were present in both Poland and Czechoslovakia after 1918 to provide schooling and technical advice for their armies (Ciałowicz 1970). But in stark difference to Czechoslovakia, which inherited most of the Habsburg armament industry after the Great War, Poland had no significant armament industry and relied heavily on imports. In February 1921 Poland and France signed a secret military convention which obliged France to send war material, rolling stock, and technical personnel (but not troops) to Poland in case of either a German or a Russian aggression (Ciałowicz 1970, pp. 403-05). Moreover, in 1921 France agreed on an armament credit over 400

million Francs, payable in several instalments, which was seen as crucial for a modernization of the Polish army.

However, the economic realities of Poland in the 1920s were at odds with this strategic orientation, insofar as Poland inherited from the long period of partition very close economic ties both with Germany and the Habsburg successor states including Austria.<sup>6</sup> Table 8 shows the percentage shares of various countries in Polish foreign trade 1924-1936. The joint share of Germany and Austria in total Polish exports exceeded 50% in 1924 and 1925, and about 40% of all Polish imports came from these two countries. Also, German and Austrian capital was by tradition heavily engaged in Polish banking and the mining industry, hence in key sectors of the economy (see Smerek 1933). The implications of this dependency became visible in early 1925, when Germany started to bilaterally renegotiate her trade relation with Poland after the restrictions imposed by the treaty of Versailles did no bind her any more (Landau and Tomaszewski 1999, p. 137). In June 1925 the Germans prohibited Polish coal imports until a new trade agreement would be signed, and Poland retaliated. The following “trade war” with Poland is clearly visible in a dramatic decline of Poland’s exports to Germany, which affected especially coal, but also agricultural products. While Poland managed to substitute the German export market - in part and temporarily - by exports to Britain (helped by the British coal strike), Poland was obviously the weaker side in the conflict, which made a deep impact on her economy. Together with heavy tax increases to support the newly (January 1924) established złoty and a poor harvest in 1924, the trade conflict produced an unfavourable balance of trade and put the Polish currency – just stabilized - under severe pressure (Smith 1936). Beyond this, the international political landscape changed in October 1925 with the Locarno treaties, which were seen in Poland as a rapprochement between France and Germany against the spirit of the 1921 convention, not at least because Locarno lacked any guarantee for Poland’s western border (Wandycz 1988).

All these factors helped to bring about the coup d’état of Marshall Piłsudski in May 1926, with its slogan of “Sanacja” – to “cure” Poland from political fragmentation in order to strengthen the new state on the international scene. One of the first apparent successes of the new regime was the stabilization of the currency in

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<sup>6</sup> The economic relations with Russia, in contrast, were cut during the Great War and the Russian Revolution in 1918. See Wolf (2006).



late 1926 and the agreement on a stabilization loan in 1927, which allowed Poland in October 1927 to join the international gold-exchange standard (Smith 1936). In the meantime, the Polish government made several efforts to foster an economic reorientation of the country reducing the dependency from Germany. The backbone of these efforts was the development of Gdynia as main seaport to reduce dependency on Gdansk and railway transits through Germany, and the construction of a direct railway connection between the Upper Silesian coalfields and this new port. The central political figure here was Eugeniusz Kwiatkowski, then minister of trade and industry. For both enterprises, the Polish government sought to attract French capital, not at least in order to create French vested interest in the Polish Corridor. These efforts were intensified during the Great Depression, in order to capitalize from the weakening of German banks and industry relative to their French competitors. In February 1930, after the consolidation of Poland's wartime debt to France, the French cabinet authorized the signing of an agreement with a French consortium for the completion of the Gdynia harbour, and negotiations began to create a Franco-Polish company to build and exploit a railroad linking Upper Silesia with this new harbour (Wandycz 1988, p. 168). In a similar vein, in August 1931 the Polish charge d'affaires Muehlstein discussed in Paris the possibilities to replace the influence of German banks in Upper Silesia by French capital. "As long as the situation was normal, the fight with the German banks was very difficult, but now, when the German *krach* had undermined their authority, it would just be a political sin not to use this opportunity and not to try to replace the German capital by French capital".<sup>7</sup>

At the same time, the question of how to finance the urgent modernization of the Polish army came up again because the depression started to produce growing budget deficits and because the government feared the growing political instability in Germany. After a Polish attempt in July 1929 to negotiate a new French armament credit over 1.5 billion Francs had failed, renewed efforts to at least get the final instalment of the 1921 credit – frozen since Locarno - succeeded in February 1931. The deliveries were scheduled for May 1931 until December 1933 (Ciałowicz 1970, p. 162f). After this, the Polish side immediately attempted to discuss a new armament credit via ambassador Chłapowski in Paris. When this failed, Piłsudski sent a special envoy Targowski to Paris in November 1931 to explore chances for private armament

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<sup>7</sup> Own translation from a Letter of Muehlstein to Polish Foreign Minister Zaleski, August 8, 1931, cited after Landau and Tomaszewski (1964), p. 315.

credits (*ibidem*, p. 164) followed by an official request of the Polish General Staff about the price for a large delivery of heavy weapons. Note that the General Staff was eager to stress in this request the inability of Poland to realize a cash-transaction (*ibidem*, p. 166).

In this political environment of 1931 it is hardly surprising that Poland followed neither Germany nor later Britain off gold. In addition to a possible risk of inflation, the Polish government feared to lose access to French capital when it felt to need it most. Polish monetary policy apparently hinged to a large degree on the strategic considerations of the regime. Two further aspects support this view. First, in May 1931 Marshall Józef Piłsudski made his brother Jan minister of finance. He did this obviously to tighten his personal grip on economic policy because his brother had as little expertise in monetary policy as he himself. Jan Piłsudski was followed in September 1931 by W. M. Zawadzki, an eminent Polish economist, founding member of the Econometric Society, classical hardliner of orthodox monetary policy, and a confidant of Piłsudski (Landau and Tomaszewski 1965). In a private memorial of late 1935, which - importantly - was never meant for publication, Zawadzki recapitulated his monetary policy as being based on two principles: first, to finance the military (!) budget of the Polish state to which the whole economy must be adapted, and second to stick to the gold exchange standard. He describes his motivation for the latter as threefold: first, to gain access to foreign capital. Second, to avoid domestic turmoil after a destabilization of the currency that could undermine the authority of the regime. And finally third, Zawadzki mentions the fact that a devaluation of the złoty would “automatically decrease the military budget”, because it would decrease its purchasing power abroad.<sup>8</sup> In addition, he was positively convinced that it was possible to overcome the crisis by a downward adjustment of prices,<sup>9</sup> and pursued this policy until his demission in October 1935.

