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Reviewed work(s):

Source: *The Journal of Economic History*, Vol. 44, No. 2, The Tasks of Economic History (Jun., 1984), pp. 499-507

Published by: [Cambridge University Press](#) on behalf of the [Economic History Association](#)

Stable URL: <http://www.jstor.org/stable/2120726>

Accessed: 21/09/2012 13:39

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The Supply of Money and Reichsbank Financing of Government and Corporate Debt in Germany, 1919–1923

STEVEN B. WEBB

During the five years of inflation, price stability, and hyperinflation in Germany after World War I, three factors determined the growth of the money supply. First, the Reichsbank freely issued money in exchange for whatever government or corporate debt the private sector did not wish to hold at the official discount rate. Second, the government persistently ran large deficits. Political instability and the inflation itself prevented taxation adequate to pay for social programs, subsidies to the railroad and businesses, and reparations to the Allies. The third factor was expectations of inflation, which, as they became more pessimistic, led people to hold less and monetize more of the outstanding stock of debt. Thus, the money supply was partly endogenous and partly dependent on government fiscal policy. The monetary policy of the Reichsbank, although essential to the inflation process, was a constant and passive one until stabilization at the end of 1923.

“**T**HERE is no doubt that the growth of the money supply has for the most part its origins in the growth of the [government’s] floating debt,” the Reichsbank Direktorium wrote to the Finance Ministry in July 1919.¹ Four years later, in August 1923, Reichsbank President Havenstein was still saying the same thing.² Interest in the causes of the German inflation have led to studies that usually reached a conclusion similar to that of the Reichsbank, but the motives and varying approaches of the different inquiries indicate that a more precise understanding of Reichsbank policy and the money supply process is still needed.

Historians in the last decade have sought and found in the trauma of the inflation causes for the traumas of the great depression and Nazi rule that followed a decade later.³ This return in a more sophisticated way to

Journal of Economic History, Vol. XLIV, No. 2 (June 1984). © The Economic History Association. All rights reserved. ISSN 0022-0507.

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¹ Author’s translation. Germany, Reichskanzlei, *Akten der Reichskanzlei, Weimarer Republik: Kabinett Bauer* (Boppard am Rhein, 1980), pp. 40–47.

² *Reichskanzlei: Kabinett Stresemann*, pp. 37–42.

³ Larry E. Jones, “Inflation, Revaluation, and the Crisis of Middle-Class Politics. A Study of the Dissolution of the German Party System, 1923–1928,” in *Central European History*, 12 (1979), 148–52; Thomas Childers, “Inflation, Stabilization, and Political Realignment in Germany 1919–1928,” in Gerald D. Feldman, *et al.* eds., *The German Inflation: A Preliminary Balance* (Berlin, 1982), pp. 385–408; Michael S. Hughes, “Economic Interest, Social Attitudes, and Creditor Ideology: Popular Responses to Inflation,” in Feldman, *et al.* eds., *The German Inflation*, pp. 409–31; Harold James, “Did the Reichsbank Draw the Right Conclusions from the Great Inflation?” (Cambridge, 1983), mimeo.

an older view that the effects of the inflation were overwhelmingly negative has spurred efforts of historians to allocate responsibility for it within the political structure.⁴ Convinced by the evidence that government debt and the money supply continued to grow even in periods when the mark's exchange rate held steady or improved, the historical profession has come more and more to side with the theory that deficits and the money growth they caused were the root of the inflation.⁵ A dispute remains about how much the Reichsbank did independently, how much was attributable to the regimes in power (especially their design of tax and expenditure policy), and how much was merely in the cards of the Weimar Constitution and party system.

