THE GERMAN RAILWAYS -
THE ECONOMIC AND POLITICAL FEASIBILITY OF FISCAL REFORMS DURING THE INFLATION OF THE EARLY 1920S[*]

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ABSTRACT

The importance of fiscal policy for the inflationary process in Germany in the early 1920s has long been recognised, and at the same time the room for reform has been viewed as very limited. This paper will address this question anew by way of counterfactual analysis. Taking the railways - which contributed significantly to the Reich budget deficit - as an example, various areas of possible reform will be discussed on the basis of contemporary sources, including parliamentary debates. It will be argued that although the traditional opinion about the limits of political reform are confirmed, the economic room for manoeuvre was significantly greater than is often assumed.

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> Die Finanzen sind einer der besten Angriffspunkte
> der Untersuchung des sozialen Getriebes, besonders,
> aber nicht ausschließlich, des politischen.
>
> J.A. Schumpeter

`If the state did cause the inflation, it did so in self-defense´[1] is not only one of the well-known statements about the role of government in the inflationary process in Germany after the First World War but also respresentative of an influential, perhaps even dominant interpretation of the period. According to this view the economic and in particular political alternatives to the inflationary policies pursued were extremely limited.[2] However, the interest in alternatives and their possible impact on the development of the later Weimar Republic has never really ceased. Borchardt argued that the hyperinflationary experience had a restricting effect on the political room for manoeuvre for Brüning, the so-called inflation-fear debate.[3] Balderston has shown that the inflation affected capital markets negatively in the long-term.[4] Recently Niall Ferguson has combined these different criticisms of the inflationary policy and presented a revisionist counterfactual scenario describing general economic alternatives.[5]

Spurred by this renewed critical interest in the hyperinflation, this paper will attempt to examine one aspect of the revisionist thesis in detail, namely alternatives in fiscal policy. The Reich budget deficits generally, and the Reich´s railway deficits specifically, the economic room for manoeuvre will be assessed on the basis of present as well as contemporary literature. The results will be contrasted with the political view of the railways and their possible reforms, which

[1] Haller 1976, p. 152 quoted in Holtfrerich 1986a, p. 137.

[2] See also Laursen and Pedersen 1964, p. 123 and Feldman 1982.

[3] Borchardt 1985; for a critique see Holtfrerich 1982a.

[4] Balderston 1985 and 1993.

[5] See Ferguson 1996, *passim*, and for an earlier version of a similar argument Ferguson 1995a and 1995b.

has been researched by looking at the Reich budget debates of that period. Apart from its fiscal dimension, the railways also offer the possibility to gain an impression of the more general discussion of economic policy at the time.

The paper is organised as follows. I will first illustrate the importance of budget deficits inflation, and the possibility of reducing these details will be discussed. The history of the railways and their role, in discussions on the budget will be briefly described in section 2. Section 3 to 5 will in turn deal with the different aspects of railway reform, namely investment, fares and tariffs and finally personnel. The conclusion summarizes the argument and will set out some areas of possible future research.

1. Budget Deficits, the Room for Manoeuvre and the Railways

Contemporary theories attempting to explain the inflation ranged from the balance-of-payments approach, which was politically expedient[6] to the cost-push theory.[7] Of greatest use in the context of this study, however, is the quantity theory of money, which states – put in the simplest terms – that an equilibrium exists between the money in circulation (multiplied by velocity) and the price index (multiplied by the transaction volume). Although various other factors such as expectations influence the specific structure of the model, in particular in the short run, such a broad definition may suffice. Given the widespread use of (variations of) the quantity theory as an explanatory tool among economic historians,[8] not only the monetary policies pursued by the Reichsbank but also fiscal policies and their effect on the money supply have been analysed in detail. Successive budget deficits, which varied between 2.4% and 5.3% of NNP (see Table 1.1), have been judged to have been inflationary, especially against the background of an effectively fully employed economy.[9] Hans-Jürgen Jaksch, for example, argues on the basis of an econometric analysis that `the inflation could have been avoided by a steady reduction of the Reich deficit.'[10]

Although Jaksch's study illustrates the general importance of the budget deficits, their role will be integrated into a more stringent line of argument, namely that of a counterfactual analysis of fiscal policy. These counterfactuals are

[6] Webb 1989, pp. 20-1.

[7] Ferguson 1995, pp. 296ff.

[8] See, for example, Holtfrerich 1986a, pp. 98-101.

[9] Unemployment as percentage of total labour force averaged 1.2% between 1920 and 1922, Maddison 1991, p. 260.

[10] Jaksch 1982, p. 108, my translation, N.P.

not to be understood as a priori feasible economic or political alternatives but as analytical tools, which help to assess the importance of an individual factor.[11] Any judgement of the actual feasibility of alternative policies will be the result of such an analysis.

Table 1.1. Government Budgets, 1919 - 1923

(million marks per calendar year, real values, deflated with WPI)

	1	2	3	4
	Total spending	Total revenue	Budget balance (gross)	Budget balance as % of NNP
1919[1]	8643	2496	-6147	- 24[1]
1920	7098	3171	-3927	-10.4
1921	10395	6237	-4158	-10.3
1922	6240	4032	-2208	-5.3
1923[2]	6543	1785	- 4758[3]	- 16.7[2]

Notes: [1] Only government data for April to December available, therefore NNP, which was 34200m marks, was adjusted i.e. multiplied by 0.75. Given the political turmoil of the first quarter of 1919, this probably overstates the industrial production of those months and thus overestimates the budget deficit as percentage of NNP. For a discussion of the overall reliability of NNP data, see Holtfrerich 1986a, pp. 223-7.

[2] Only government data for January to September, therefore NNP, which was 37900m marks, was adjusted as 1919. Similar problems apply.

[3] Figures in col. 3 correspond with Webb's calculations for the gross budget balance (Webb 1989, p. 37) with the exception of 1923, where there is an obvious printing error: gross budget balance for the third quarter should be - 883m marks instead of - 1882m, otherwise the deficit would have been larger than total spending.

Sources: Col. 1 calculated on basis of Webb 1989, pp. 37; col. 2: calculated on basis of Webb 1989, p. 33. Col. 3: col. 2 minus col. 1. Col. 4: col. 3 as percentage of NNP from Witt 1977, p. 424.

[11] David 1969, p. 508. Ferguson 1996, *passim*.