This came clearly at a cost. As depicted in figures 1-3, Poland suffered through a severe economic crisis, with more deflation and a worse decline in industrial output than in other European countries. And there was opposition. From 1932 onwards, a growing number of economists and politicians argued for a change in monetary policy, most notably the Kraków group around Krzyżanowski and Zweig

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<sup>8</sup> Zawadzki (1935), reprinted in Landau and Tomaszewski (1965), pp. 127-151, here especially page 134.

<sup>9</sup> *Ibidem*, p. 132.

that proposed in June 1932 a cautious devaluation without expansionary monetary policy; probably not a solution to the problem (see Knakiewicz 1967, p. 96). Members of the Central Bank's board were split over the question of devaluation in mid 1932, but the minister of finance (Zawadzki) had the final say (Karpiński 1958, p. 113). What is more, the number of industrial strikes, factories affected and hours lost during strikes, started to increase slowly in 1932 (Mały Rocznik Statystyczny 1939, p. 284). The authoritarian government certainly had tools to oppress this opposition not available to democratic governments, but it was also helped by several other factors. The very high share of agriculture in the Polish economy implied that the suffering of a large part of the population during the depression years was limited, as they were unaffected by unemployment and not threatened by starvation. As stated in the *Economist* "Polish peasants have been accustomed for centuries to hard work and privation. (...) They have plenty to eat and enough to wear, and to the great bulk of the population such problems as bank deposits, currency stability, etc., are not matters of consequence."<sup>10</sup> Note that this effect entered the previous estimations insofar as the rate of unemployment was measured as the number of registered unemployed per active population. Given the extreme decline in industrial output, the comparatively low rate of unemployment is explained by the low share of industry in the country. Also, there were some signs of a recovery in the third quarter of 1932, visible in a stabilization of prices, a small increase in industrial production, and a decline in unemployment (see Figures 1-3). Another factor that actually helped the Polish regime to stay on gold was the suspension of the gold exchange standard in the US in 1933. Since the Great War, the dollar had been a de facto second currency, especially in the southern parts of Poland (due to the tight migration relations of Galicia to the US), used for hoarding but also for common bank transactions. After the dollar devaluation, many people exchanged their dollar holdings into złoty in fear of further losses, and the government perceived this as a gain in the currencies reputation. Besides, the depreciation also brought about a relief in Poland's foreign indebtedness, which had already started with the depreciation of the pound sterling, but most foreign debt was in dollar (Zweig 1944, pp. 62-64).

At the London Conference in July 1933, Polish delegates had the opportunity to demonstrate their adherence to the gold-exchange standard and joined gold bloc

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<sup>10</sup> *Economist*, September 26, 1931, p. 568.

with France, Italy, Belgium, Holland, and Switzerland. In its Bulletin for autumn 1933, the Bank of Poland reported that “the access of Poland to the so-called 'gold-bloc' made a good impression” (Bank of Poland 1933, p. 83). The government probably hoped for some real effects of its adherence to the gold bloc, and at least in one respect this Polish policy was successful: it helped to reduce Poland’s economic dependency on Germany and prevented Poland to loose “friendly” capital. Not only did the share of Germany in Polish foreign trade decline (Table 8), but also did the share of German capital in Polish enterprises (from 23% in 1933 to 19% in 1936). Instead, the share of France remained unchanged (at 24%) and the joint share of the Gold Bloc members without Italy slightly increased (40%, 43%). The latter increased even in absolute terms (own calculations based on Wellisz 1938, Appendix A). Nevertheless, there are signs that the underlying factors behind Polish monetary orthodoxy started to change just before the London Conference, namely with the changing international situation after the conferences of Lausanne (July 1932) and Geneva (from February 1932 onwards). Piłsudski’s growing mistrust in his French ally, which at these conferences showed little interest in the security of Poland’s western border, was expressed in cancelling the extension of the French military mission in Poland in August 1932 (see Wandycz 1988, pp. 236ff.). Shortly after the appointment of Hitler as German chancellor in January 1933, Piłsudski aimed to test the reliability of his French ally by ostensibly strengthening the small Polish garrison on Westerplatte in Gdansk on 6 March 1933, violating international agreements. In France and Germany, this was interpreted as Polish willingness to prepare a preventive war against German attempts of a border revision, and France warned Poland to proceed (Wandycz 1988, p. 271). Hence, Poland found herself in a strategic deadlock, with France unwilling to provide military support and a new dimension of aggression from the German side.

In this situation, there were signs of a strategic reorientation to reduce dependency on France and gain room de manoeuvre for Poland, especially to gain time and means for building up an independent Polish armament industry. Interestingly, it was just in March 24 1933 that the reserve requirements of the Bank of Poland were changed, which might be interpreted as a first, very cautious step to reorient monetary policy. Foreign currencies and bills of exchange were eliminated as legal reserve and the legal cover ratio was reduced to 30% of notes and sight liabilities in excess of 100 million złoty. On this basis, the actual cover ratio in March

1933 was 44.8% (Smith 1936). Hence, while the Bank of Poland's notes were still redeemable in currencies convertible into gold at mint parity and Poland was arguably still on the gold-exchange standard, it would have in principle allowed the Bank of Poland to engineer some monetary expansion. Indeed, in difference to other countries on gold, Poland managed a stabilization of M1 in 1933 and a very small increase afterwards (Bernanke 2000, p. 140), due a cautious credit expansion (Karpiński 1958, p. 166). But still, this can hardly be interpreted as expansionary monetary policy since the cover ratio was kept well above the legal requirement (Knakiewicz 1967, p. 148) and contraction in private banking continued. Zawadzki and others, responsible for monetary policy, and backed by Piłsudski himself, still believed that the benefits from deflation were higher than its cost. But by 1933 they had certainly lost their illusions on French help. According to the testimony of Adam Koc, deputy minister of finance under Zawadzki and another confident of Piłsudski "cooperation with French capital was the aim of our economic policy (...) up to the beginning of 1933" (cited after Wandycz 1988, p. 454).

