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# Financial mobilisation in Germany 1914-1918

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**Abstract:**

The First World War was not only a military conflict, but also an economic war. In all belligerent countries labour and material resources were shifted from civilian production to war-related purposes, and a central planning system was established to organise production and distribution. In this context, financial mobilisation played an important role. In Germany, preparations for financial mobilisation began at the end of the nineteenth century. Since 1891 fiscal and monetary policies were designed for the eventuality of a war and became, with few modifications, the basis for the financial mobilisation implemented in August 1914. In accordance with the strategic planning of the time, fiscal and monetary policies were prepared for a short war. However, the fiscal and monetary instruments remained essentially unchanged when the conflict turned at the end of September 1914 into a long, grim war of attrition. The accumulated government debt and the suppressed inflation left a heavy burden to the post-war world. From March 1918 onwards plans for fiscal and monetary stabilization following the war were discussed, but they remained inconclusive. After the armistice of 11 November 1918 they were soon forgotten as the republican governments embarked on an inflationary reconstruction policy.

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## I. Introduction

The aim of this paper is to discuss the interaction of government and central bank (*Reichsbank*) in Germany in financing the First World War.[1] "Financial mobilization" (*Finanzielle Mobilmachung*) comprised in contemporary understanding all fiscal and monetary policies that were necessary to finance the war (Delbrück 1914, p. 4).

Financial mobilization is not a favourite topic of historical research on the Great War in Germany. In recent publications on the First World War, fiscal and monetary policies receive only scant attention (Janz 2013, pp.255-256, 266; Leonhard 2014, pp.787-789; Münkler 2013, pp. 588-593). Several studies based on published documents and statistics discuss the quantitative dimension of financial mobilization; but they do not explore the motives of the decision makers in the German government and the central bank (Balderston 1989; Roesler 1967; Zeidler 1994).

## II. Pre-war plans for financial mobilisation

The economics of financial mobilization were basically the same in all belligerent countries. Only a small portion of the expenditure for troops, armaments, munitions and other war-related purposes was financed by taxes. For the far greater part the government borrowed the money from the central bank. In a second step, war loans were issued to fund the short-term government debt (Balderston 2012; Hardach 1977, pp. 139-173; Soutou 1991). The peculiarities which made the financial mobilization in Germany appear rather complicated were, first, the federal structure of the financial system with its careful balance of responsibilities and resources between the central government and the states, and secondly the attempt to maintain the appearance of the gold standard while at the same time allowing the government unlimited access to the central bank.

The German empire that was founded in 1871 was a federation of 25 member states varying widely in size. Prussia, by far the largest state, accounted for 60 per cent of the

[1] I wish to thank Carl-Ludwig Holtfrerich for his comments and assistance.

German population in 1871. The major part of government responsibilities and finances was attributed to the states and local authorities. Direct taxes, especially income taxes, were reserved for the states and local authorities. The imperial budget relied on import duties, some indirect taxes and transfer payments from the states. In 1913 an exceptional property levy for the imperial government, the "defence levy" (*Wehrbeitrag*), was introduced to finance a new expensive armament programme (Witt 1970, pp. 17-23, 356-376).

The administration and financing of the army and the navy were shared between the central government and the states. The imperial army (*Reichsheer*) consisted of contingents from the states. The four larger states, Prussia, Bavaria, Saxony and Wurttemberg, had their own military organisation; the contingents of the smaller states were administered by Prussia. Only the navy and the colonial troops were imperial organizations. The costs of the military, both army and navy, were carried by the imperial government. Military expenditure was by far the most important item in the imperial budget; it accounted for 90 per cent of all expenses in 1913 (Witt 1970, p. 380).

The constitution of 1871 authorized the central government to finance extraordinary expenses by credits. In 1889 a formal rule for the extent of deficit spending in the imperial budget was established. The ordinary budget for the recurrent activities of the government was to be financed by duties, taxes or transfer payments from the states. Unusual expenses, essentially investments and war expenditure, were to be entered into an extraordinary budget which was to be financed by loans. The argument was that future generations would benefit from an investment or from a successful war, and thus should contribute to the interests and repayment of the loan that had financed the project (Witt 1970, p. 37).

The argument may need a clarification. The economic burden of a war falls always on the present generation in terms of lost resources. The alternative between taxes and credits influences not the inter-temporal, but the inter-personal distribution of the economic burden of war. Credit financing means that the greater proportion of the present expenditure is financed by the wealthy classes who have the money to invest in government bonds. Later on the government will repay the loans from revenue to which all classes contribute by direct or indirect taxes.

In Germany the poor tax base of the central government combined with large military expenditure resulted already before the war in the imperial budget accumulating a considerable deficit, which was financed by placing bonds (*Reichsanleihen*) on the capital market. At the end of 1913 the central government debt was 4.9 milliard (thousand million) mark (Roesler 1967, p. 195).

The early plans for financial mobilization in the eventuality of a war provided for a combination of a large cash reserve, taxes and loans (Reichsarchiv 1930 a; Reichsarchiv 1930 b). After the German-French war of 1870-71 the new German empire exacted from France reparations of 4 milliard mark. Of this sum, 120 million mark were set aside as imperial war chest (*Reichskriegsschatz*). The assumption was that the money would be used in the initial phase of a military mobilization for the maintenance of the soldiers, for arms and ammunition, for transport and other costs. Further costs of a war would be financed by a combination of taxes and loans. The imperial war chest, 1200 sturdy wooden boxes filled to the brim with German gold coins, was stored since 1874 in the old citadel in the town of Spandau, now a district of Berlin.[2]

From a modern perspective, the imperial gold hoard evokes a tale of very ancient times, something like Richard Wagner's *Rheingold* opera, with the difference that the scenery was not the Rhine but the small river Havel which surrounded the citadel in Spandau, and that the glittering gold was guarded not by a greedy gnome but by the Prussian army. In the 1870s, however, a cash reserve in gold seemed quite reasonable as gold coins were at the time an important part of the money circulation (Deutsche Bundesbank 1976, pp. 14-16).

Toward the end of the nineteenth century the preparations for financial mobilisation were updated. At a conference in April 1891 the imperial government discussed a systematic plan for fiscal and monetary policies in the contingency of war. It was now assumed that from the beginning the government would rely primarily on the central bank to finance war expenditure. A comprehensive programme of financial mobilisation was formulated which combined fiscal and monetary policies.