To the counterfactual another methodological aspect will be added, a set of behavioural assumptions labelled rational expectations. This model states that economic agents act rationally on the basis of the available information, for example, economic indicators.[12] In the context of the early 1920s this meant that as long as the government ran considerable deficits consumers and producers would not react to any piece-meal stabilization attempts, because they had no rational reason to believe in the duration of the new stability. The emphasis is therefore, as argued by T.J. Sargent, on the need for a drastic change of the policy régime:

> Here too the fight against inflation is extremely difficult. It requires far more than any temporary monetary or fiscal measures, a fundamental alteration of economic policy ..: the constantly used strategy of deficit spending has to be abandoned immediately and this has to be guaranteed convincingly for the future.[13]

If one extends the rational expectations model to include politics, in the sense that a drastic policy change, for example the balancing of the budget, must not only be executed by technocrats, but also that this change must enjoy sufficient political support to appear credible and lasting, then the state of the public discussion becomes almost as important as its technical aspects.[14] In other words the analysis of the Reichstag budget debates can be integrated into an economic counterfactual of the hyperinflation.

However, before applying the methodological tools of counterfactual and rational expectations to the problem of the railways, the overall fiscal room for manoeuvre should be assessed on the basis of the secondary literature, which emphasizes the narrow limits. The question, however, is exactly how limited it was. Starting with revenue as one way of attempting stabilization, the consensus seems to be that once a working fiscal administration at Reich level had been put in place,[15] in other words, after the Erzberger tax reforms, the chances for stabilization improved considerably. The crucial difficulty after the period of

[12] See Webb 1989, chapter 3 `Fiscal news and inflationary expectations', pp. 44-64; see also Balderston 1995, p. 154.

[13] Sargent 1984, p. 36, my translation, NP.

[14] For the possible extension of the model to `political' as opposed to pure `economic' events see Webb 1989, p. 64 and - although the author does not explicitly mention rational expectations but effectively describes them - Holtfrerich 1983, pp. 410ff.

[15] Holtfrerich 1987, pp. 125-37.

relative price stability (March 1920 and May 1921) was, however, that with few exceptions[16] inflation dissipated the real value of taxes collected.[17]

Turning to the expenditure side, the first question to be addressed is the role which war debts played. Although these figure prominently in the literature, with view to the period 1920 to 1923 the war debts do not explain Germany's hyperinflation, as a substantial part of the real value of the debts had been wiped out by the inflationary spurt of 1919-20, which is evidenced by the almost continuously falling interest payments.[18]

A more important obstacle to stabilization before 1923 were reparations, in particular those determined by the London Ultimatum of May 1921. As `treaty expenses account[ed] directly for more than 100% of the deficits,'[19] they created a number of problems: generally an extremely difficult fiscal task for the domestic government, a transfer problem[20] and the ultimatum ended the period of relative stability. The principal point with respect to the political counterfactual is the importance of expectations: although Webb argues that from a `purely economic viewpoint Germany could pay,'[21] the effect of the ultimatum was disastrous as it weakened the belief in the government's ultimate ability to balance the budget.[22]

Given these difficulties, where is the room for manoeuvre to be found which justifies a counterfactual approach? It will be argued that at least three areas of government subsidies – iron and steel, the merchant fleet and in particular the railways – can be identified, where savings would have been economically possible and sensible, even if one allows for multiplier effects. Although these savings were not large enough actually to balance the budget or remove the deterioration of expectations caused by reparations, the discussion can be justified on three grounds: firstly, the sums involved are by no means insignificant; secondly, recalling the use of `counterfactual' as an analytical tool, the case of those subsidies can be examined without attempting a total counterfactual; thirdly, and here most importantly, the study of those areas opens the discussion about the nature of investment under inflationary conditions, which is often regarded as one of the principal positive effects. Werner Abelshauser, for example, argues that

[16] For an account of the 10%-wage tax, see P.-C. Witt 1987, pp. 151ff.

[17] Webb 1989, p. 34.

[18] Webb 1989, p. 37.

[19] Webb 1986, pp. 61-2.

[20] For an account of the ensuing academic debate, Petzina 1994, pp. 248ff.

[21] Webb 1989, p. 42.

[22] Webb 1989, pp. 54f.

`until then [the beginning of the *Ruhrkampf*, N.P.] the inflation supported the reconstruction process by positively influencing the crucial growth factor "investment ratio."'[23]

However, this argument has not been without criticism: Wagenführ's study, for example, argued in 1933 that investment decisions lacked `any secure basis for judging profitability in the long-term, because relative prices were continually changing.'[24] Dieter Lindenlaub in his case study of the engineering industry shows that no positive link existed between (accelerating) inflation and investment, the latter being influenced also by negative profit expectations.[25] Lindenlaub´s results highlight indirectly the problem of evaluating the efficiency and relative importance of investment if measured as a national aggregate.[26] Although the study of a very limited sector of the economy, for example, the railways, cannot solve this general problem, it still can try to assess the (often political) motivation for the choice of resource allocation and on this basis possibly its efficiency.

The common denominator of the suggested areas of saving is the loss of productive capacity due to either the armistice or the Versailles Treaty, which was exploited not only to justify rapid reconstruction but an expansion programme which resulted in overcapacities. Perhaps the best-known example, which even authors who otherwise argue for a `coherent economic policy' accept,[27] is the iron and steel industry, which after 1923 confronted `the overcapacities and irrationalities, produced by its hot-housed reconstruction during inflation.'[28] Feldman also points to the link between the mushrooming of this industry and the excessive reconstruction programmes of the two other sectors.[29] Concerning the merchant fleet, Niall Ferguson has argued that the compensation programme, which amounted to c. 6% of total Reich expenditure in 1920 and 1921,[30] was so generous that it caused the head of the Hapag shipping line in Berlin,

[23] quoted in Abelshauser 1978, p. 168, my translation, N.P. For similar statements, see, for example, Laursen and Pedersen 1964, pp. 95-8; Holtfrerich 1986a, p. 206.

[24] Wagenführ 1933, p. 28 cited in Holtfrerich 1986a, p. 205, see also pp. 205f for Holtfrerich's critique of Wagenführ's point.

[25] Lindenlaub 1985, pp. 198f.

[26] Holtfrerich 1986a, pp. 205ff.

[27] Witt 1982, p. 165.

[28] Feldman 1977, p. 454.

[29] Feldman 1977, p. 454

[30] Ferguson 1995b, p. 284.

Holtzendorff, `to wish fervently "that the enormously detested Erzberger [who had supported the programme, N.P.] will remain at the top of the Finance Ministry."'[31]

Table 1.2. Areas of Possible Saving: The Railways as *pars pro toto*

(million marks per calendar year, real values deflated with WPI)

	1921	1922	1923
1: Budget balance (gross)	-4158	-2208	-4758
2: Budget balance as % of NNP	-10.3	-5.3	-16.7
3: Railway deficit	1215	501	1833
4: Railway deficit as % of NNP	3	1.2	6.5
5: Railway deficit as % budget balance	29.2	22.7	38.5

Notes: [1] For 1923 only data for January to September available. For methodological problems see Table 1.1, p. 6**,** notes 1 and 2. Estimates for 1919 and 1920 are reproduced and discussed on pp. 14f.