The surprising rapprochement between Poland and Germany with the Non-Aggression Pact of January 1934, concluded for a period of 10 years, fits well into the picture of Poland trying to gain time (Wandycz 1988). While the pact served Hitler to substantiate his claim of peaceful intentions (...) after leaving the League (Bullock, 1962, p. 325), for the Polish government it was a main step of turning away from France towards a balanced neutrality between Moscow and Berlin, based on its own strengths. To this end, Polish military circles pressed for a rapid modernization of the army, visible in dramatic changes in the military budget after 1933 towards modern weapons, and for a state-funded armament industry. But Piłsudski himself was reluctant to follow their far-reaching requests (Krzyżanowski 1976, pp. 85ff.). Among the several effects of the death of Marshall Piłsudski in May 1935 was the political comeback of Kwiatkowski, "father of the harbour of Gdynia" who had left the government in 1930 over a row with the Marshall about the oppression of the democratic opposition and argued for a strong interventionist economic policy (Drozdowski 2001). In October 1935 Kwiatkowski replaced Zawadzki as minister of finance, and in December 1935 the Cabinet decided on a 4-year investment plan, that merged older plans for "big-push" industrialization with plans for setting up a large-scale Polish armament industry to be concentrated in the "Security Triangle" formed by Vistula and San (see Strobel 1975, Landau and Tomaszewski 1999). In the

meantime the economic pressure to finally release the “golden fetters” had increased sharply, with a large decline in Poland’s reserves from mid-1935 onwards (see Figure 5b), mainly due to the imposition of new exchange restrictions in Germany and elsewhere. Poland’s membership in the gold-bloc had become a façade without any economic foundations.

The time to act finally came in March 1936 with the remilitarization of the Rhineland, when Germany de facto cancelled the treaty of Locarno. Poland signalled her preparation to support France in an armed conflict in the spirit of the 1921 convention, but France did not react (Ciałowicz 1970, p. 216f). Moreover, the changing political climate in France, with an expected success of Blum’s Front Populaire questioned the future of the gold bloc altogether (Mouré 2002, p. 209ff.). On 9<sup>th</sup> April, 1936 a National Defence Fund was set up by presidential decree to be equipped with 1 billion złoty over the period 1937-40 in order to finance the modernization of Poland’s army (Krzyżanowski 1976, p. 146), apparently in anticipation of a radical change in monetary policy. Only two weeks later, on 26<sup>nd</sup> April 1936 another presidential decree introduced exchange controls, and thereby ended Poland’s adherence to the gold-exchange standard. The half-official Monthly Bulletin of the state-owned Bank Gospodarstwa Krajowego (BGK), published in French, defended this step as follows: “Therefore, the introduction of exchange controls was not directly determined by economic difficulties. The Polish government saw itself forced to this radical step in the first place in order to fight the currency speculation, which has developed recently and to stop the tendencies of hoarding, encouraged mainly by events from the domain of international politics. The aggravation of the political situation in Europe and the threat of war have had a negative impact on all countries and in the first place on the members of the gold bloc (...)” (BGK 1936, IX (4), p. 2).

## VII. Conclusion

This paper has two purposes. First, it explores the timing of exit decisions for European countries based on a panel of monthly observations 1928-1936 in order to understand the enormous variation in monetary policy choices across Europe. I have shown that the pattern of exit can be explained in terms of variation in a couple of

variables, all founded in economic theory. These variables are economic shocks (price deflation), the changing credibility of currency pegs visible from varying stock of gold and exchange reserves, the recent history of the currency in relation to the degree of central bank independence, the democratic character of the government, and the pattern of trade. Together they predict reasonably well the time when countries chose to exit the gold-exchange standard.

Second, I analyse the case of Poland more closely, which appeared to be an outlier for several reasons. To start with, Poland suffered through one of the worst examples of a depression, with massive deflation, a collapse of industrial production and huge unemployment. Moreover, the model fared worse to predict Poland's late exit in April 1936 but predicted an exit in mid-1935. By closer inspection, the factors that drive this prediction are the authoritarian character of the regime and a surprisingly high degree of trade integration with France in 1928, given the size and geographical situation of the country, rather "black boxes" than satisfying explanations. To explore these black boxes I argue that the Piłsudski regime that ruled Poland since May 1926 was mainly concerned with strategies to defend the independence and territorial integrity of the new Polish state against foreign (esp. German) aggression. The perceived risk that leaving the gold standard can produce monetary instability was in part due to the Polish experience of hyperinflation until 1923 followed by a second inflation in 1925-26. But in difference to other countries that experienced a hyperinflation in the 1920s, the Polish government was afraid of some additional costs of leaving gold: losing access to „friendly” capital in terms of the political system of Versailles. It is obvious that for her long-run development Poland desperately needed capital accumulation, through savings and capital imports. But the Polish government made some effort to be selective with regard to capital imports, increasingly so after the open conflict with Germany about renegotiating trade conditions since 1925. It continued these efforts during the great depression and the exit of Germany from gold in 1931 with France staying on gold created an incentive for the Piłsudski government to stay as well. French armament credits, both existing ones and others under negotiation well into 1936 complete this picture. Bold rhetoric of monetary orthodoxy, and several external factors including some signs of economic recovery in late 1932 helped the Polish government to defend this position, which culminated in Poland joining the “gold bloc” in July 1933.

But ironically, just from 1933 onwards the pendulum slowly started to swing back. Increasing tensions with France, a temporal improvement in Polish-German relations, and worsening economic conditions reopened the discussion about monetary policy. The Central Bank started to engineer a slow increase in M1 from 1934 onwards, but most importantly, there was a growing pressure from military circles to speed up the modernization of the Polish army, even without French support. In October 1935 E. Kwiatkowski, just appointed minister of finance, started to realize his old plans of big push industrialization merged with military plans to set-up a Polish armament industry. After the Rhine crisis of March 1936 had proved French unwillingness to fight for the political system of Versailles, and the defenders of the Franc Poincaré started to retreat, Poland prepared the exit decision. In April 9 1936 a 1 Billion Złoty National Defence Fund was set up to finance the modernization of Poland's army, before Poland introduced exchange controls in April 26 1936 and thereby finally left the gold-exchange standard.

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## Tables

Table 1a: H1, economic pressure, levels

Dependent Variable: DEPVAR  
 Method: ML - Binary Logit (Quadratic hill climbing)  
 Sample (adjusted): 1 2312  
 Included observations: 466 after adjustments

Variable	Coefficient	Std. Error	z-Statistic	Prob.
C	-2.039938	2.574261	-0.792436	0.4281
WHOLE	-0.073319	0.038806	-1.889350	0.0588
IND	0.028440	0.043841	0.648715	0.5165
UNRATE_C12	62.35208	24.68446	2.525965	0.0115

McFadden R-squared 0.12, HL-Stat: 11.36, Prob. Chi-Sq (8): 0.182

Table 1b: H1, economic pressure, 3-months moving averages

Dependent Variable: DEPVAR  
 Method: ML - Binary Logit (Quadratic hill climbing)  
 Sample (adjusted): 3 2312  
 Included observations: 456 after adjustments

Variable	Coefficient	Std. Error	z-Statistic	Prob.
C	-1.774641	2.531337	-0.701069	0.4833
MAWHOLE	-0.067552	0.039469	-1.711507	0.0870
MAIND	0.021062	0.044536	0.472907	0.6363
MAUNRATE_C12	61.29326	25.32281	2.420477	0.0155