If the central bank became in the case of a war the mainstay of government finance, the gold standard would have to be suspended. The new German empire had adopted a gold standard in 1871. In 1875 the central bank (*Reichsbank*) had been founded. Its note issue had to be covered by at least one third in gold. The central bank was also authorized to include treasury notes (*Reichskassenscheine*) in its gold reserve. Diluting the gold reserve with government paper money was obviously a violation of the gold standard rules. But in practice the clause was not really important as the volume of treasury notes in circulation was strictly limited to 120 million mark. The remainder of the note issue, exceeding the

[2] Reichskanzleramt an die Rendantur des Reichs-Kriegsschatzes, 5 May 1874. Bundesarchiv Berlin (BArch) R 2101 / 1.

primary reserve of gold and treasury notes, was to be covered by a secondary reserve of commercial bills. If the note issue exceeded the volume defined by the gold reserve the bank had to pay a special bank note tax.[3]

In the programme for financial mobilization the central bank was authorised to accept in the contingency of war short-term government paper as an equivalent of commercial bills in its secondary reserve. The short-term debt of the government would later be consolidated by one or more long-term loans.

To limit the demand for central bank credits, new “loan banks” (*Darlehnskassen*) were to be established. The institution of these loan banks had a history. They had been founded by the Prussian government during the credit crises caused by the revolution of 1848 and the civil war of 1866, and the North German Federation had established loan banks in the crisis at the beginning of the French-German war of 1870-71 (Zilch 1987). The new loan banks would be owned and operated by the central bank. Their function was to provide credit to business, state governments and local authorities, covered by securities or goods as collateral. They would issue their own loan bank notes (*Darlehnskassenscheine*), which circulated at par with the central bank notes. In fact the loan banks were a flexible shadow central bank. They extended credit that did not appear in the balance sheet of the central bank, and their note issue was not subject to any reserve requirements. The notes of the loan banks could be used by the central bank together with gold and treasury notes as a part of the primary reserve. Thus the central bank’s money supply was freed from any constraints, either by gold or by the volume of suitable commercial bills. In the event of financial mobilization gold payments would be suspended, and a compulsory exchange rate of the mark against gold and foreign currencies would be declared.[4]

As the central bank was to provide the money for the increased government expenditure in the case of a military mobilization, the function of the imperial war chest in Spandau changed. It would not be used for cash payments, but would be transferred to the central bank to increase its gold reserve, in exchange for the mark equivalent. It was specified that it was not necessary to haul the 1200 boxes full of gold into the vaults of the central bank in Berlin; only the keys to the massive tower of the citadel where the treasure was kept would be handed over.[5] In connection with the armament programme of 1913 it was decided to increase the imperial war chest in Spandau, now a potential central bank

[3] Bankgesetz. Vom 14. März 1875. Reichsgesetzblatt (RGBl.) 1875, pp. 177-198.

[4] Konferenz über die Beschaffung des Geldbedarfs im Kriegsfall, 14 April 1891. BArch R 2 / 275.

[5] Konferenz über die Beschaffung des Geldbedarfs. BArch R 2 / 275.

reserve, by another 120 million mark in gold. In addition, the government was to accumulate a cash reserve of 120 million mark in silver coins (Zilch 1987, pp. 120-122).

Following the conference of April 1891, the Imperial Treasury (*Reichsschatzamt*) formulated in June 1891 a set of draft laws which would be enacted in case of a war. The draft laws authorized the imperial government to borrow one milliard mark or more either from the central bank or on the capital market, and they created the note-issuing loan banks. The gold standard rules were modified to permit an unlimited credit expansion. The central bank was authorized to add the loan bank notes to its gold reserve, and to accept short-term treasury certificates (*Reichsschatzanweisungen*) for its secondary reserve. The tax on an excessive bank note circulation was abolished.[6] It was obvious that in the case of a war the gold standard would become a form without substance. Nevertheless the central bank recommended that the modifications of the bank law of 1875 should be kept to a minimum, so that the confidence in the German currency was maintained.[7]

In later years, more details were added to the programme for financial mobilization. The planned cash requirements in case of a military mobilization were adjusted to the increasing size of the armed forces and the development of expensive new military technology. Plans were drafted for the location of the loan banks in connection with the regional central bank branches; the relation between the central bank and the loan bank system was described as an "organic connection".[8] Millions of central bank notes, loan bank notes and treasury notes were printed in advance to be ready for the days of financial mobilization.[9]

To improve the government's access to the capital market the central bank suggested in 1906 that a new type of short-term state paper should be issued in the case of a war, the treasury bills (*Reichsschatzwechsel*). As long as both kinds of short-term government paper remained in the portfolio of the central bank, there would be no difference. But the central bank argued that short-term government paper in the form of a bill was easier to place on the money market as there was a long tradition of commercial bills. The existing short-

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[6] Reichsschatzamt an den Preussischen Finanzminister, 5 June 1891. BArch R 2 / 274.

[7] Reichsbank-Direktorium an den Reichskanzler, 17 April 1912. BArch R 2 / 41282.

[8] Die Lage der Reichsbank im Kriegsfalle und die Einführung des Zwangskurses. Undated memorandum. BArch R 2 / 41285.

[9] Besprechung über die Vorbereitung finanzieller Massnahmen für den Fall einer Mobilmachung, 1 April 1901. BArch R 2 / 41275; Reichsdruckerei an das Reichsschatzamt, 20 January 1906.BArch R 2 / 41278..

term treasury certificates (*Reichsschatzanweisungen*) were less well known and might be not so easy to sell in large quantities.[10]

As international tensions increased after the turn of the century, an intense public debate on financial mobilization came up in Germany. Experts and journalists discussed in books and articles different methods of financial mobilization. The outcome of the debate was inconclusive. Some experts advocated credit financing of war expenditure, others recommended a relying on taxes (Holtfrerich 1986, pp. 97-114). The debate involved some prominent economists of the time, but it had no influence on government policy. The programme for financial mobilization decided upon in 1891 remained essentially unchanged until it was implemented in August 1914.