Sources: Rows 1 and 2: see Table 1.1; row 3: calculated on basis of Webb 1989, pp. 33 and 37; row 4: as percentage of NNP, see Table 1.1; row 5: row 3 as percentage of row 1.

The last and in this context most important sector is the railway system. It was not only of crucial fiscal importance for the Reich – the railway deficits accounted for between 22.7 and 38.5% of the overall budget deficit (see Table 1.2) – but had also considerable influence on the economic situation in a more general sense. During the periods 1909 - 1913 and 1925 - 1929 the railways accounted for c. 4% of national production and for 60% of the transport sector.[32] They also occupied a virtual monopoly position as customers of carriages and were important for other sectors such as steel and coal production.

Apart from these aspects, the railways have the added advantage of serving as a *pars pro toto* for the problems of the Weimar economy as well as the Reich administration during the period: suffering losses due to the armistice, undergoing reconstruction, serving as an employment agency during

[31] Ferguson 1995b, p. 281.

[32] Witt 1986.

demobilization, grappling with a new administrative structure under the Reich's authority, and finally dealing with the socially responsible and therefore highly political role of a public enterprise. For these reasons the railways attracted considerable attention and criticism, which was not only levelled against the management of the railways for its reconstruction programme,[33] but also for its pricing policy[34] and staffing levels[35] – points to be investigated in the subsequent sections.

2. The German Eisenbahnen and the Budget Debates

Before delving into the detailed analysis of the railways, the process of restructuring after the First World War and the general perception of the accompanying problems should be described. The core assumption underlying this and the following discussion will be that the railways could have been run in a profitable way – a tenet which to many observers of present railway systems must at least be debatable.[36] However, the experience and perception from the late nineteenth century was different. Evidence for the pre-war period, when the railways were still owned by individual states,[37] is, for example, detailed in the report presented to the reparations commission under C.G. Dawes.[38] An account for the period after 1923, when the railways had been turned into a private company and its profits made part of the reparation payments under the Dawes-Plan, can be found in Ursula-Maria Ruser's study.[39] Although it must be acknowledged that the comparison of the two periods is not without difficulty, for example due to different accounting techniques,[40] the argument for the possibility of operating the railways profitably will be kept.

As already mentioned, the railways faced various problems in the immediate post-war period, their total restructuring in the process leading up to

[33] Graham 1930, pp. 307-10; Bresciani-Turroni 1937, p. 196.

[34] Bresciani-Turroni 1937, p. 71.

[35] Ferguson 1995b, pp. 279-80.

[36] Profitability will be used in the sense that the railways operated without direct government subsidies.

[37] It should be noted that the term `railways' will only be used for this group, thus excluding privately owned railways.

[38] *DWWF*, pp. 100-1. Also Sarter 1920, pp. 128ff.

[39] Ruser 1981, pp. 150ff.

[40] Witt 1986, pp. 401-2. For a description of the accounting process, in particular stipulations by the Dawes-Plan, see Lüke 1958, pp. 97-107 and Ruser 1981, pp. 150ff.

nationalization in April 1920 being one of them. Arguments for a `nationalization' in the sense of national coordination of the railways had been advanced at least since the late nineteenth century but received renewed impetus during the First World War, when some form of *de facto* central control was introduced.[41] Against this background the Weimar constitution stipulated the transfer of the state-owned railways to the Reich[42] and the creation of the Reich Transport Ministry (*Reichsverkehrsministerium*, hereafter RVM), which was to be the main administrative body.[43] However, the completion of the process was not without difficulties and criticism was levelled against nationalization, focusing on the rushed way it was conducted,[44] the upgrading of employees at the Reich's expense and finally the price paid to the states.[45]

The financial issue was already pressing in 1919 as the railways ran considerable deficits. Although reliable figures are not available, contemporary sources suggest that the deficit was 600m marks for the fiscal year 1919 and that it was expected to rise to c. 830m in 1920 (both in prices of 1913),[46] which are in the order of magnitude of the later years.[47] Against the background of these losses one provision of the Weimar constitution concerning the railways was particularly important. Article 92 stated that

> The National Railways are, despite the integration of their budget and their accounts into the Reichbudget and its accounts, to be administrated like an independent economic enterprise...[48]

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[41] Ruser 1981, pp. 1-4.

[42] See article 89 of the Weimar constitution, *RGBl.* 1919, p. 1400. For a more detailed discussion of the political process behind the nationalization, see Ruser 1981, pp. 6-20.

[43] The RVM was founded on 21 June 1919, see Ruser 1981, p. 14.

[44] The original date for the transfer was the 1 Apr. 1921 (see article 171 of the Weimar constitution, *RGBl*. 1919, p. 1416) but then altered to 1 Apr. 1920.

[45] Leyen 1920, pp. 25-8 and Ruser 1981, pp. 17-9; for a defence of the price paid, see Sarter 1920,p. 130.

[46] Both figures from Sarter 1920, p. 130; figure in marks for 1919 was 4.4 bn, deflated with WPI; the figure for 1920 was 12bn marks, a rough estimate which was also expected by the government (see Fehrenbach, 28 June 1920, *RT* (Vol. 344, p. 13)). Also deflated with WPI from `Zahlen zur Geldentwertung', 16-7.

[47] See Table 1.2.

[48] *RGBl.* 1919, p. 1400.

In the interpretation of Adolf Sarter, who was a civil servant in the RVM, the term `independent economic enterprise' *(selbständiges Wirtschaftsunternehmen)* meant that the management of the railways should be conducted as far as possible along commercial lines; in other words, subsidies from the Reich government were supposedly not expected.[49] This aim, and the responsibility of the railways as the major transport supplier, led to an unavoidable conflict of interest, which was increased by the political pressure put on the government, or more precisely the Reich Transport Minister Wilhelm Groener, who occupied this post for most of the period under discussion.[50]

Against this administrative and constitutional background, the parliamentary discussions were conducted. Given the range and complexity of these issues, the time period and the number of topics has to be limited. As far as the time range is concerned, the main focus will be on the period 1920 to early 1923. Starting in 1920 is justifiable on the grounds that it was only in April of that year that the Reich took over direct responsibility for the railways, and therefore only from this point the parliamentary debates can serve a counterfactual purpose. However, the main material will effectively be on the budget debates from 1921 onwards as the budget for the fiscal year 1920 (1 April 1920 to 31 March 1921) was only passed in combination with the 1921 budget. The analysis will stop with the budget of 1923, as later parliamentary debates, for example concerning the reform process, were extremely limited: firstly, due to the enabling laws under which they were conducted and secondly, due to the wider and politically more pressing issues such as currency stabilization.