The data series on prices and money supply in the German inflation have served monetary economists in recent decades as a favorite proving ground for their increasingly complex models of money demand and expectations formation.⁶ Theories about the formation of rational expectations of inflation have had to specify a function for the money supply, which is the driving engine of these models. Some posited time series of varying complexity,⁷ others assumed that the money supply

⁴ Gerald D. Feldman, "The Political Economy of Germany's Relative Stabilization during the 1920/21-Depression," in Feldman, *et al.* eds., *The German Inflation*, pp. 180–206; Peter-Christian Witt, "Tax Policies, Tax Assessment and Inflation: Toward a Sociology of Public Finance in the German Inflation, 1914–1923," in Nathan Schmukler and Edward H. Marcus, eds., *Inflation Through the Ages* (New York, 1983), pp. 450–72; Witt, "Staatliche Wirtschaftspolitik in Deutschland 1918–1923: Entwicklung und Zerstörung einer modernen wirtschaftspolitischen Strategie," in Feldman, *et al.* eds., *The German Inflation*, pp. 151–79.

⁵ Friedrich-Wilhelm Henning, *Das industrialisierte Deutschland 1914 bis 1972* (Paderborn, 1974), pp. 67–70; Heinz Haller, "Die Rolle der Staatsfinanzen für den Inflationsprozess," in Deutsche Bundesbank, ed., *Währung und Wirtschaft in Deutschland 1876–1975* (Frankfurt am Main, 1976), pp. 142–50; Karl Hardach puts primary blame on the deficits, but does not totally reject the importance of the balance of payments, *The Political Economy of Germany in the Twentieth Century* (Berkeley, 1980), pp. 16–23; Manfred Nussbaum, *Wirtschaft und Staat in Deutschland während der Weimarer Republik*, H. Nussbaum and L. Zumpe, eds., *Wirtschaft und Staat in Deutschland* (Vaduz/Lichtenstein, 1978), Vol. 2, pp. 18–22; Carl-Ludwig Holtfrerich, *Die deutsche Inflation, 1914–1923: Ursachen und Folgen in internationaler Perspektive* (Berlin, 1980), pp. 115–35; Heinz Habedank, *Die Reichsbank in der Weimarer Republik: Zur Rolle der Zentralbank in der Politik des deutschen Imperialismus 1919–1933* (Berlin, 1981), pp. 37, 65–67.

⁶ Phillip Cagan, "The Monetary Dynamics of Hyperinflation," in Milton Friedman, ed., *Studies in the Quantity Theory of Money* (Chicago, 1956), pp. 25–117; Robert J. Barro, "Inflation, the Payments Period, and the Demand for Money," *Journal of Political Economy*, 78 (Nov./Dec. 1970), 1228–63; Thomas J. Sargent and Neil Wallace, "Rational Expectations and the Dynamics of Hyperinflations," *International Economic Review*, 14 (June 1973), 328–50; Jacob A. Frenkel, "Inflation and the Formation of Expectations," *Journal of Monetary Economics*, 1 (Oct. 1975), 403–21; Robert P. Flood and Peter M. Garber, "An Economic Theory of Monetary Reform," *Journal of Political Economy*, 88 (Feb. 1980), 24–58; Flood and Garber, "Market Fundamentals versus Price-Level Bubbles: The First Tests," *Journal of Political Economy*, 88 (Aug. 1980), 745–70; Flood and Garber, "Process Consistency and Monetary Reform: Some Further Evidence," *Journal of Monetary Economics*, 12 (1983), 279–95; see also Webb, "Money Demand and Expectations in the German Hyperinflation: A Survey of the Models," in Schmukler and Marcus, eds., *Inflation Through the Ages*, pp. 435–49.

⁷ Michael Mussa, "Adaptive and Regressive Expectations in a Rational Model of the Inflationary Process," *Journal of Monetary Economics*, 1 (Oct. 1975), 423–42; Flood and Garber, "Market Fundamentals"; Edwin Burmeister and Kent D. Wall, "Kalman Filtering Estimation of Unobserved Rational Expectations with an Application to the German Hyperinflation," *Journal of Econometrics*, 20 (Nov. 1982), 255–84.

depended on government deficits.⁸ Although it is difficult to distinguish which model best fits the data, differences between the models do matter for forecasting and forming inflationary expectations.⁹ Thus, economists as well as historians have important stakes in determining what role the Reichsbank played—and how they played it—in determining the supply of money in the German inflation.