McFadden R-squared 0.11, HL-Stat: 7.332, Prob. Chi-Sq (8): 0.501

Table 2a: H2, reserves and credibility, levels

Dependent Variable: DEPVAR  
 Method: ML - Binary Logit (Quadratic hill climbing)  
 Sample (adjusted): 1 2312  
 Included observations: 488 after adjustments

Variable	Coefficient	Std. Error	z-Statistic	Prob.
C	-2.741033	0.694008	-3.949571	0.0001
UKUS_OFF	-0.100742	0.482014	-0.209001	0.8344
EXCHANGE	-0.018815	0.010348	-1.818193	0.0690
GOLD	5.05E-05	0.000371	0.136094	0.8917

McFadden R-squared 0.103, HL-Stat. 10.201, Chi-Sq (8) 0.251

Table 2b: H2, reserves and credibility, 3-month moving averages

Dependent Variable: DEPVAR  
Method: ML - Binary Logit (Quadratic hill climbing)  
Sample (adjusted): 3 2312  
Included observations: 475 after adjustments

Variable	Coefficient	Std. Error	z-Statistic	Prob.
C	-3.026788	0.728924	-4.152405	0.0000
UKUS_OFF	-0.002552	0.498343	-0.005120	0.9959
MAEXCHANGE	-0.012743	0.007021	-1.612554	0.1078
MAGOLD	1.05E-05	0.000351	0.030061	0.9760

McFadden R-squared 0.077, HL-Stat 9.738, Prob Chi-Sq (8) 0.284

Table 3: H3, H4, Democracy, Inflation History, and Central Bank Independence

Dependent Variable: DEPVAR  
Method: ML - Binary Logit (Quadratic hill climbing)  
Sample (adjusted): 1 2312  
Included observations: 489 after adjustments

Variable	Coefficient	Std. Error	z-Statistic	Prob.
C	-4.094201	1.253620	-3.265902	0.0011
DEMOCRACY	0.307347	0.807283	0.380717	0.7034
INDEP	-0.116257	0.738427	-0.157439	0.8749
DEVALHIST	0.001005	0.012783	0.078637	0.9373

McFadden R-squared 0.002, HL-Stat 7.12, Prob Chi-Sq (8) 0.524

Table 4: H5, Trade Patterns

Dependent Variable: DEPVAR  
Method: ML - Binary Logit (Quadratic hill climbing)  
Sample (adjusted): 1 2312  
Included observations: 489 after adjustments

Variable	Coefficient	Std. Error	z-Statistic	Prob.
C	-2.964007	0.706302	-4.196515	0.0000
INT28_F	-2.029975	1.217483	-1.667353	0.0954
INT28_G	0.128728	0.904204	0.142366	0.8868
INT28_UK	-0.524960	0.980191	-0.535569	0.5923
TRADEGOLD	-2.771608	1.139485	-2.432334	0.0150

McFadden R-squared 0.106, HL-Stat 13.20, Prob Chi-Sq (8) 0.105

Table 5.1: H1-H5

Dependent Variable: DEPVAR  
Method: ML - Binary Logit (Quadratic hill climbing)  
Sample (adjusted): 3 2312  
Included observations: 455 after adjustments

Variable	Coefficient	Std. Error	z-Statistic	Prob.
C	99.19615	39.09163	2.537529	0.0112
MAWHOLE	-2.207611	0.811848	-2.719241	0.0065
MAIND	0.039567	0.273915	0.144450	0.8851
MAUNRATE_C12	-184.2775	128.1065	-1.438471	0.1503
MAEXCHANGE	-0.298000	0.127072	-2.345139	0.0190
MAGOLD	-0.016363	0.006212	-2.634117	0.0084
DEVALHIST	-0.169064	0.107049	-1.579312	0.1143
INDEP	20.85372	8.010818	2.603195	0.0092
DEMOCRACY	75.41609	25.96867	2.904119	0.0037
TRADEGOLD	-1.981115	2.611545	-0.758599	0.4481
INT28_F	-13.38321	7.051644	-1.897885	0.0577

McFadden R-squared 0.722, HL-Stat, Prob Chi-Sq (8)

Table 5.2: H1-H5, Modified

Dependent Variable: DEPVAR  
Method: ML - Binary Logit (Quadratic hill climbing)  
Sample (adjusted): 3 2312  
Included observations: 455 after adjustments

Variable	Coefficient	Std. Error	z-Statistic	Prob.
C	26.37953	14.58618	1.808530	0.0705
MAWHOLE	-0.548437	0.202767	-2.704762	0.0068
MAIND	0.071871	0.169567	0.423852	0.6717
MAUNRATE_C12	-5.429458	87.67972	-0.061924	0.9506
MAEXCHANGE	-0.219940	0.086733	-2.535841	0.0112
MAGOLD	-0.003049	0.001438	-2.121006	0.0339
DEVALHIST*(IN DEP)	0.036078	0.019051	1.893773	0.0583
DEMOCRACY	30.59431	10.88935	2.809562	0.0050
TRADEGOLD	-5.697179	2.524567	-2.256695	0.0240
INT28_F	-9.881372	5.831804	-1.694394	0.0902

McFadden R-squared 0.551, HL-Stat, Prob Chi-Sq (8)



Table 6: Expectation Prediction Table (for 5.2)

Dependent Variable: DEPVAR

Method: ML - Binary Logit (Quadratic hill climbing)

Date: 11/08/06 Time: 16:44

Sample (adjusted): 3 2312

Included observations: 455 after adjustments

Prediction Evaluation (success cutoff C = 0.5)

	Estimated Equation			Constant Probability		
	Dep=0	Dep=1	Total	Dep=0	Dep=1	Total
E(# of Dep=0)	442.63	4.37	447.00	439.14	7.86	447.00
E(# of Dep=1)	4.37	3.63	8.00	7.86	0.14	8.00
Total	447.00	8.00	455.00	447.00	8.00	455.00
Correct	442.63	3.63	446.25	439.14	0.14	439.28
% Correct	99.02	45.33	98.08	98.24	1.76	96.55
% Incorrect	0.98	54.67	1.92	1.76	98.24	3.45
Total Gain*	0.78	43.58	1.53			
Percent Gain**	44.36	44.36	44.36			

\*Change in "% Correct" from default (constant probability) specification

\*\*Percent of incorrect (default) prediction corrected by equation

Table 7: Actual and Predicted Exit Dates (for 5.2, significant variables)