As far as the range of topics is concerned, the analysis will, as already pointed out, concentrate on the deficits and the three areas of possible remedy. Given the well-known problems of assessing the fiscal situation during the period,[51] it will furthermore be limited to the politicians´ perception of the problems. Factual information will only be used if it can either be backed up by secondary material or – very occasionally – when it seems uncontroversial (being used by politicians of different parties). In order to facilitate the assessment of the material, citations from the debates will provide information concerning the speaker and the party to which he belonged.[52]

[49] Sarter 1920, pp. 132ff.

[50] Ruser 1981, p. 20.

[51] Webb 1989, Appendix I, pp. 129-31.

[52] Citations from the debates will normally be presented as follows: name of the speaker (political party), date of session, *RT* (number of volume, page number) e.g. Deglerk (DNVP), 17 Mar. 1921, *RT* (Vol. 348, p. 3118). Reichstag-documents (*Anlagen*) cited as

Although it is difficult to distil reliable factual information from the budget debates, the minutes clearly convey the importance of the *Eisenbahnfrage* and the awareness of the MPs that the railways´ deficit presented a serious problem.[53] The budget committee, for example, asked the government to establish a special committee to investigate the causes of the deficit.[54]

Furthermore it can be shown on the basis of the debates that a link was seen between (railway) deficits and inflation. Transport Minister Groener argued, for example, in April 1923

> The entire problem of the railway finance and tariff policy culminates, as I have taken the liberty to point out in the [session of the railway, N.P.] committee, in the following question: Should the railways, with their immense deficits, increase inflation, or should they from now on run a proper business? There should be no doubt about the answer.[55]

Although this quote is in its clarity admittedly an exception, the important point here is that it shows a basic understanding of the quantity theory. So far the use of the quantity theory has been mainly justified in terms of its use among economic historians to analyse the inflation. However, a number of articles convey the impression that the degree of the contemporary understanding of the economic processes was so unsophisticated or so tainted by interest politics that it made stopping the inflation extremely difficult.[56] Although it has been shown by Holtfrerich that the Reichsbank, for example, had a good grasp of the inflation in terms of the quantity theory and communicated its opinion to the government,[57] it

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follows: document number, *RT* (number of volume, if relevant page number *within* the document). Unless otherwise indicated all translations of quotations are my own.

Information concerning party membership and occupation can be found in the alphabetical list of MPs, Document No. 1, *RT* (Vol. 363, pp. 1-12). A list of abbreviations of party names can be found at the end of the paper.

[53] See, for example, Trimborn (Z), 30 June 1920, *RT* (Vol. 344, p. 50) or Wirth (Z), Reich Finance Minister, 1 July 1920, *RT* (Vol. 344, pp. 92ff) or Becker (DVP), 2 July 1919, *RT* (Vol. 344, p.159).

[54] Document No. 228, *RT* (Vol. 363).

[55] Groener, 14 Apr. 1923, *RT* (Vol. 359, p. 10505)

[56] Hardach 1977 and Krohn 1974.

[57] Holtfrerich 1977, pp. 203-9. Further evidence of the inflationary effect of the budget deficits is provided, for example, by Carl Melchior, who argued that `The reasons for the

is crucial to stress that a basic understanding of the link between budget deficits and inflation also extended to the debating chamber – in other words, it can be assumed that in the discussion of possible areas of saving the participating politicians were aware of the deficit's particular importance.

3. Investment

Before describing the economic and political room for manoeuvre in the areas of possible saving a set of general indicators for the output of the railways must be introduced which will serve as the basis for two sets of comparisons. The first will be between periods i.e. between the years of inflation and those pre-war and post-inflation, which have already been described above as periods of relative normality, when the railways were run profitably. The second kind of comparison concerns essentially productivity considerations e.g. comparing number of rolling stock to units produced.

One problem as far as intertemporal comparisons are concerned is, among other structural breaks, the change in territorial size due to the Versailles treaty. According to Peter-Christian Witt Germany lost c. 6300 km of railway track which was equivalent to 10% of the length of the railway system in 1913.[58] However, as changes to the Reich´s territory or areas under the Reich´s control continued throughout the period, Witt decided in his study not to adjust the data for these changes.[59] As a large proportion of the statistical information is drawn from his study `Anpassung an die Inflation. Das Investitionsverhalten der deutschen Staatsbahnen / Reichsbahnen in den Jahren 1914 bis 1923/4´, the same approach will be used here. However, where relevant, this issue will again be discussed.

Two different measures of railway output will be used. The first are passengerkilometres for the passenger and tonkilometres for freight sector. Although these are the best indicators of sectoral output, they are of little use when the railways as a whole have to be described. This is the case in the discussion of investment and staff levels, as these cannot be separated along the lines of the passenger and freight sector. Therefore, as a general output indicator carriageaxlekilometres *(Wagenachskilometre)* will be used i.e. the number of axles multiplied by the number of kilometres. Although this indicator allows to

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inflation are extraordinarily simple. They lie in the immense deficit of our budget.´ cited in Schuker 1978, p. 354. My translation, N.P.

[58] Witt 1986, p. 412. Similar though slightly higher figures in *DWWF*, p. 102.

[59] Witt 1986, p. 397.

aggregate the different sectors and also serves as a proxy for passenger- and tonkilometres,[60] it is a relatively crude measure for two reasons. First, the size and therefore capacity of passenger carriages as well as goods vans changed relatively quickly over time. Jacobi shows in a detailed discussion of the methodological problems that even during a period with no structural breaks (e.g. 1905 - 1913) the ratio of weight (incl. locomotives and goods vans) per axle increased by c. 11%.[61] The second problem concerns the degree of utilization. Obviously a full and a half-empty passenger carriage are described by the same number of carriageaxle-kilometres.

In Table 3.1 the results for the different measures of railway output are shown. Although these will be discussed in greater detail in the context of the three areas of possible reform, a few explanations may be given at this stage. In order to illustrate the changes of output under conditions without major structural breaks, data for 1910 and 1913 have been provided, which show a considerable growth in all sectors. Passenger- and tonkilometres have been placed next to the respective carriageaxle indicators in order to facilitate comparisons. Finally measures of output have been reproduced in absolute figures as well as in indexed form (1913 = 100). The table shows that total output (measured by total carriageaxlekilometres) during the inflation was considerably lower than in 1913 and remained even so after 1924, although one should allow for the territorial losses mentioned above. The exception to this general observation is passenger traffic if measured in passenger kilometres, which soars in 1922 and 1923. Although this aspect is important when the effects of low passenger fares are discussed, the passenger traffic sector (measured as relative share of total carriageaxlekilometres) was not important enough to alter the general impression of a relatively low output level.