## III. The illusion of a short war

When the German armies swept into Belgium on August 4, 1914, the imperial diet (*Reichstag*) voted unanimously the package of laws that had been prepared for financial mobilization. The imperial government was authorised to contract credits up to 5 milliard mark to finance the war; the limit could be extended if necessary.[11] As planned, a new type of government paper was introduced, the treasury bills (*Reichsschatzwechsel*).[12] The central bank was authorised to accept treasury bills and short-term treasury certificates as secondary reserve.[13]

The loan banks were established as had been planned. They were to provide credit to business, but also to states and local authorities so that the central bank could concentrate on imperial government finance. The loan banks would issue their own money, the loan bank notes. These new notes were declared to be admissible as primary reserve of the central bank, together with gold and treasury notes (*Reichskassenscheine*).[14]

The central bank had already suspended specie payments on July 31, and the new legislation confirmed this decision. Central bank notes were no longer convertible into

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[10] Reichsbank-Direktorium an das Reichsschatzamt, 23 July 1906. BArch R 2 / 41279; Reichsbank-Direktorium an das Reichsschatzamt, 4 October 1906. BArch R 2 / 41279.

[11] Gesetz, betreffend die Feststellung eines Nachtrags zum Reichshaushalt für das Rechnungsjahr 1914. Vom 4. August 1914. RGBl. 1914, pp. 345-346.

[12] Gesetz, betreffend die Reichschuldenordnung. Vom 4. August 1914. RGBl. 1914, pp. 325-326.

[13] Gesetz, betreffend die Änderung des Bankgesetzes. Vom 4. August 1914. RGBl. 1914, p. 327.

[14] Darlehenskassengesetz. Vom 4. August 1914. RGBl. 1914, pp. 340-345.

gold. The special tax on note circulation which exceeding the limit defined by the gold reserve was suspended.[15] But the gold reserve was still considered as an important indicator of Germany's economic and financial power. The imperial war chest had already been transferred to the central bank on August 2, 1914, in exchange for central bank notes, to increase the gold reserve.[16]

The first war loan was issued in September 1914. It amounted to a volume of 4.5 milliard mark; the interest rate was 5 per cent, which was relatively high in comparison with pre-war government bonds. Newspaper reports suggested that individuals who did not subscribe to the war bond might later regret it. Its interest rate was attractive, and as victory seemed near, this might be the only war bond that would be issued.[17]

The financial mobilization of August 1914 had been planned for a short war. The strategic plan, prepared by the Prussian general staff since 1905, was to strike a decisive blow against France, attacking through neutral Luxemburg and Belgium, before Russia could mobilize its vast army. When Germany opened hostilities together with its ally Austria-Hungary in the summer of 1914, the military leadership and the government assumed that this strategy was still realistic. France, together with Belgium and the United Kingdom, would be defeated within a few weeks, and then the German armies together with Austria-Hungary would turn against Russia; in a few more weeks, the war would be over (Janz 2013, pp. 31-32, 71-72; Münkler 2013, pp. 71-90; Leonhard 2014, pp.52-53).

A short war, ending with a victory of the Central Powers, meant that the increase of the public debt would be limited, that it could be paid back with reparations from the vanquished countries, and that the suspension of the gold standard was only temporary. A comparison of military strength and the economic resources of the major European powers suggests, however, that the short-war strategy was not a plan but rather a desperate gamble (Strachan 2012).

## IV. Financial mobilisation in a war of attrition: expenditure, taxes and credits

When the German invasion was stopped by French and British forces near the Marne in early September 1914, it was obvious that the illusion of a fast victory had faded. In Germany neither the military command, nor the government had a second plan. The only

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[15] Gesetz, betreffend die Reichskassenscheine und die Banknoten. Vom 4. August 1914. RGBl. 1914, p. 347.

[16] Der Reichskanzler an den Bundesrat und an den Reichstag, 2 August 1914. BArch R 2 /41134.

[17] Reichsbank, Statistische Abteilung, Kriegsanleihen. BArch R 2501 / 539.

option was to hold on as long as there were soldiers to fight and a labour force to support the armed forces, in the hope that attrition compel the opponents to ask for peace (Janz 2013, pp. 81-90; Münkler 2013, pp. 158-176; Leonhard 2014, pp. 175-183).

In late September 1914, central bank president Havenstein reported in the supervisory committee of the bank (*Reichsbankkuratorium*) on the financial situation. In his opinion financial mobilization had proceeded according to the plan. The central government had obtained the necessary funds to finance the war effort, and the war loan had been a great success; its proceeds were higher than the short-term debt of the government. Havenstein was surprisingly candid; he admitted that the initial military strategy had failed and that a long war was to be expected. He was optimistic, however, that the financial mobilization which had been successful until then would also be adequate for a long war.[18]

The government decided, in accordance with the view of the central bank, that the system of financial mobilization which had been prepared for a short war should not be changed when the conflict turned into a war of attrition. But when the secretary of the treasury Karl Helfferich invited the finance ministers of the states in July 1915, the attitude was much less optimistic. The secretary still believed that the war would end with a German victory, if all went well before the end of the year, or at the latest after the winter of 1915-16. For the duration of the war, government expenditure could easily be financed with the combination of taxes, short-term credits and long-term loans. It was after the war that the real problem of government finance and government debt would appear. War expenditure had increased beyond all forecasts. There would be a huge government debt at the end of the war, possibly 60 milliard mark. It was not to be expected that Germany could obtain reparations that were large enough to pay back the public debt; there had to be a domestic solution. Helfferich admitted that he had no plan how to pay back the debt. But he suggested that the states, which received the important direct taxes on income and property, would have to support the central government whose tax base, mainly indirect taxes, was weak. The finance ministers of the states promised that a compromise would be found, but insisted that the problem of the public debt had to be kept secret.[19]

The secretary of the treasury did his best to conceal the problem of the rapidly increasing government debt when he presented the budget for 1915-16 in the parliament (*Reichstag*).

[18] Rede von Reichsbankpräsident von Havenstein in der Sitzung des Reichsbankkuratoriums, 25 September 1914. BArch R 43 / 2398.

[19] Aufzeichnung über die vom Staatssekretär des Reichsschatzamtes veranlasste Besprechung von Finanzfragen des Reichs mit den einzelstaatlichen Finanzministern, 14 July 1915. BArch R 2 / 41231.