Although monetary policy in the decade after 1914 differed radically from that of preceding decades, some of the procedures of the gold standard period persisted in Germany after 1919 and formed a framework for Reichsbank policy. Within a simplified version of traditional European central banking practice, the private sector decided how much of the total credit demand of firms and the government it wished to meet by holding the original, interest-bearing debt instruments and how much it wished to supply by holding money balances, obtained by discounting the debt instruments at the central bank. The central bank could and traditionally did vary the rate at which it would discount. Thus, the money supply technically was endogenous and not explicitly a target variable, but the central bank did control it by varying the discount rate and rationing credit.¹⁰ In Germany, the two major departures from the old rules dated from the beginning of war mobilization in 1914: suspension of convertibility at par and fixation of the discount rate at 5 percent from the end of 1914 to mid-1922. The other major change in conditions, although not in procedures, for determining the money supply was the vast increase in credit demands of the German government, which before 1914 had little debt but throughout the decade of 1914–1923 financed most of its expenditure by borrowing. Given the nominal credit demand of government and business, the private sector decided what portion of this total credit demand to hold as debt (paying some interest but unusable for most transactions) and what portion to hold as money. At least up to August 1923, the Reichsbank bank fully accommodated these decisions by discounting and monetizing what debt the private sector did not wish to hold.

The clearest indicator of this accommodation is the fraction of total debt monetized—turned into high-powered money—by the Reichsbank. For high-powered money there are monthly (and eventually weekly) data on Reichsbank and Loan Bureau (*Darlehnskassen*) notes in circulation and on nongovernment deposits at the Reichsbank. Debt discountable directly at the Reichsbank was chiefly government treasury bills, for which monthly data are complete, and commercial bills,

⁸ Sargent and Wallace, "Rational Expectations"; Rodney L. Jacobs, "Hyperinflation and the Supply of Money," *Journal of Money, Credit and Banking*, 9 (May 1977), 287–303; Sargent, "The Ends of Four Big Inflation," Federal Reserve Bank of Minneapolis Working Paper No. 158, 1981; Hans Jürgen Jaksch, "Ein einfaches ökonomisches Modell für die deutsche Hyperinflation von 1923," in Feldman et al., eds., *Die deutsche Inflation*, pp. 107–31.

⁹ Webb, "The Supply of Money in the German Inflation, 1919–1923: Some Models in a Horserace," mimeo (Ann Arbor, 1982).

¹⁰ Cf. James, "Did the Reichsbank Draw the Right Conclusions?"

whose value I estimated from the tax levied on them. Government bonds could be monetized via collateral loans at the Loan Bureaus, which had been set up in 1914 as subsidiaries of the Reichsbank to provide firms with collateral loans.¹¹ The chief gaps in the debt information are data on the privately issued assets (chiefly corporate bonds) that could be monetized at the Loan Bureaus and on the credit from revolving bank accounts, which prior to July 1922 substituted to a large degree for commercial bills. These omissions are insignificant in 1922–1923 but may have been important before then. Table 1 shows the ratio of high-powered money to the known parts of total debt—treasury bills, commercial bills, and government bonds. Although both total debt and the money supply eventually grew by over a billionfold during the post-war inflation, their ratio varied by barely a factor of three. Another paper discusses the regression analysis of this relationship using several different data series, periods and subperiods.¹² Space here suffices to discuss only briefly why the ratio of money to debt varied as it did and why some changes of circumstances had no effect on the ratio.

The variation in the fraction of total debt that the public chose to hold as money is most plausibly related to the interest rate and to inflationary expectations. A higher Reichsbank discount rate should, all else equal, have decreased the share of debt that the public wished to monetize. Although the upward movement of the discount rate after July 1922 did correlate roughly with the acceleration of hyperinflation, except during the two periods of price stability in 1920–1921 and spring 1923, the discount rate was always an order of magnitude less than the inflation rate.¹³ Closer statistical analysis verifies what narrative accounts suggest, that the Reichsbank's raises of discount rate were too little too late to discourage people to any noticeable degree from monetizing debt.