Turning now to the investment policy, the first aspect to be stressed is that between 1919 and 1923 the German railway authorities, at least partly driven by the losses incurred due to the armistice and the Versailles Treaty, invested heavily in new rolling stock. The speed with which this reconstruction programme progressed was not only noted frequently by (near) contemporaries[62] but also criticized for its arguably excessive nature – for example, by the experts of the

[60] Witt 1986, p. 400.

[61] Jacobi 1920, p. 37 and *passim.*

[62] Graham 1930, pp. 307-10; Bresciani-Turroni 1937, p. 196.

Table 3.1. Various measures of railway output

Indicators in absolute levels (billions)

	Passenger-carriage axlekm	Passenger-kilometres	Freight-carriage-axlekm	Freight in tonkm	Total Carriage axlekm
1910	7.65	35.7	20.87	56.4	28.51
1913	9.11	41.4	24.4	67.7	33.51
1920	6.08*		16.98*		23.06*
1921	6.84		18.05		24.89
1922	7.19	75.2	18.12	62.9	25.31
1923	6.08	64.6	13.34	42.7	19.42
1924	6.05	44.6	13.66	47.9	19.71
1925	7.72	50.1	16.18	60.2	23.9
1926	7.6	44	18.47	65.4	26.06
1927	7.95	46.6	19.72	73.3	27.67
1928	8.5	48.8	20.58	73.9	29.08

Indicators indexed (1913 = 100)

	Passenger-axlekm	Passenger-kilometres	Freight-carriage-axlekm	Freight in tonkm	Total Carriage axlekm
1910	84	86	86	83	85
1913	100	100	100	100	100
1920	67*		70*		69*
1921	75		74		74
1922	79	182	74	93	76
1923	67	156	55	63	58
1924	66	108	56	71	59
1925	85	121	66	89	71
1926	83	106	76	97	78
1927	82	113	81	108	83
1928	93	118	84	109	87

Notes: Carriage axle km are `Wagenachskilometre´ Total Carriage axle km are combined Passenger and Freight Carriage axle km. *Data incomplete.

Source: Witt 1986, p. 402f.

Dawes-Commission.[63] Witt analyses the investment behaviour independently of the contemporary accounting techniques and lends qualified support to these observations.

Although a list of the rolling stock in use cannot replace a detailed study of the investment, it may nevertheless be able to illustrate the overall development. Table 3.2 shows the changes in numbers of locomotives, passenger carriages and goods vans. During the war, considerable expansion occurred in all these categories, increasing the rolling stock by c. 25%. The losses already mentioned essentially wiped out these increases.[64]

Although these losses presented a considerable incentive and a powerful argument for speedy reconstruction, the railway also lost 10% of its tracks. Therefore an argument for the replacement of rolling stock would have to show that the losses of rolling stock where relatively greater than those of railtracks or any other indicator of output capacity. Taking locomotives as an example – they accounted for the largest share of investment in rolling stock – one can show that the index of the number of locomotives per railtrack kilometre rises from 100 in 1913 to around c. 115 during the inflation year before falling again to 98 in 1926. An even more distinct result is gained when the number of locomotives is compared to the actual output of the railways measured here in total carriageaxlekilometres. The index of locomotives per unit of output rises from 100 in 1913 to an average of c. 150 during the inflation years and then declines to 116 in 1926.

It should be noted that this calculation assumes that locomotives were of the same quality thoughout the period, which was not the case given the wear and tear during the war and the modernisation of the early 1920s. A possible counter-argument could therefore be that the investment during the inflation period was the pre-condition for the improvement of the ratio in the second half of the 1920s. However, specifically with a view to this post-inflation period, it has been argued by Witt that the number of locomotives was still far in excess of what was required even at peak times.[65] Based upon his detailed study Witt reaches the general conclusion that although the allocation of scarce resources was micro- and macroeconomically sensible, given the losses incurred, `it must not be overlooked, that this expansion of the rolling stock was pushed beyond what was necessary due

[63] *Das Sachverständigen-Gutachten* (Frankfurt, 1924) cited in Wagenführ 1933, p. 28.

[64] For a more detailed, though certainly not unbiased account, of the impact of the reparations, see *DWWF*, pp. 98 and 102f.

[65] Witt 1986, p. 420.

to political considerations'[66] – in other words, fighting unemployment by providing the iron and steel industry with contracts.[67]

Table 3.2 Rolling Stock of the Railways

(All data indexed, 1913 = 100)

	1	2	3	4	5
	Locomotive	Passenger carriages	Goods vans	Locomotive per carriage-axlekm	Locomotive per railtrack
1913	100	100	100	100	100
1914	104	104	104		
1915	110	107	109		
1916	115	112	114		
1917	121	116	119	125	118
1918	127	119	125	159	126
1919	105	101	-	168	114
1920	105	102	96	152	114
1921	107	104	101	143	116
1922	105	106	103	138	116
1923	103	105	106	178	114
1924	103	105	106	174	112
1925	96	99	103	134	104
1926	91	99	100	116	98

Notes: Col. 5 German technical term for railway track in this context is *Streckenlänge.*

Sources: Cols. 1, 2 and 3 Witt 1986, pp. 424-5, col. 4: own calculations on basis of col. 1 and table 3.1, col `Total Carriageaxlekilometres´, col. 5: col. 1 and Witt 1986, p. 412.

[66] Witt 1986, p. 423, my translation, N.P.

[67] Witt 1986, p. 432.

If one accepts this conclusion, the next question must be how big the possible savings and therefore the effect on the railway deficits would have been. Given the methodological problems of estimating output and therefore the exact number of rolling stock required, the following estimation will be confined to the case of the locomotives. During 1921 and 1922 i.e. the period of possible stabilization net investment in locomotives amounted to c. 297m Marks (1913-prices).[68] If one takes 1913 again as reference year, when annual net investment was c. 110m marks (i.e. 220m Marks for a two-year period)[69] the possible savings during those years would have been at least (given the smaller railway system) 77m marks. This sum equals c. 5% of the railway deficit – a relatively small percentage, although it should be remembered first that this is the figure for only one aspect of the railways´ total investment and second that this counterfactual saving has to be added to the savings in the areas discussed below.