Helfferich announced that the government did not intend to introduce new taxes to finance the war. The war expenditure in the extraordinary budget would be financed by credit. In an often quoted speech in August 1915 the secretary of the treasury promised that the German government debt would be paid back after the war with reparations from the vanquished enemies.[20]

As the war dragged on, government expenditure increased far beyond Helfferich's estimates of July 1915. In the fiscal year from April 1913 to March 1914, the total expenditure of the *Reich*, ordinary and extraordinary budget together, had been 3 milliard mark. In the fiscal year 1914-15, the first budget that was influenced by the war, expenditure increased to 9 milliard mark. Expenditure then rose rapidly in the second war budget 1915-16 to 26 milliard mark, in the third war budget 1916-17 to 28 milliard mark and in the fourth war budget 1917-18 to 52 milliard mark. According to official statistics the expenditure in the fiscal year 1918-19 was reduced to 44 milliard mark. This may be due to the fact that the war ended in November 1918. However the figure has been criticised as unreliable, and the increase of the government debt suggests that the expenditure in 1918-19 may have been higher than declared (Balderston 1989, pp. 224-225). According to official statistics, altogether 159 milliard mark were spent by the imperial government from April 1914 to March 1919.[21]

Only a small share of wartime government expenditure came from the ordinary budget which had to be financed by taxes and other regular income. The ordinary budget accounted for only 13 per cent of total expenditure from April 1914 to March 1919, the extraordinary budget for 87 per cent. Even the modest aim to balance expenses and revenue in the ordinary budget was not easy to achieve. Military expenditure, which had been the largest item in the ordinary budget before the war, was shifted completely to the extraordinary budget. But as government debt increased, the rapidly rising interest payments took the place of military expenditure as the main part of ordinary expenditure. The imperial government hesitated to introduce new taxes as resistance was to be expected from the taxpayers, and even more from the states. The war had shifted many responsibilities from the states to the central government, and the states suspected that if

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[20] Helfferich, Rede zum Nachtrag zum Haushalt für 1915/16, 14 August 1915. Verhandlungen des Reichstags. 13. Legislaturperiode, 2. Session. Bd. 306. Stenographische Berichte, p. 224 A.

[21] Reichsfinanzminister Schiffer; Die Finanzen des Deutschen Reichs in den Rechnungsjahren 1914 bis 1918. Denkschrift, 12 March 1918. Verhandlungen der verfassungsgebenden Deutschen Nationalversammlung, Bd. 135. Anlage 158, pp. 99-114; Roesler 1967. pp. 195-201.

the central government introduced new taxes on income or property, the centralisation of power would become even more pronounced.[22]

In January 1916 chancellor Bethmann Hollweg warned in a secret memorandum that the budget situation was deteriorating rapidly. New taxes were inevitable to finance the interest payments in the ordinary budget. The alternative, borrowing money to pay for interests on government debt, would be contrary to established fiscal rules.[23] In June and July 1916 the *Reichstag* introduced a war profit tax for corporations and individuals, and a sales tax. In addition several smaller indirect taxes were raised or newly introduced. The war profit tax was a compromise between the central government and the states. It was declared as a single levy on profits earned during the war, similar to the defence levy (*Wehrbeitrag*) in 1913, and was not to be a precedent for a regular income tax. But as the war continued, the profit levy was renewed in 1917 and 1918, so that there was in fact a new central government tax on profits and property. The sales tax was introduced with a very low tariff in 1916, and was expanded in 1918; it has since then become a permanent feature of the German tax system. New taxes or tax increases were imposed on tobacco, coffee, tea, beer, wine, sparkling wine, mineral water, coal, and railway transport. Some of the new indirect taxes merely shifted payments between the ordinary and extraordinary budgets. The coal tax and the railway tax reduced the deficit of the ordinary budget, but raised the deficit of the extraordinary budget as they were contained in the prices which the government paid for war supplies (Roesler 1967, pp.189-194).

The financing of extraordinary expenditure underwent no changes after September 1914. The government sent a steady stream of treasury bills and treasury certificates to the central bank to obtain the necessary means of payment. A large volume of treasury bills was placed on the money market. But a similar amount of short-term government paper remained in the portfolio of the central bank, increasing the supply of central bank money in cash or sight deposits.

War bonds (*Kriegsanleihen*) were regularly floated to consolidate the short-term government debt. Following the example of the first war loan in September 1914, two loans were issued every year in March and September, with the ninth and last war loan in September 1918. Each loan was advertised in a vast propaganda campaign. The bonds were offered to the public not only by the commercial banks, the usual brokers for

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[22] Aufzeichnung über die vom Staatssekretär des Reichsschatzamtes veranlasste Besprechung von Finanzfragen des Reichs mit den einzelstaatlichen Finanzministern, 14 July 1915. BArch R 2 / 41231.

[23] Reichskanzler, Memorandum, 31 January 1916. BArch R 2 / 41232.

securities in Germany, but also by savings banks, credit cooperatives and post offices. The propaganda was quite successful. The sales of war loans increased from one million subscriptions in September 1914 for the first war loan to a maximum of seven million subscriptions for the sixth loan in March 1917. Compared with the number of households in Germany, which had been 14 million in 1910, the number of subscribers was impressive (Statistisches Bundesamt 1972, p. 98). People who had never before bought securities invested their savings in war loans. Since September 1917 the acceptance of the war loans declined; in September 1918 there were only three million subscriptions (Reichsbank 1919, p. 207).

In spite of the wide distribution of war bonds, most of the financial contribution was received from investors who were at the top of the income and wealth pyramid. For statistical purposes the subscriptions can be divided into three classes, a lower class of amounts up to 1000 mark, a middle class from 1100 to 100000 mark, and an upper class of 100100 mark and more. The lower class, 81 per cent of all subscriptions, contributed 10 per cent to the total yield; the middle class, 19 per cent of the subscriptions, contributed 46 per cent; and the upper class, 0.2 per cent of the subscriptions, contributed 44 per cent (Reichsbank 1919, p. 207). When the treasury bills placed on the money market are included, the concentration at the top was even more pronounced. The investors assumed that after the war they would be reimbursed by the government with revenue from taxation or reparations.