Expectations of greater inflation should have increased the share of debt monetized. The greater the expected inflation, the less investors should have cared about the minimal interest on T-bills, and the more they should have reduced their nominal portfolios to the minimum needed for transactions. Table 1 shows two indicators of expectations: the velocity of circulation of money and the forward discount of the mark in the foreign exchange market. Up through 1922 both indicators correlate highly (above .8) with the share of debt monetized. During 1923, inflationary expectations and the share of debt monetized were both at historically high levels, but their wide fluctuations reveal no

¹¹ Holtfreich, *Die deutsche Inflation*, p. 125.

¹² Webb, "Government Debt and Inflationary Expectations as Determinants of the Supply of Money in Germany, 1919 to 1923," *Journal of Money, Credit, and Banking*, forthcoming.

¹³ The Reichsbank raised the discount rate from 5 to 6 percent on 28 July 1922, to 7 percent on 15 August 1922, to 8 percent on 21 September 1922, to 10 percent on 13 November 1922, to 12 percent on 18 January 1923, to 18 percent on 23 April 1923, to 30 percent on 2 August 1923, and to 90 percent on 15 September 1923 (*Wirtschaft und Statistik*, 1922–1923).

systematic relationship. Even in periods when the inflation rate greatly exceeded the nominal return on debt, substantial portions of the total debt remained unmonetized. Most often, firms held the debt in the form of T-bills, via deposits at their banks (which actually owned the T-bills).¹⁴ Although such behavior did not maximize expected profits, firms were averse to (although not totally unwilling to undertake) the risk and the illegality of balancing real assets like inventory or foreign exchange against nominally fixed obligations like the payment of taxes withheld from workers or the redemption of script (*Notgeld*) paid to suppliers and workers.¹⁵

Descriptions of the Reichsbank's policy usually include more than its passive setting of the discount rate as a backdrop to the credit market's endogenous determination of the money supply. Let us consider whether the other aspects of Reichsbank policymaking were important in determining the money supply. For one thing, the Reichsbank frequently intervened in the foreign exchange market. The two most important intervention episodes were in the spring of 1920, when the Reichsbank stepped in to halt the appreciation of the mark (out of fear of a worsening trade balance), and in early 1923, when for almost three months the Reichsbank totally arrested the previous (and subsequent) precipitous fall of the mark. Although statistical tests do not reveal any shift in the money supply function at these times, the intervention of 1923 deserves comment because of its obvious impact on inflation. A month after the French invasion of the Ruhr in January 1923, the Reichsbank intervened and defended the mark's foreign exchange value. Inflation, money growth, government deficits, and the indicators of inflationary expectations all fell substantially. In a narrow sense, it was the smaller deficits and more optimistic expectations, not the exchange market intervention, that caused the slower money growth. Clearly, however, it was the Reichsbank's intervention that improved expectations and lowered the deficit by temporarily stopping inflation. Why could an intervention have even temporary success, when its eventual failure was inevitable? At first even the Reichsbank expected the stabilization to last no more than four weeks; in fact, it lasted twelve. The answer involves the uncertainty about how long the stabilization would last and the risk aversion of most market participants. Given its long-run infeasibility, the stability could last only as long as market participants believed that the stability would last a little longer. If only a few market participants with limited financial resources dared to speculate against the mark, the Reichsbank could defeat them, render their effort unprofitable, and sustain the stabilization. At first the

¹⁴ Holtfrerich, *Die deutsche Inflation*, p. 63.

¹⁵ Gutehoffnungshütte Historisches Archiv, 300070/6, 300070/7, 3001935/0; Westfälisches Wirtschaftsarchiv, Dortmund, F11 (Delius) Nr. 45g; Siemens Historisches Archiv, SAA 20/Ld 366, SAA 15/La 340; Krupp Historisches Archiv, WA IV 2560, WA 1403.