Turning now to the political perception of the investment question, the budget debates illustrate clearly the powerful motivation caused by the losses. Kurt Deglerk, on behalf of the budget committee, argued in 1921 that

> Concerning the acquisition of locomotives and carriages the preparation of a generous building programme and the swift placing of contracts was thought desirable.[70]

Similar demands were made by various other MPs.[71] Excluding the frequent criticism of alleged overpricing by the suppliers,[72] which cannot be investigated here, the attention spent on the level of investment was not sufficient to monitor the process of reconstruction closely. By 1923 the railways, which were described as being in such a deplorable state,[73] seem to have been in considerably better condition. Again in his function as speaker of the budget committee, Deglerk

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[68] Witt 1986, p. 427.

[69] Witt 1986, p. 427.

[70] Deglerk (DNVP), 17 Mar. 1921, *RT* (Vol. 348, p. 3117).

[71] Klöckner (Z), 17 Mar. 1921, *RT* (Vol. 348, pp. 3128ff); Wieland (DDP), 17 Mar. 1921 *RT* (Vol. 348, p. 3143).

[72] Brunner (SPD), 10 May 1922, *RT* (Vol. 354, p. 7062); Höfle (Z), 10 May 1922, *RT* (Vol. 348, p. 7065); Aufhäuser (USPD), 11 May 1922, *RT* (Vol. 354, p. 7101).

[73] For example, Wieland (DDP), 11 May 1922, *RT* (Vol. 354, p. 7089).

describes the rolling stock of the railways by providing the following figures (rolling stock per 100 kilometres of railway track).[74]

	1913	1922
Locomotives	49	57
Passenger carriages	110	128
Goods vans	1132	1269

and concludes in a terse statement that `there is then no lack of rolling stock.'[75] As in the cases of the iron and steel industry, and the merchant fleet, the legitimizing impact of the losses prevented any principal criticism of the level of reconstruction and one has therefore to conclude that the room for savings in this area, though economically possible, was extremely limited in political terms.

4. Fares and Tariffs

The Reich Transport Ministry has been frequently criticized, for example by Bresciani-Turroni, for failing to adapt the railway fares and tariffs quickly enough to inflation and thus for losing revenue which otherwise might have helped to reduce the budget deficit.[76] Data from the `Zahlen zur Geldentwertung,' reproduced in chart 4.1, provide interesting information.[77] The chart clearly shows that freight tariffs and passenger fares were only c. 40% of the 1913 level, until spring 1921 when freight tariffs rose to c. 65%. The most important change occurred at the beginning of 1922, when a tariff-fare scissors opened: passenger fares fell to approximately 20% of their pre-war level. Freight tariffs, while showing a distinctly erratic pattern, were on average 71% of the 1913-level (March 1922 - October 1923).

The contrasting development of prices for the passenger and freight sector is also reflected in the relative share in total revenue, as can be seen in Table 4.1. Whereas before the war and after the end of the inflation, freight traffic

[74] The exact technical term used in the German documents is average *Betriebslänge*.

[75] Deglerk (DNVP), 13 Apr. 1923, *RT* (Vol. 359, p. 10475).

[76] Bresciani-Turroni 1937, p. 71.

[77] `Passenger fares' are 3rd class fares per kilometer deflated with CPI. Freight tariffs, for which the source does not provide any detailed information, were deflated with WPI. NB Figures for the last phase of the inflation, when fares and tariffs were adjusted almost daily, have been recalculated to obtain weighted monthly averages. `Zahlen zur Geldentwertung', p. 36.

Figure 4.1 Inflation-adjusted Railway Fares and Tariffs, March 1920 - October 1923 (1913 = 100)

accounted for 60-65% of revenue, its share rose to over 90% in 1922. As has been shown above (see Table 3.1) passenger traffic, measured in passenger kilometres, was booming in this period, as a falling share of revenue was less due to a lack of customers than to the falling fares.

Although taking the pre-war period as a reference point certainly suggests that upward room for manoeuvre existed, arguing that revenue could have been therefore increased is not without problems. In order to answer the principal question, namely whether the railways were or were not maximizing profits, *inter alia*, the cost structure of the railways and the elasticities of demand would have to be known. Although this kind of information is not easily available, Witt's suggestions concerning the structure of the passenger and freight market will be used in combination with the railways' output figures to gain a rough idea of the possible room for manoeuvre.[78]

Witt argues that the freight sector was influenced largely by the overall economic situation and less by the price level. This claim can be illustrated by comparing the development of goods transported (measured in tonkilometres) with, for example, the industrial production index, which shows that both indices fell sharply in 1923 and then rose steadily.[79]

In contrast to the freight sector, passenger traffic was more influenced by the price level. On this basis, the explosion of passenger traffic, which was, for example, in 1922 80% higher than in 1913 and 60% higher than during the post-inflation period (1924 - 1929, see Table 3.1), can be explained by the low fares. Despite the political and economic upheaval, passenger traffic remained at an exceptionally high level in 1923 – the fall in comparison with 1922 can be explained with the start of stabilization and the rise of fare levels.[80] Given this price sensitivity, profit-maximizing increases could probably not have been not as considerable as suggested by the simple comparison with 1913.

Although the lack of knowledge about the cost structure and the elasticities of demand prevent a detailed quantitative assessment of the room for maneouvre, it is worth hazarding a guess of the order of magnitude of possible additional revenue for the passenger sector for the fiscal year 1921. If one accepts that the relative share of passenger and freight traffic in the revenue during the periods of `normalcy´ i.e. before and after the inflation (see Table 4.1) was 30 and

[78] Witt 1986, pp. 400-2.

[79] See Witt 1986, p. 400-2, Table 3.1, p. 20, source for the industrial production index is Wagenführ 1933, p. 64.

[80] Witt 1986, pp. 400-2.

60% respectively,[81] the additional counterfactual revenue from the passenger sector can be calculated as follows. Assuming that the 'higher' freight tariffs were at a profit-maximizing level during the fiscal year 1921,[82] one could estimate the additional revenue from the passenger sector by calculating what the revenue would have been, if the normal relative shares in the revenue had been maintained. The estimated additional revenue would have been c. 330m Marks i.e. the deficit could have been reduced by more than one third.[83]

Having attempted to illustrate the room for fare increases, we now move to the question of feasibility. Both Bresciani-Turroni and Webb, who paints a more positive picture of the adjustment of fares to inflation, concentrate largely on the lag in the adjustment process – in other words, on the technical problems involved.[84] However, given the stability of prices between March 1920 and May 1921, this thesis alone cannot explain the low fare and tariff levels. As in other sectors, for example housing, prices were kept low out of political considerations.[85] On the basis of Reichstag debates it will be attempted to illustrate how these considerations specifically affected the pricing policy of the railways.

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[81] The figures are not supposed to add up to 100%, as the railways received a small percentage of revenue from other sources. See Table 4.1, sources.