	Actual Exit	Predicted Exit: $Pr ob(D_{t+1} = 1   X_t) \geq 0.5$	Predicted Exit w/o 1-democracy	Predicted Exit w/o <i>int28 F</i>
Austria	09/1931	09/1931	-	-
Czechoslovakia	09/1931	10/1931	-	-
France	09/1936	Not before 12/1936	-	-
Germany	07/1931	07/1931	-	-
Hungary	07/1931	09/1932	-	-
Italy	05/1934	05/1934	-	-
Poland	04/1936	Not before 12/1936	09/1931	12/1934
Sweden	09/1931	09/1931	-	-

Actual Exit defined as imposition of exchange controls and/ or devaluation

Sources: Bernanke and James (1991), Eichengreen (1992)

Table 8: Polish Foreign Trade Relations, 1924-1936

Shares in Total Polish Imports/ Shares in Total Polish Exports					
	Germany	Austria	UK and Ireland	France	GoldBloc
1924	34.5/ 43.2	11.7/ 10.1	7.5/ 10.5	4.9/ 4.2	15.2/ 10.0
1925	31.0/ 41.3	9.7/ 12.4	7.9/ 7.9	5.8/ 1.7	15.1/ 7.9
1926	23.6/ 25.3	6.8/ 10.3	10.5/ 17.1	7.4/ 3.6	20.2/ 12.4
1927	25.5/ 32.0	6.5/ 11.0	9.4/ 12.2	7.5/ 1.7	18.3/ 10.4
1928	26.9/ 34.3	6.6/ 12.4	9.3/ 9.1	7.4/ 1.7	18.6/ 9.8
1929	27.3/ 31.2	5.8/ 10.5	8.5/ 10.2	6.9/ 2.2	18.9/ 10.2
1930	27.0/ 25.8	5.7/ 9.3	7.9/ 12.1	6.7/ 3.1	19.6/ 12.4
1931	24.5/ 16.8	5.1/ 9.3	7.1/ 16.9	7.5/ 5.5	22.3/ 17.5
1932	20.1/ 16.2	4.4/ 8.0	8.7/ 16.4	6.9/ 5.7	22.1/ 20.8
1933	17.6/ 17.5	4.3/ 5.8	10.0/ 19.2	6.8/ 5.5	21.7/ 20.2
1934	13.6/ 16.5	4.6/ 5.9	10.8/ 21.2	5.8/ 4.2	21.2/ 19.3
1935	14.4/ 15.1	4.8/ 6.4	13.5/ 19.9	4.9/ 3.5	18.8/ 18.3

Source: *Rocznik Handlu Zagranicznego Rzeczypospolitej Polskiej*, Główny Urząd Statystyczny. Warsaw.

# Figures

Figure 1: Index of Wholesale Prices (1928=100)

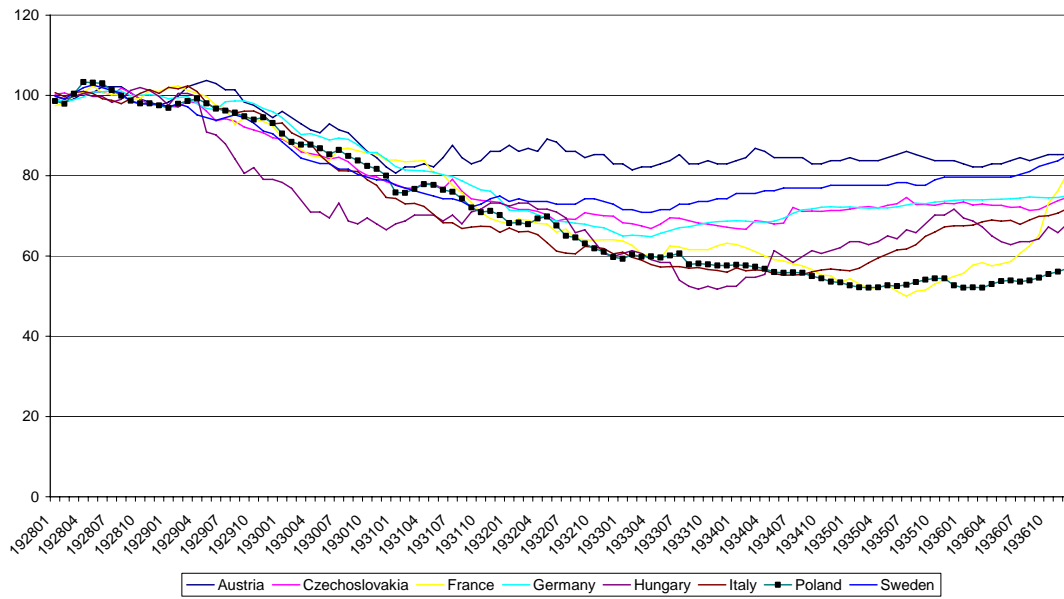


Figure 2: Index of Industrial Production (1928=100)