TABLE I
THE SHARE OF MONETIZED DEBT AND INFLATIONARY EXPECTATIONS

<i>Month</i>	<i>High-Powered Money</i> ÷ <i>Total Debt</i>	<i>Velocity Index</i>	<i>Forward Exchange Discount</i> (percent per year)	<i>Money Market Discount Rate</i> (percent per year)	<i>Inflation Rate</i> (WPI, percent per year)
1919 Jan.	.30	1.00	NA	3.20	58.30
Feb.	.29	1.02	NA	3.13	26.87
Mar.	.31	.99	NA	3.11	34.54
Apr.	.31	.99	NA	3.08	48.36
May	.29	1.08	NA	2.93	44.46
Jun.	.32	1.05	NA	2.87	79.36
Jul.	.29	1.30	NA	2.69	188.94
Aug.	.29	1.59	NA	2.71	224.71
Sep.	.30	1.74	NA	2.99	171.90
Oct.	.30	2.02	NA	3.64	191.18
Nov.	.30	2.34	NA	4.00	214.11
Dec.	.35	2.74	NA	3.96	371.83
1920 Jan.	.34	4.02	NA	3.88	446.48
Feb.	.35	4.56	NA	3.85	183.23
Mar.	.40	3.86	NA	3.75	-44.19
Apr.	.40	3.55	-7.11	3.75	-74.63
May	.40	3.21	-9.23	3.55	-77.40
Jun.	.42	2.72	-5.91	3.53	-58.38
Jul.	.39	2.81	-9.12	3.58	29.69
Aug.	.39	2.89	-5.10	3.50	54.39
Sep.	.40	2.75	-7.31	3.50	8.22
Oct.	.40	2.76	-7.89	3.45	3.99
Nov.	.38	2.75	-6.61	3.43	-12.37
Dec.	.41	2.47	-10.23	3.37	-28.48
1921 Jan.	.38	2.57	-13.81	3.40	-25.54
Feb.	.37	2.49	-13.20	3.46	-43.18
Mar.	.39	2.38	-11.03	3.43	-22.14
Apr.	.37	2.42	-8.61	3.45	-13.59
May	.36	2.42	-10.12	3.33	17.78
Jun.	.38	2.35	-7.49	3.35	52.59
Jul.	.37	2.86	-5.54	3.38	202.51
Aug.	.35	3.45	-7.15	3.38	221.92
Sep.	.39	3.49	-4.74	3.38	148.70
Oct.	.39	4.39	-5.01	3.56	301.26
Nov.	.43	4.55	-3.32	3.58	209.84
Dec.	.47	4.10	-4.44	4.18	42.33
1922 Jan.	.44	4.55	-3.35	4.37	96.65
Feb.	.45	5.30	-2.30	4.00	235.05
Mar.	.48	6.05	-.54	4.24	263.42
Apr.	.50	6.28	-.58	4.36	104.21
May	.52	6.15	-.34	4.55	60.10
Jun.	.56	6.95	.97	4.58	265.76
Jul.	.60	10.20	3.93	4.85	602.83
Aug.	.69	13.64	27.28	6.12	629.00
Sep.	.73	16.75	48.63	7.32	648.61
Oct.	.73	18.71	144.50	8.15	572.40
Nov.	.79	22.09	128.64	8.92	788.40
Dec.	.85	14.87	79.34	9.77	200.40

TABLE I (continued)

Month	High-Powered Money ÷ Total Debt	Velocity Index	Forward Exchange Discount (percent per year)	Money Market Discount Rate (percent per year)	Inflation Rate (WPI, percent per year)
1923 Jan.	.91	28.96	177.56	NA	1347.60
Feb.	.92	17.50	250.88	NA	159.60
Mar.	.83	10.59	55.42	NA	-86.40
Apr.	.94	9.61	121.99	NA	255.60
May	.95	13.33	146.53	NA	700.80
Jun.	.90	19.37	217.15	NA	1234.80
Jul.	.76	45.02	554.32	NA	2172.00
Aug.	.94	33.17	426.90	NA	2958.00
Sep.	1.05	27.89	NA	NA	4109.99
Oct.	.87	59.70	NA	NA	7100.41