[82] Freight tariffs were considerably closer to the 1913-level than passenger fares and are therefore are asssumed to be more representative of a profit-maximizing pricing policy. However, as tariffs were only 63% of the pre-war level, it should be noted that this is a very conservative assumption.

[83] Total revenue for the fiscal year 1921 was 1542m Marks (1913-prices, Webb 1989, p. 33). The relative share of the freight sector was c. 77% i.e. 1189m Marks. Assuming a ´normal´ relative share of 60% from freight and 30% from passenger traffic and holding freight revenue constant, the estimated revenue from the passenger traffic would have been 590m Marks. As actual revenue was 260m Marks, the counterfactual extra revenue would have been 330m Marks. The deficit for the fiscal year 1921 was c. 780m Marks.

It should be noted that the additional inflationary pressure exercised by an increase in fares would not in itself have spurred inflation significantly. Travel expenses were not part of the goods basket underlying German CPI-calculations. Even when these were incorporated in 1925 they accounted only for c. 1% of all goods. In other words, increasing fares by 200% would have led to a one-off inflationary spurt of 2%, which seems even in relation to the period of stability until May 1921 sustainable. See Statistisches Reichsamt 1925, *passim*.

[84] Bresciani-Turroni 1937, pp. 70-72 and Webb 1989, p. 32.

[85] Holtfrerich 1986a, pp. 35ff.

Table 4.1 Passenger and freight sectors as percentages of the Reichsbahn´s total revenue

	1908	1920	1921	1922	1925	1926
Passenger	-	26	17	6	31	29
Freight	65	68	77	93	61	62

Notes: Data refer to *Betriebseinnahmen* of the fiscal year. Data for 1908 for Prussian-Hessian railways only.

Sources: Data for 1908 from Wehrmann 1913, p. 292, footnote 3, p. 304; for 1920 and 1921 *Archiv* 1924, pp. 316f; for 1922 *Archiv* 1924, p. 654; for 1925 and 1926 *Archiv* 1929, p. 140.

The debates on possible increases of fares and tariffs can be divided into two, slightly overlapping periods. Between 1921 and May 1922 the debates were characterised by the general refusal to increase either fares or tariffs. The second phase, beginning with the budget debates of 1922 and coinciding with the opening of the tariff-fare scissors, is marked not only by an even more staunch resistance to tariff increases on the part of MPs with industrial connections but also by an increasing distributional conflict, in which often the same MPs complain about revenue from freight traffic `subsidising' passenger ticket prices.

During the budget debates of 1921, the beginning of the first period, increases were opposed by virtually all speakers covering almost the whole political spectrum ranging from Höllein (USDP)[86] to Reichert (DNVP).[87] Although those two speakers concentrate on their respective political supporters and interests – in other words Höllein on fares and Reichert on tariffs – there was yet no suggestion that the one should be increased at the expense of the other. One typical example is provided by Florian Klöckner (Z), who criticized the possible increase of freight tariffs on the grounds of the railways' general importance for the economy, and changes in fares on the basis that it would reduce passenger traffic and that therefore utmost care must be exercised.[88]

[86] 17 Mar. 1921 (Vol. 348, p. 3148).
[87] 17 Mar. 1921 (Vol. 348, pp. 3133-4).
[88] 17 Mar. 1921, *RT* (Vol. 348, p. 3128).

As in the case of salary levels, where the cyclical behaviour of political activity can be explained in terms of the rise or fall of those levels,[89] a link can be established between the opening of the `tariff-fare scissors' and the character of the debates on the railways' pricing policy. By May 1922 the criticism, in particular of the freight tariffs, was more forceful. Philipp Wieland, for example, said that

> My party [DDP, N.P.] is of the opinion, given the extraordinary level of the tariffs, that they cannot be raised simply in a dictatorial fashion, neither now nor in the future.
>
> (Agreement from the German Democrats.)
>
> These [increases, N.P.] must be done in agreement with industrial representatives. If one raises the tariffs “off the cuff”, the danger is that large groups of industry will be mortally wounded in their vital nerve.[90]

However, the attack on freight tariffs was not done without acknowledging problems in the passenger sector: for example, arguably too high fares for children.[91] Similar general attacks against price increases were levelled by the budget committee, as presented by Kurt Deglerk.[92]

Although it should be acknowledged that the budget debates of 1922 and 1923 (in May and April of the respective years) coincided with high levels of freight tariffs, and that therefore the timing of the discussion may have heightened the urgency of the criticism, the general impression is nevertheless one of an increasing conflict between MPs with industrial interests and MPs of other parties. Although such a basically `left-right' division is not the most novel and certainly not the intellectually most satisfying approach, the level of the debates leaves little room for alternative interpretation. Philipp Wieland (DDP), who in 1922 had fought against increases of either tariffs or fares, argued in 1923 for an increase of passenger fares.[93] Also Deglerk criticized the level of freight tariffs[94] and Reichert claimed that the freight sector subsidised passenger traffic.[95] However, the pricing

[89] See, for example, Kunz 1986, p. 75.

[90] 11 May 1922, *RT* (Vol. 354, p. 7090).

[91] 11 May 1922, *RT* (Vol. 354, p. 7090).

[92] (DNVP), 10 May 1922, *RT* (Vol. 354, pp. 1056-7).

[93] 13 Apr. 1923, *RT* (Vol. 359, p. 10495).

[94] Deglerk (DNVP), 13 Apr. 1923, *RT* (Vol. 359, p. 10476).

[95] Reichert (DNVP), 13 Apr. 1922, *RT* (Vol. 359, pp. 10489f).

policy concerning freight was defended by Brunner (SPD), who argued with view to the international situation that

> Especially in the context of our current diplomatic situation the impression should be avoided under all circumstances that the German government were to support the German industry by fostering inflation and artificially reducing transport costs.
> (Quite right! from the left.)[96]

Although Brunner has a point in defending the tariff levels, the discussion of pricing policy, if viewed over the whole period, is not without a surreal note. Before May 1922, all parties tried to fight off any increases, united by what many call an `inflation consensus.'[97] Given that hyperinflation only started in the summer of that year, this is the crucial aspect in the context of the counterfactual. By 1923, when hyperinflation and especially the Ruhr occupation had destroyed the prospect of a balanced railway budget, the distributional conflict, in which representatives of industry had a marginally better case, was fully-fledged and reduced any chances of price increases. Therefore, despite the possibilities of a profit-maximizing pricing policy in purely economic terms, the chances of political support for such a régime change were minimal.