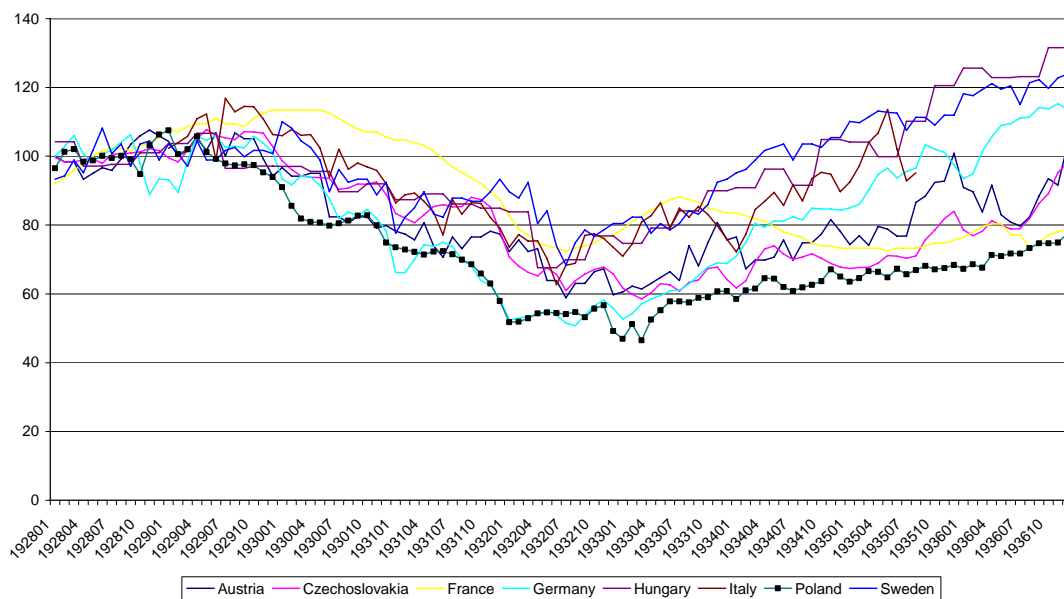


Figure 3: Rate of Unemployment

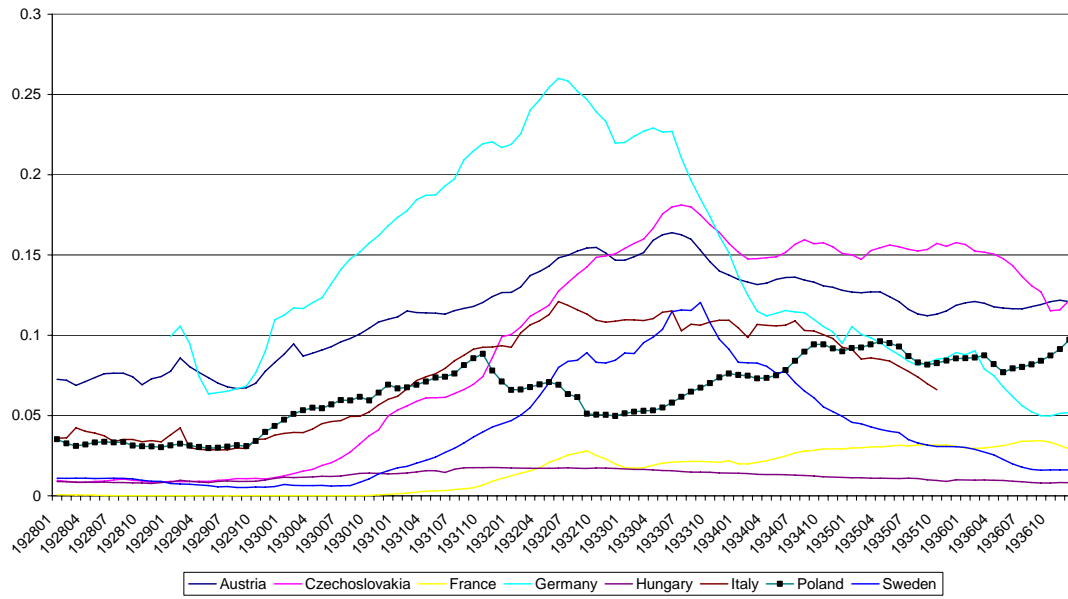


Figure 4a: Foreign Exchange Reserves

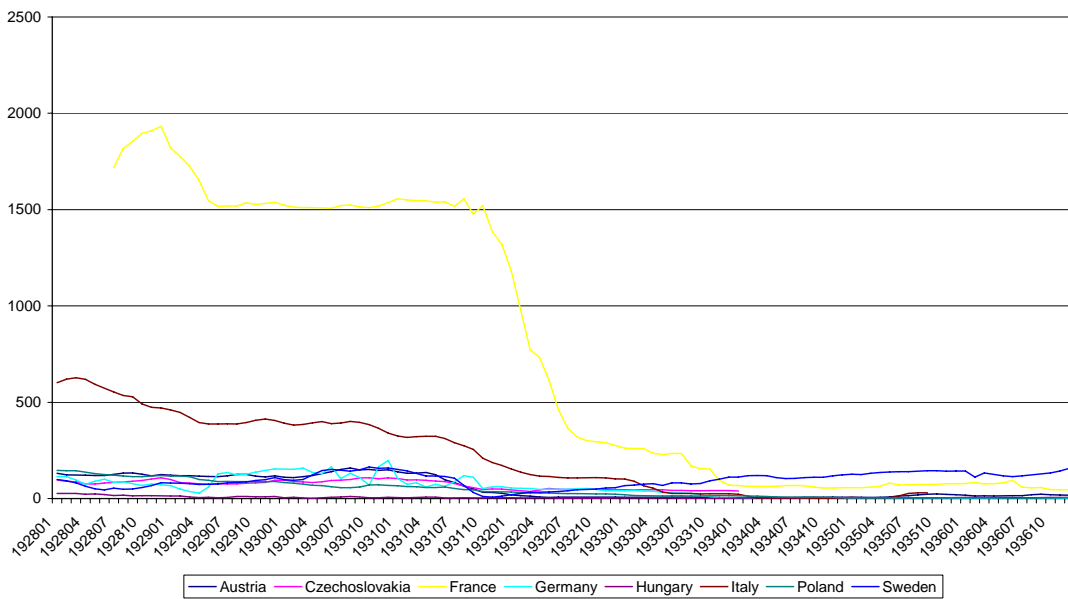


Figure 4b: Foreign Excnage Reserves w/o Fr, Ger, It

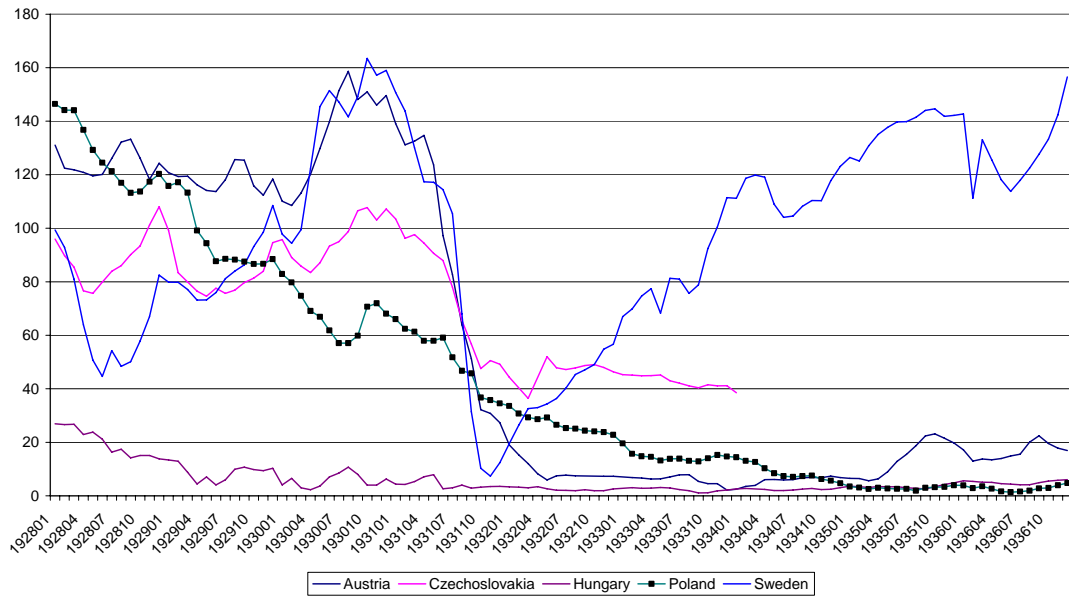


Figure 5a: Gold Reserves

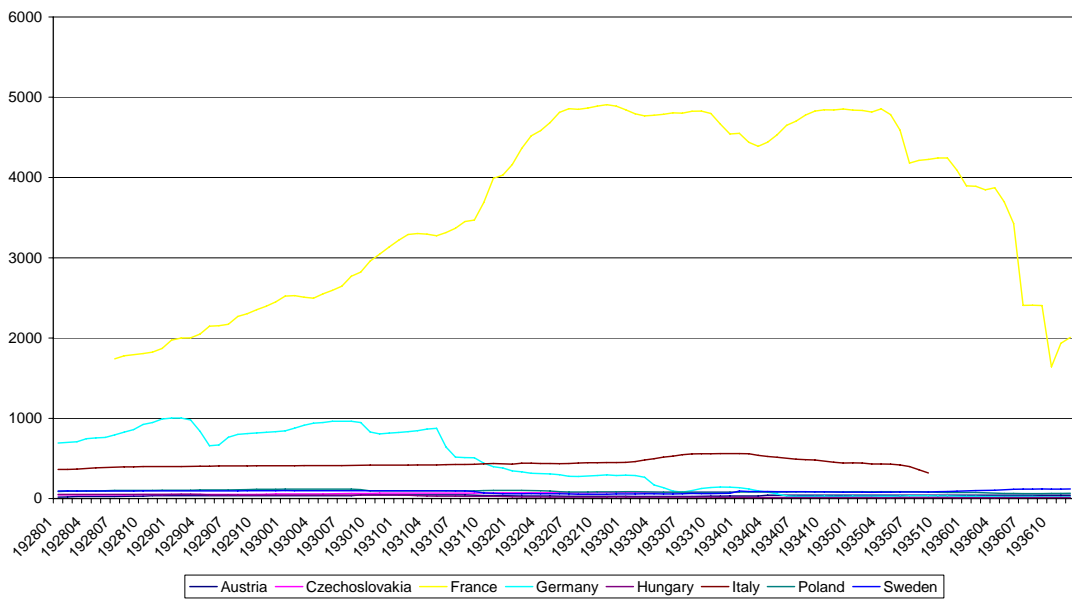