Sources: High-powered money is total currency in circulation at the month's end plus non-government deposits at the Reichsbank (Statistisches Reichsamt, *Zahlen zur Geldentwertung in Deutschland 1914 bis 1923*, Berlin, 1925, pp. 46-52). For 1919-1920, the latter had to be estimated as .67 of the total deposits at the Reichsbank. Total debt is three-month Treasury bills outstanding at the month's end (not including those balanced against government deposits at the Reichsbank), government bonds (interpolated from annual figures), and the month's revenue from the tax on bills of exchange divided by the tax rate (Allied Powers, Reparations Commission, *Deutschlands Wirtschaft, Währung und Finanzen*, Berlin, 1924, pp. 29, 62; Bundesarchiv R42 I/2356 and R2 /1894). The velocity index is the wholesale price index times 1 minus the unemployment rate divided by the stock of high-powered money at the end of the month (unemployment from Holtfrenrich, *Die deutsche Inflation*, p. 195). The forward exchange discount is the continuously compounded annual percentage rate of discount (- is a premium) on one-month forward sales of marks for dollars (John M. Keynes, *A Tract on Monetary Reform*, London, 1923, pp. 119-20; Paul Einzig, *The Theory of Forward Exchange*, London, 1937, pp. 450-55). The money market discount rate is the month's average of the annual discount rate on the Berlin Börse (*Statistisches Jahrbuch für das Deutsche Reich*, Berlin, 1923, p. 269). The inflation rate is the continually compounded annual percentage rate of change of the average wholesale price index from the end of the previous month (*Zahlen zur Geldentwertung*, pp. 16-17).

efforts of the Reichsbank to stabilize were easy, because even a stabilization that was expected to be temporary increased people's willingness to keep marks in their pockets. This assisted in the stabilization process by actually bringing prices down. The fall of prices raised the real value of the outstanding debt and money supply, however, and this undermined the credibility of the Reichsbank's threat to defeat any run on the mark. Furthermore, after the real values of the holdings of nominal assets reached their equilibrium levels for a state of temporary stability, inflation had to resume at least at the rate of growth of the nominal money supply. Then, confident that the non-speculators would be following them rather than the Reichsbank, the speculators could make their runs on the central bank, as they did on April 18, after which

the Reichsbank let the mark resume its fall. In short, exchange market intervention could have a short-run impact on the course of the inflation without altering the underlying process that determined the money supply.

A second possible complication to Reichsbank policy was that until May 1921 a law required one third of the Reichsbank's liabilities to be backed with some asset like gold, which limited the number of T-bills the bank could hold. The Reichsbank found a way around this constraint, however, because it could count its holdings of Loan Bureau notes as part of the one third cover. In order to unload enough T-bills so as not to exceed two thirds of its assets, the Reichsbank resorted to the subterfuge of selling some to a Prussian state bank (Seehandlung), which then borrowed against them at the Loan Bureaus. The Loan Bureau notes thus created were then bought by the Reichsbank and held as part of the one-third cover for the Reichsbank notes in circulation.¹⁶ The effect of the Seehandlung-Loan Bureau-Reichsbank connection was, in other words, to guarantee that one way or another the central bank system would monetize whatever government and private debt the private sector did not wish to hold. Statistical evidence confirms the notion that the one-third cover law and its repeal in May 1921 made no difference in determining the aggregate money supply.