The first four loans until March 1916 raised more money than was necessary to consolidate the volume of treasury bills and treasury certificates. From September 1916 onwards, however, the proceeds from the loans were not sufficient to consolidate the short-term debt. About one half of the short-term debt was placed on the money market, the other half remained in the portfolio of the central bank. This was a significant difference between financial mobilization in Britain and in Germany. In the United Kingdom the money market absorbed more treasury bills and thus contributed a greater share to financing the war (Balderston 1989, pp. 224-231, 241-242). In December 1918 the total central government debt was 135 milliard mark. The share of long-term loans, including a small amount of medium-term treasury certificates, was 80 milliard mark, the share of treasury bills on the money market was 28 milliard mark and the floating debt in a strict definition, the share of treasury bills or treasury certificates in the portfolio of the central bank, was 27 milliard mark.[24]

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[24] Stand der fundierten Kriegsschuld vom 31. Dezember 1918. BArch R 2 / 1895; Roesler 1967, p. 88.

The change in the structure of government debt was apparently a reaction to the long duration of the war. One motive may have been a greater liquidity preference. When investors expected that the end of the war was near, they may have preferred short-term paper, or even cash, which they could use immediately to satisfy the pent up demand for consumption or investment goods. But the difference in the liquidity of the financial assets was not great. The war bonds were formally a long-term investment, usually for ten years. But in fact they were not so different from a liquid asset. They could be used as collateral for loan bank credits, and since 1916 the government accepted war bonds as payment for the war profit tax. Treasury bills could be changed at the central bank in unlimited amounts into cash or sight deposits.

More important may have been the declining confidence of investors in the financial standing of the government. As the public debt increased, the early promise that it would be easily repaid after the war by reparations from the enemy became implausible. The government knew since July 1915 that Germany could not expect sufficient reparations to repay the debt, and that a domestic solution would have to be found.[25] The public seems to have had similar doubts, perhaps somewhat later. The focus of the propaganda campaigns for the war bonds shifted from reparations to domestic economic stability. The central bank explained in its propaganda brochures for the sixth war loan in March 1917 that Germany's national wealth and national income were large enough to guarantee repayment of public debt; reparations would not be needed.[26] With declining confidence in long-term government bonds investors may have preferred short-term paper which the central bank always accepted at its full value, or the even more liquid sight deposits and cash. Of course, this would not insure them against inflationary and currency depreciation.

The fiscal policy of states and local authorities during the war was similar to the central government, though on a smaller scale. In March 1919 the total debt of states attained 23 milliard mark (Deutsche Bundesbank 1976, p. 313). States and local authorities borrowed heavily from the loan banks (Balderston 1989, p. 225). The loan banks had been primarily established to finance private business, and the financing of state governments or local authorities was only a secondary motive. But the roles were soon reversed. There was little demand from private business for credits; the big industrial companies producing for the

[25] Aufzeichnung über die vom Staatssekretär des Reichsschatzamtes veranlasste Besprechung von Finanzfragen des Reichs mit den einzelstaatlichen Finanzministern, 14 July 1915. BArch R 2 / 41231.

[26] Reichsbank, Material zum Werbevortrag für die sechste Kriegsanleihe. BArch R 2501 / 397.

war were financed by generous government contracts. The loan banks granted 84 per cent of their loans to states and local authorities (Roesler 1967, p. 215).

## V. The economic burden of the war

In a war of attrition, economic mobilization became essential for military power. In Germany, as in other belligerent countries, economic mobilization was organised by a combination of profit incentives and planning. The government paid high prices for arms, ammunition and other supplies. But the conversion of the economy from civil to military production relied not only on the market mechanism. From the onset of the war a planning system was established. It began with the control of strategic imports and with price limits for the necessities of life. When the conflict turned into a long war of attrition, the planning system was expanded. After 1916 most sectors of the German economy were subject to price controls and rationing. Wages were negotiated between industry, labour and government (Feldman 1966; Hardach1977, pp. 55-75).

The transfer of millions of men from civilian employment to the armed forces, the shortage of raw materials, the reduction of investment and other restraints led to a decline in real national product. Net national product for Germany in 1913 has been estimated at 52 milliard mark (Hoffmann / Grumbach / Hesse 1965, pp. 825-826). According to recent calculations real national product decreased in 1914 to 90-92 per cent of the pre-war level of 1913, in 1915 to 81-85 per cent, in 1916 to 76-81 per cent, in 1917 to 74-79 per cent and in 1918 to 71-77 per cent. A considerable part of the reduced production was consumed and destroyed by the war. War-related production amounted to 15 per cent of the national product in 1914, to 35-37 per cent in 1915, also to 35-37 per cent in 1916, and to a maximum of 53-57 per cent in 1917. Thereafter the impoverishment of the country made it impossible to maintain this high rate of economic mobilization, and the share of war-related production in 1918 dropped to 36-39 per cent (Ritschl 2005, p. 44).

The relation between public debt and gross domestic product, a popular indicator for the burden of the public debt, is difficult to estimate for the German economy during the First World War. In our time the media tell us day for day the exact relation between public debt and gross domestic product in each of the 27 member states of the European Union, and beyond. For Germany in 1918 we have neither a reliable indicator for the total public debt, nor for gross domestic product. Total public debt, including the central government, the states and local authorities, was approximately 160 milliard mark in December 1918; of this total, the debt of the central government was 135 milliard mark and the debt of states and local authorities 25 milliard mark.[27] This would be 308 per cent of net national product in 1913, indicating a very heavy burden indeed. But if we take into account the higher price level, the burden is much reduced. In December 1918 the wholesale price index was 245 per cent of the pre-war level of 1913. If the public debt at the end of 1918 is deflated by this indicator, the burden is reduced to 126 per cent of the net social product of 1913 (Hoffmann / Grumbach / Hesse, pp. 825-826; Statistisches Reichsamt 1925, p. 16).

## VI. A legacy of financial mobilization: Inflation

Financial mobilization in Germany, with its strong reliance on the central bank, served its purpose to provide sufficient money for the war. But it caused the collateral damage of a suppressed inflation. Since August 1914 government demand for military supplies competed with the demand for consumer goods and investment goods within a declining gross national product.

The major cause of inflation was government deficit spending, financed by the central bank. The rising volume of short-term government paper in the portfolio of the central bank exerted a persistent inflationary pressure. Yet the central bank and the imperial government attempted throughout the war to convince the public at home and abroad that the changes in the bank law were only marginal, and that monetary stability was not impaired.