Figure 5b: Gold Reserves w/o Fr, Ger, It

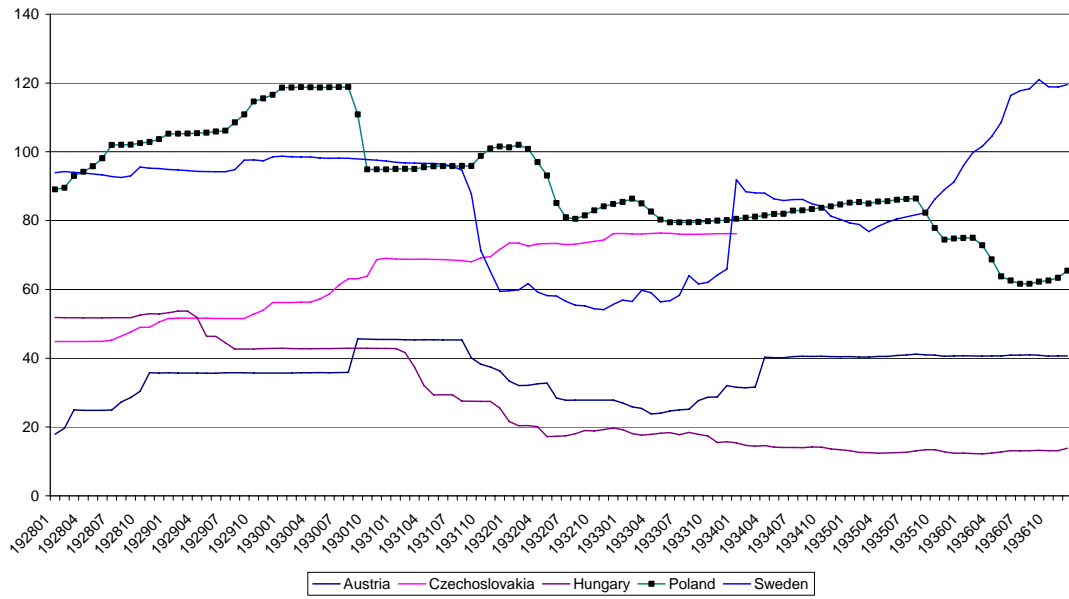


Fig. 6: Survival Probability to stay on Gold, France 1928-1936



Fig. 7: Survival Probability to stay on Gold, Poland 1928-1936

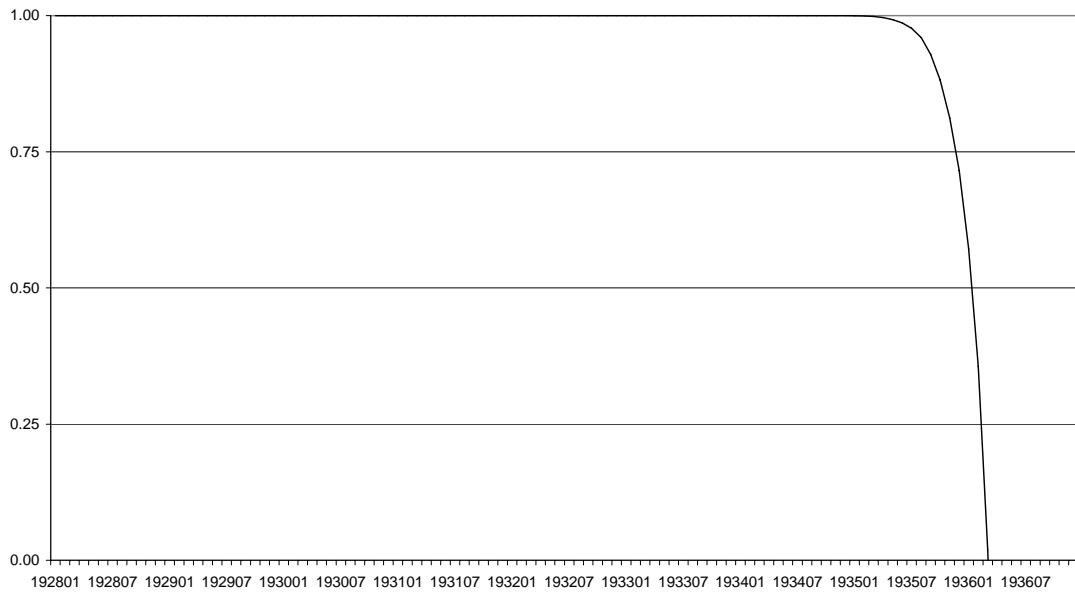


Fig. 8: Survival Probability to stay on Gold, Poland 1928-1936, w/o effect of trade integration with France