Since the private sector decided which portion of the total debt to monetize, qualitative changes in private credit market conditions also might have caused structural shifts in the money supply. One type of change related to whether the average inflation rate (over, say, one quarter) was above or below the discount rate at the Reichsbank. Before February 1920 and after June 1921 the inflation rate was higher, but there appeared to be no structural shift of the money supply function at these points in time. In summer 1922 a cluster of changes in the private credit market occurred, foremost of which were the decisions by foreign bankers not to give Germany long-term loans, the change of the forward exchange rate on the mark from a premium to a discount, the end of short-term foreign lending, and the Reichsbank's discounting of large volumes of commercial bills. Although some claim that Reichsbank policy shifted then, it was fundamentally more of a change in what the private sector was asking the Reichsbank to do.¹⁷ Only after July 1922, when private lenders were not offering cheaper credit than the Reichsbank, did corporate borrowers turn to the latter in large numbers. Statistical tests do not reveal a shift at this time in the parameters in the money supply function.

¹⁶ Bundesarchiv R2/1894, R43 I/630.

¹⁷ Erich Renell, "Der Warenwechsel in Deutschland in der Geldentwertungszeit 1919-1923," Ph.D. dissertation (Berlin, 1926), pp. 26-56; Constantino Bresciani-Turroni, *The Economics of Inflation: A Study of Currency Depreciation in Post-War Germany* (New York, 1931, 1937), p. 33; Frank D. Graham, *Exchange, Prices, and Production in Hyperinflation: Germany 1920-1923* (Princeton, 1930), pp. 62-66; Feldman, *Iron and Steel in the German Inflation: 1916-1923* (Princeton, 1977), pp. 316-19; Habedank, *Die Reichsbank*, pp. 74-75.

Summer 1923 was another time of many changes in the credit market. Large increases in real government borrowing and decreased use of paper marks in transactions combined with the counterpoints of tax reforms and Reichsbank efforts to have the commercial bills they discounted specified in gold rather than in paper marks. Although the inflation rate reached hundreds of percent per month, expectations in the goods (velocity) and forward exchange markets became somewhat more optimistic. There was, however, no corresponding willingness to hold more debt relative to money.¹⁸

This paper set out not to judge but to describe the nature of monetary policy in post-World War I Germany. Its central point is the passivity of the Reichsbank. Through the entire period, up to November 1923, the Reichsbank remained the backstop lender to the German government and corporations at a discount rate that would not throttle their activity.¹⁹ Economists who wish to account for the variations in the growth rate of the money supply should not theorize about changes in central bank policy. Via the foreign exchange market the Reichsbank could temporarily—but *only* temporarily—alter the course of the inflation. The fundamental *variables* behind the money supply were the government demands for credit, the corporate demands, and the private sector's willingness to supply it. The latter two were ultimately endogenous. Models of rational inflationary expectations for the historical case of post-war Germany must, therefore, feature spending, taxes, and announcements about them as the fundamental exogenous variables. When the Reichsbank stopped lending to the government in November 1923, it balanced its budget and the inflation stopped. When the Reichsbank cut off credit to corporations in the spring and summer of 1924, they quit speculating on a resumption of the inflation. The effectiveness of the Reichsbank action in eventually ending the inflation shows that its earlier passivity made the inflation possible. Whether the Directors of the Reichsbank are therefore to blame, however, depends on whether an earlier conversion of Reichsbank policy was politically possible. The scope of this paper permits only the report that many historians believe, as I, that an earlier attempt to force either balanced budgets on the government or a contraction on the private sector would have seriously threatened the Weimar constitutional system.²⁰ In any case, the constancy of the Reichsbank's permissiveness up to November 1923 means that historians should neither blame nor praise it for the major changes in the inflation rate during the first five post-war years.

¹⁸ The ratio of high-powered money to debt, reported in Table 1, is biased downward for the last two or three months in the sense that value of the debt people were asked to hold was not the face value, but only the discounted value. In August and September the discount rate rose high enough to make this difference non-trivial.

¹⁹ *Reichskanzlei: Kabinett Stresemann*, pp. 37–42.

²⁰ For example, Feldman, "The Political Economy of Germany's Relative Stabilization."