An important element in the monetary propaganda campaign was the gold reserve. The central bank, supported by the imperial government, made serious efforts to increase its gold hoard. A large part of the gold coins in circulation were changed into central bank notes. The gold reserve which had been 1.6 milliard mark in June 1914 increased to a maximum of 2.6 milliard mark in 1917. Thereafter losses were larger than gains, as the central bank had to part with a considerable chunk of its gold to finance necessary imports. Yet in November 1918 the gold stock was still higher than before the war, 2.3 milliard mark. Also, the government and the central bank urged the public to use sight deposits instead of cash, so that the relation between the gold reserve and the circulation of central bank notes would look better. In November 1918 the gold reserve was still 13 per cent of the note circulation (Roesler 1967, pp. 208-210). The gold in the vaults of the central bank was of no importance for the money supply during the war. But in the monetary

[27] Stand der fundierten Kriegsschuld vom 31. Dezember 1918. BArch R 2 / 1895; Roesler 1967, p. 88.

propaganda the gold reserve was presented as an indicator of Germany's financial strength, and a guarantee that the country would return to the gold standard after the war.

There are several indicators to measure the extent of monetary expansion during the war: cash circulation, the monetary base or the money supply. Before the war cash circulation consisted of a medley of coins, central bank notes, notes of the regional note-issuing banks and treasury notes. Only gold coins, until 1907 certain silver coins and since 1910 central bank notes were legal tender; but all kinds of coins and paper money circulated at par. At the end of 1913 the total cash circulation was 6.6 milliard mark, with central bank notes accounting for 39 per cent of the total. Since August 1914 the new loan bank notes augmented the cash circulation, while gold coins disappeared. At the end of 1918 the cash circulation had increased to 33.1 milliard mark, or 502 per cent of the level of 1913. Central bank notes and loan bank notes, the typical war money, accounted for 98 per cent of the total money circulation (Statistisches Reichsamt 1925, pp. 45-46).

Since the central bank acted as fiscal agent for the government, the monetary base (in modern definition M 0), which included cash, plus deposits with the central bank and the regional note-issuing banks, increased faster than the cash circulation. The monetary base was 7.2 milliard mark at the end of 1913 and 43.6 milliard mark, or 606 per cent of the level of 1913, at the end of 1918 (Holtfrerich 1986, pp. 50-51).

The main reason for the monetary expansion was government credit, not the private sector. Therefore the money supply (M 1), which included the monetary base and sight deposits with commercial banks and the postal giro system, increased not as much as the cash circulation or the monetary stock. The money supply has been estimated at 17.0 mark at the end of 1913 and 74.8 milliard mark, or 440 per cent of the level of 1913, at the end of 1918 (Holtfrerich 1986, pp. 50-51).

In an economy with functioning markets, the inflationary pressure would drive up prices, and the value of the currency on foreign exchange markets would decline. In Germany's war economy, however, prices and exchange rates were controlled. A law authorising the state governments to decree price ceilings was passed by the parliament (*Reichstag*) on August 4, 1914 together with the laws on financial mobilization.[28] In the following years the controls were extended. Price ceilings, rationing and foreign exchange controls worked reasonably well to control inflation during the war. Only a modest rise of the price level and of the exchange rate of the mark against more stable currencies was permitted, so that the inflationary pressure was not visible to its full extent. In November 1918 the wholesale

[28] Gesetz, betreffend Höchstpreise. Vom 4. August 1914. RGBl. 1914, pp. 339-340.

price index of the mark was 234 per cent of the pre-war level of 1913; the official dollar exchange in rate Berlin was 177 per cent of the pre-war gold standard parity (Statistisches Reichsamt 1925, pp.6, 16). The inflationary pressure was more visible in black market prices, which were considerably higher than the official prices. The controls were not too rigid, and with so much money sitting idly in cash hoards or bank accounts it was not surprising that some people could afford to pay a premium for extra rations (Hardach 1977, pp. 112-120).

It was to be expected that when the war was over, and when the system of rationing and price controls was dismantled, individuals and corporations would use a large part of their monetary assets to satisfy the pent-up demand for consumer goods and investment goods. Thus after the war both fiscal and monetary policies faced difficult decisions if inflation was to be kept under control.

## VII. The limits of financial mobilization: foreign trade

Before the First World War, Germany was closely integrated into an expanding world economy (Burhop 2011, pp. 101-117). In 1913 merchandise exports amounted to 10 milliard mark, merchandise imports to 11 milliard mark. The deficit in the trade balance and capital exports were financed by a surplus in services, including income from foreign assets (Hoffmann / Grumbach / Hesse 1965, p. 817).

When the war began, the superior British navy immediately blockaded the ports of the Central Powers and tried to interrupt direct overseas trade. Germany needed imports of strategic raw materials, food and other products which contributed to the war effort, and exports were necessary to earn foreign exchange. The German government reacted in various ways to the blockade; it diverted foreign trade to neighbouring neutral countries, and organised a transit trade with more distant countries through neutral ports. At first the blockade was not very efficient, but over the years it tightened and reduced seriously the foreign trade of the Central Powers (Hardach 1977, pp. 11-34; Lambert 2012).

Within the limits set by the blockade, financing an import surplus became an important aspect of financial mobilization. The imperial government sought to obtain as many imports as could be smuggled through the blockade to support the war economy. At the same time exports were curtailed not only by the blockade but also by the shortage of labour and the conversion of industry to war production. The result was a growing trade deficit. Government agencies, the central bank and private business cooperated to obtain credits in neutral countries, or to sell securities in mark or foreign currencies to neutral investors. For two years Germany was surprisingly successful in attracting capital imports. Apparently the monetary propaganda campaign, with the central bank's gold reserve as main argument, impressed foreign investors.

When the war lasted much longer than promised, the financial situation deteriorated rapidly. Starting in 1916 foreign investors increasingly lost confidence in the German currency. In August 1916 the central bank informed the government that the financing of imports was becoming more and more difficult. Import prices went up due to the depreciation of the mark; the sale of securities in neutral countries declined; and foreign exchange earnings from exports dwindled. Imports would have to be strictly limited.[29] A month later the central bank repeated its warning. The lack of foreign exchange necessitated a serious reduction of imports. Exports should be increased to earn more foreign exchange; but this would conflict with the demand of the military.[30]

As German securities became difficult to sell in neutral countries, the government planned to seize private portfolio assets in foreign currencies; the owners would be compensated in mark.[31] The central bank organized an inquiry into foreign assets held by German corporations or individuals. It was estimated that in July 1914 the volume of foreign portfolio investment had been 20 milliard mark. Until September 1916 an estimated four milliard mark of securities and shares had been sold, leaving a volume of 16 milliard mark. A large part of the assets was locked in enemy countries, or was invested in Austria-Hungary and Germany's other allies where it was not of much help. From October 1916 to the end of the war only two milliard mark of securities were sold.[32]

In a meeting of government officials and central bank officials in June 1917 Germany's foreign trade situation was described as extremely serious, heading towards disaster. The central bank saw no solution for the crisis. It offered mark in neutral countries, though this accelerated the depreciation of the currency, and it had started to sell a part of its cherished gold reserve to finance imports.[33] In addition to the blockade, financial constraints contributed to the decline of Germany's foreign trade.