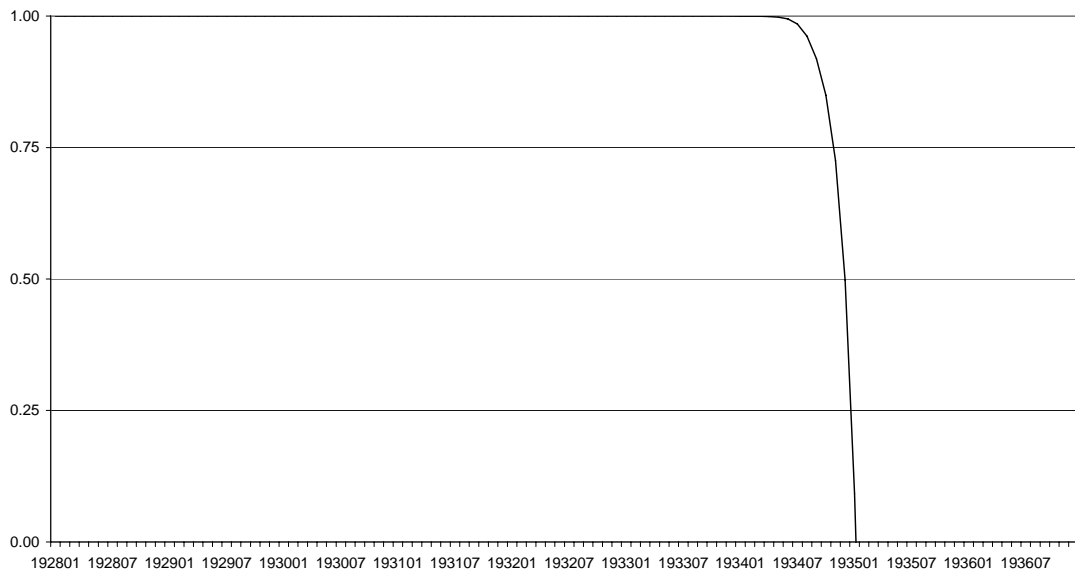


Fig. 9: Survival Probability to sta on Gold, Poland 1928-1936,  
w/o democracy effect

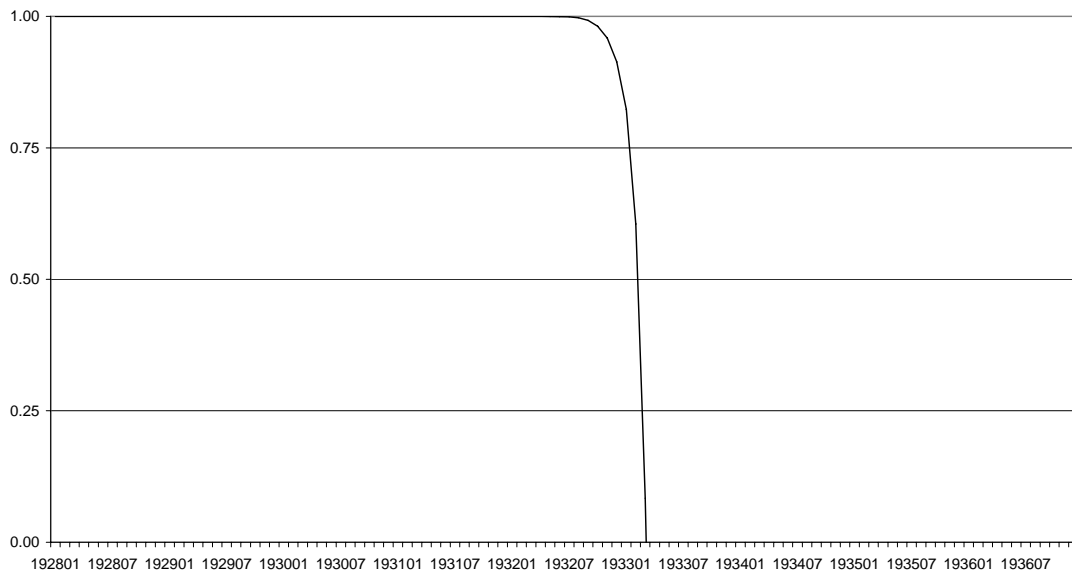
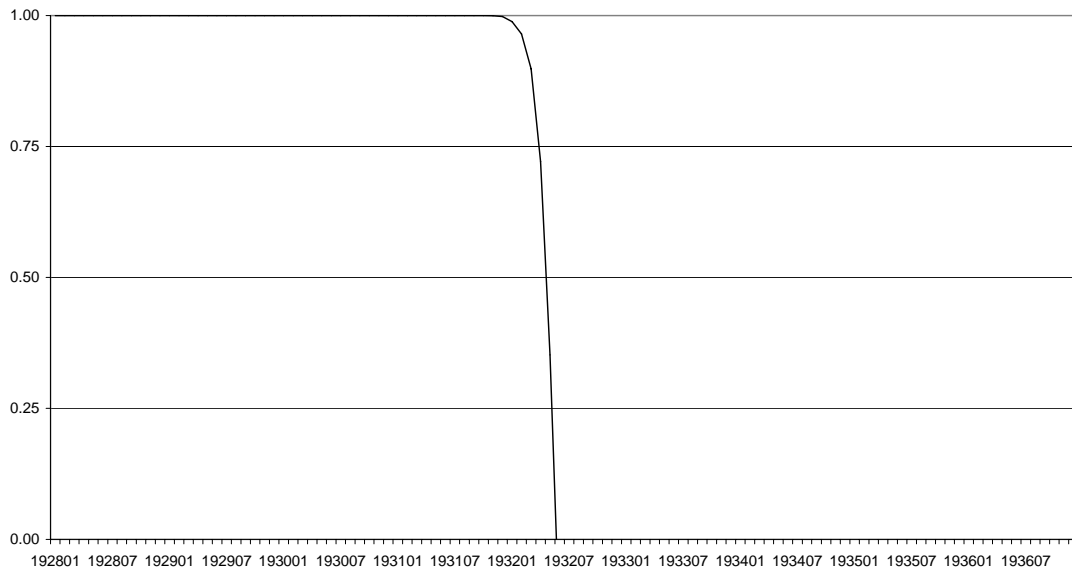


Figure 10: Survival Probability to stay on Gold, Poland 1928-1936,  
w/o effects of democracy and trade integration with France





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