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[29] Der Präsident des Reichsbank-Direktoriums an den Staatssekretär des Schatzamtes, 11 August 1916. BArch R 2 / 41671.

[30] Reichsbank-Direktorium an den Staatssekretär des Schatzamtes, 15 September 1916. BArch R 2 / 41672.

[31] Bekanntmachung über die Anmeldung von Wertpapieren. Vom 23. August 1916. RGBl. 1916, p. 952.

[32] Deutscher Besitz an ausländischen Wertpapieren. Undated memorandum. BArch R 2501 / 6664.

[33] Aufzeichnung über eine Besprechung im Reichsamt des Innern, 19 June 1917. BArch R 2 / 41673.

Germany supported its weaker allies Austria-Hungary, Bulgaria and Turkey with credits, though not to the same extent as Britain and later the USA did for their allies (Fisk 1924). The German government expected that the credits should be used to buy necessary supplies in Germany. But Austria-Hungary, Bulgaria and Turkey used the German credits also for purchases in neutral countries, or sold mark amounts on neutral foreign exchange markets, thus depressing the exchange rate of the German currency.[34]

Both the blockade and financial constraints reduced Germany's foreign trade, but on balance the economy drew more heavily on foreign resources than at any previous time. German exports from August 1914 to December 1918 amounted to only 17 milliard mark. The reduction of imports was less severe; total imports during the war were 32 milliard mark (Hardach 1977, p. 32-33). In addition to its own trade deficit of 15 milliard mark Germany financed import surpluses of its allies of 5 milliard mark. The total deficit of 20 milliard mark was financed by gold transfers, sales of securities on neutral markets and credits in mark or foreign currencies.[35]

A special segment in Germany's foreign economic relations was the exploitation of the occupied territories. The occupied areas in Belgium, France, Russia and later Romania were forced to contribute to the German war effort. The military and civilian occupation authorities exacted food and other deliveries in kind for the armies, as well as monetary contributions (Zilch 1994). As the war dragged on, raw materials, machinery, railway stock and other capital goods were seized and transferred to Germany (Hautcoeur 2005; Liulevicius 2012; de Schaepdrijver 2012), The military authorities estimated the contributions exacted in the occupied territories at 3.5 milliard mark.[36] Belgium alone paid until March 1918 contributions of 1.5 milliard mark, and in addition industrial equipment worth 2.5 milliard mark was dismantled in Belgium and transported to Germany.[37]

## VIII. From war to peace

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[34] Der Unterstaatssekeretär in der Reichskanzlei an den Staatsseketär des Reichsschatzamtes, 1 September 1917. BArch R 2 / 41674.

[35] Reichsbank-Direktorium, Die deutsche Zahlungsbilanz und der Auslandskredit. Memorandum, 2 January 1919. BArch R 2 / 41674.

[36] Preussisches Kriegsministerium, Memorandum, 16 October 1918. BArch R 704 / 25.

[37] Reichsbankdirektorium an den Reichskanzler, 8 March 1918. BArch R 704 / 29.

Germany's economic war aims had always been ambiguous since September 1914, when chancellor Theodor von Bethmann Hollweg presented the first comprehensive war aims programme. A strong faction, supported since 1916 by the supreme military command, planned a vast continental economic bloc under German leadership. Negotiations with Austria-Hungary on the project of "Central Europe" (*Mitteleuropa*) as the core of this economic sphere continued until October 1918; in its last stage this was a bizarre performance, as the two empires planning the dominance of Europe were on the brink of military, political and economic collapse.

On the other side a more liberal faction insisted that Germany's relations with the multilateral world economy that had existed before the war were essential and should be resumed after the war. Since early 1918 the imperial government discussed together with representatives from big business, the leading corporations, the means to parry the Allied aims to isolate Germany after the war. It was agreed that the supply of raw materials and the access to export markets were essential to Germany's economic future (Soutou 1989).

The fiscal and monetary aspects of a reintegration into the world economy after the war were rarely discussed. Since 1917 there was a vivid public debate on financial demobilization, but it had apparently no echo in government circles (Holtfrerich 1986, pp. 119-137). Of the two institutions that had organized financial mobilization, the government and the central bank, only the latter seems to have been interested in planning fiscal and monetary policies for the post-war period.

In March 1918, when the German military command started a last desperate offensive in the west, central bank president Havenstein submitted a memorandum on the perspective of reintegrating Germany into the world economy after the war. Havenstein argued that the general military and economic exhaustion of the belligerent countries would make it necessary to conclude peace in the autumn of 1918. Contrary to the propaganda of the military leaders the central bank assumed not a victorious peace in which the Central Powers could dictate the conditions, but a negotiated peace in which both sides would have to make concessions. Large reparations from enemy countries to pay for the German government debt were not to be expected. But Germany should try to obtain moderate reparations in the form of raw materials or foreign exchange to balance a trade deficit which would persist for some years after the war.[38]

In July 1918 the central bank suggested again that after the war the German economy should be reintegrated into the world economy as soon as possible, and that it was

[38] Reichsbank-Direktorium an den Reichskanzler, 8 March 1918. BArch R 704 / 29.

therefore imperative to restore sound government finances and monetary stability. As a precondition for the stabilization of the currency, deficit spending should stop after the war, and the short-term government debt should be reduced. A sound fiscal policy required a reduction of expenditure and an increase of tax revenue.[39]

The imperial government did not discuss the central bank's proposals. But there were indications that the policy of austerity that the central bank recommended would not be easy to implement. The new Imperial Office of the Economy (*Reichswirtschaftsamt*), founded in 1917, suggested in October 1918 that after the war vast public work programmes had to be organised by the central government, states and local authorities in order to avoid unemployment and maintain political stability at any cost.[40]

The republican government which was established in Berlin on November 9, 1918 faced a difficult task. Military expenditure decreased sharply, but this did not imply a return to the pre-war situation. There were new responsibilities, with new expenses: pensions for disabled soldiers, widows and orphans, subsidies for business to support the transition from war to civilian production, the service of the huge government debt, new social policy programmes, and reparation payments. It has been estimated in retrospect that if the total expenditure of the central government, states and local authorities would have had to be financed from current revenue, a tax ratio of 35 per cent of national income would have had been necessary. This was more than the pre-war tax ratio in imperial Germany of approximately 15 per cent, but still a tax burden that would have been much lighter than that during the war (Haller 1976, p.139).

The government and the central bank which had cooperated closely during the war disagreed during the early post-war years on matters fiscal and monetary policy. The central bank recommended, as it had already done in the last months of the war, fiscal and monetary stabilization. President Havenstein warned repeatedly that the increase of the floating debt was alarming, and that it was the cause of an accelerating inflation. Public expenditure must be reduced, and tax revenue increased.[41] But the instable republican governments rejected fiscal and monetary stabilization and pursued instead from November 1918 to 1923 an inflationary policy.

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[39] Reichsbank-Direktorium an den Reichskanzler, 29 July 1918, BArch R 2 / 1849.

[40] Reichswirtschaftsamt, Memorandum, 29 October 1918. BArch R 43 / 2398 l.

[41] Reichsbank-Direktorium, Memorandum, 1 July 1919. BArch R 2 / 3889; Reichsbank-Direktorium an den Reichsfinanzminister, 18 July 1919. BArch R 2 / 1894; Reichsbank-Direktorium, Memorandum, 29 July 1919. BArch R 2 / 1894.

The main reason was the political situation. In the revolutionary situation of the time, faced by radical opposition from the right and from the left, the government refrained from expenditure cuts and massive tax increases. Inflation was a form of taxation that even weak governments could apply (Keynes 1971, p. 37). In addition there were economic arguments for inflation: it reduced the government debt, fostered production and employment, and it might convince the Allies that Germany could not pay large reparations. The central bank supported the government's inflationary policy, in spite of its repeated warnings. Until May 1922 the central bank was subordinated to the government, but even after May 1922, once the central bank was legally independent, its president Havenstein felt obliged to support the government. The central bank accepted a rising volume of short-term state paper and expanded the money supply (Holtfrerich 1986, pp. 119-180).

The fiscal and monetary policies from 1918 to 1923 were a deliberate choice and were not predetermined by the financial mobilization of 1914-18. Short-term central bank credits became a regular instrument to finance government expenditure; the demarcation line between ordinary and extraordinary expenditure was ignored; price ceilings were disregarded, and finally abolished. Without formal constraints, inflation accelerated into the hyper-inflation of 1922-23.

The inflationary policy ended in late 1923 in a monetary disaster. In retrospect, however, economic historians have argued that compared to a policy of fiscal austerity and currency stabilization, the inflation of the post-war years was the lesser evil. Inflation had a positive effect on production and employment, and this contributed to the political stabilization of the Weimar Republic in its early years. Germany avoided the world economic crisis of 1920-21, and contributed by its substantial imports to the general recovery (Holtfrerich 1986, pp. 197-220; Witt 1982). Financing the import surplus was easier than the central bank had assumed in March 1918. Germany obtained substantial capital imports from foreign investors who expected that the mark would in the end return to the pre-war dollar parity (Holtfrerich 1977).

## IX. Conclusion

The study of financial mobilization in Germany is not likely to change the established knowledge of the First World War. The war was decided, first of all, on the frontlines. Since July 1918 the armies of the Central Powers, Austria-Hungary, Bulgaria, Germany and Turkey, were retreating on all fronts (Leonhard 2014, pp. 845-938). Secondly, the cause of military defeat was economic collapse. Toward the end of the war the Central Powers were exhausted, both on the front, and on the home front where the supplies for the front were produced. No financial ingenuity could have changed that outcome.

Yet the study of financial mobilization adds some facets to our picture of the Great War. Germany's fiscal and monetary policies during the Great War have left their traces in a great number of documents, some of them published, others available in the archives. The internal documents are sometimes at variance with the view published by the government or the central bank. That is not surprising; after all, the business of financial mobilization was war. In some instances plans or decisions were kept secret, in others propaganda aimed at spreading optimism even though authorities thought, quite realistically, that a gloomy future lay ahead.

A programme for financial mobilization was planned in Germany since the 1890es. The main elements were the financing of war expenditure by credits, the role of the central bank as financial agent for the government, and a temporary suspension of the gold standard. The plan was drafted under the assumption of a short war. After the war, Germany would return to a balanced budget and to the gold standard; fiscal and monetary stabilization would be supported by reparations from the vanquished enemy.

Financial mobilization began in August 1914 as it had been planned, under the illusion of a short war. In September 1914 the short war strategy failed, and the conflict turned into a long war of attrition. The programme of financial mobilization was adapted to the new situation without fundamental changes. The war of attrition had many faces. There was the war which the soldiers fought in the trenches, at sea and in the air; the war on the home front where factory workers, miners and farmers produced a steady flow of supplies for the frontlines; and the war of the bureaucrats in the government and in the central bank who provided the money for the war. The combination of taxes, central bank credits and public loans provided for rapidly increasing government revenue. The state, represented by the three federal tiers of the imperial government, state governments and local authorities, never faced a shortage of funds. In a way the financial mobilization might be described as efficient, though this was not an efficiency to evoke hymns of praise: the aim was death, destruction and misery on an unprecedented scale.

A consequence of the German model of financial mobilization, with its heavy reliance on short-term credit, was a suppressed inflation which made the financial demobilization difficult. The central bank recommended for the post-war period a return to balanced budgets and to the gold standard, but the attitude of the imperial government seems to have been ambiguous.

Objectives, instruments and results of financial mobilization during the war were quite different from the fiscal and monetary policies that followed. The accepted view of a continuous inflation process in Germany from 1914 to 1923 is misleading. There were two inflations in Germany in the early twentieth century, not one: the suppressed inflation as a consequence of financial mobilization in 1914-18, and the post-war inflation as a deliberate reconstruction policy in 1918-23.

Beyond adding empirical details to our knowledge of the war, tracing the activities of those who shaped fiscal and monetary policies in Germany during the First World War may serve as an example for the futility of economic rationality in an irrational world.

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