5. Personnel

The distributional conflict, which surfaced in the years 1922 and 1923 during the discussion of pricing policy, was characteristic of virtually all topics related to the question of personnel. This aspect of the debate, although making an adequate account more difficult, is rewarding insofar as it highlights the importance of the issues involved: any discussion, whether on staffing, the eight-hour day, or salary levels, finally boiled down to the question of whether the railways should be run primarily as a company, which happened to be publicly owned but was aiming at making profits, or as a Reich institution, which had economic as well as social responsibilities beyond providing a functioning transport system. Based on the assumption that this question lay at the heart of the various debates, this section will not only focus on staffing levels but briefly describe the discussions concerning a possible privatization which started well before 1923/4.

[96] 11 May 1922, *RT* (Vol. 354, p. 7090).

[97] For the use of this concept see Kindleberger 1984, pp. 30ff and. Maier 1978, pp. 332ff.

Starting with the factual background, Table 5.1 shows that the personnel of the railways increased continuously during the war, from 670,000 in 1914 to 922,000 in 1918. However, the `quantum leap' occurred between 1918 and 1919 when the number of staff increased by c. 23%. From 1919 the figures decline slowly until 1922 and then drop sharply, although the reproduced figures are only a rough indicator due to the exclusion of the Allied controlled areas. The crucial question is again one of room for manoeuvre i.e. personnel reductions. Taking again carriageaxlekilometres as an indicator of output, the number of employees per output unit is calculated, indexed with 1913 as the base year (Table 5.1, column 4). Although the values vary considerably during the years of inflation, reflecting the volatility of railway output in the hyperinflationary phase and its aftermath, they do not fall below 150 until 1925. In other words the number of employees per unit of output was at least 50% higher than in 1913.[98]

Therefore it may be reasonable to assume that the staffing levels of the years 1925 to 1928, in other words c. 725,000 employees, were sufficient to run the system. Taking this figure and the information on personnel's share of expenditure which was on average 37% of total outlays,[99] as a basis, one can arrive at a rough estimate of the possible savings, which amounted to c. 10% of the average expenditure (1920 - 1922). For the year 1921, this would have meant a reduction of the railway deficit by c. 20%.[100] Although this calculation is by no

[98] It should be noted that the use of alternative indicators e.g. passenger- and tonkilometres would yield, at first glance, a distinctly different result, as these show considerably higher production levels than carriageaxlekilometres. The difference can be explained, as indicated above (pp. 19ff) by varying degrees of utilization. However, the general argument still holds, if one combines the partial analyses for fares and personnel. Utilization was so high precisely because of the low fares, which were, as argued above, not profit-maximizing. The staffing levels would therefore appear more favourable only due to the misguided fares and tariff policy.

[99] For the fiscal years 1920 to 1922, *DWWF*, p. 100.

[100] Assuming minimum staff levels of 725,000, in 1921 the railways could have theoretically shed 340,000 employees equivalent to c. 30% of its labour force. As personal expenditure accounted for c. 40% of total expenditure (*DWWF*, p. 100), such a measure would have reduced overall expenditure by c. 12%. Total railway expenditure in 1921 was 2724m marks (1913 prices, on basis of Webb 1989, p. 37) and a reduction of 12% would therefore have been equivalent to c. 325m marks. As the reductions would not have been evenly distributed as is evidenced by the way the actual lay-offs were conducted in 1923 (i.e. more workers were made redundant than civil servants, see Table 5.1), the effect probably would have been smaller. A more realistic estimate would therefore be c. 250m marks. As the railway deficit for that year was 1215 millions marks (see Table 1.2, p. 12), it would have meant a reduction of c. 20%.

means flawless (even in purely economic terms), as the effect of uneven distribution of personnel reductions can only be safely estimated for its upper bound and multiplier effects as well as higher unemployment expenditure are neglected, it nevertheless indicates the significance of the personnel question.

Table 5.1 Personnel of the Railways, 1912 - 1928

(Yearly averages in 000s)

	1	2	3	4
	Civil servants	Workers	Total[1]	Employee per carriageaxlekm (1913 = 100)
1912	271	453	740	97
1913	284	482	783	100
1914	-	-	670	
1915	-	-	732	
1916	-	-	757	
1917	-	-	817	108
1918	-	-	922	148
1919	-	-	1132	231
1920	-	-	1105	205
1921	375	629	1067	183
1922	386	588	1035	175
1923[2]	358	515	918	202
1924[2]	288	10	725	157
1925	322	410	750	134
1926	310	388	708	116
1927	306	390	704	
1928	304	390	701	

Notes: [1] Total is col. 1 and 2 plus a small group ´Others´, see German Titles [2]Excludes Rhineland lines under Allied control *(Regie)*. German titles: col. 1: *Etatmäßige Beamte*; col. 2: *Arbeiter*; col. 3: col. 1 and 2 plus Others i.e. *Diätarische Beamte und Angestellte.*

Source: Cols. 1 - 3: Kunz 1986, p. 37. Col 4.: col 3 divided by total carriageaxlekm, see Table 3.1.

Turning from the economically to the politically feasible, the background of the quantum leap of 1919 must be discussed. As acknowledged by contemporary as well as present observers the personnel increases were largely due to men returning from the front claiming their old jobs and the deliberate use of the railways as an employment agency during the period of demobilization and general conversion to a peace economy.[101] Although the staffing levels were `excessive' and resulted in long-term inefficiencies,[102] it has been convincingly argued by Feldman that in the immediate aftermath of the war alternative policies were unrealistic.[103] Therefore in the political counterfactual one has to take the personnel levels of, for example, 1920 as a starting point and assess the room for manoeuvre on this basis. So far the discussion has focused on demobilization as an explanation for the large number of employees, however, the introduction of the eight-hour day in late 1918[104] has been viewed by contemporaries as a crucial factor, which will be discussed briefly below. A further point made by contemporaries is the upgrading of employees by the states before the railways were sold to the Reich and the resulting increase in personnel expenditure.[105]

However, before describing the debates, the `war-revolution' dichotomy as an explanation of the deficits may be recalled. Whereas in the earlier context, the acrimonious exchanges concerned past expenditure and were therefore – from a neutral viewpoint – rather fruitless, in this context the `war-revolution' debate concerned the question of whether the wear and tear between 1914 and 1918 was responsible for the deficits or the social legislation associated with the revolution.[106] If the latter was the case, as a number of contemporary observers believed,[107] this fact could not only be used as the basis for railway reform but also to attempt a general reversal of social policy legislation.

Turning now to the staffing levels proper, these were severely criticized throughout the period. However, as pointed out above, this criticism ran along

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[101] Kunz 1986, p. 36. For contemporary evidence, for example, Sarter 1920, pp. 130-1 or Deglerk (DNVP), 17 Mar. 1921, *RT* (Vol. 348, p. 3118).

[102] Mai 1986, p. 235.

[103] Feldman 1975, p. 20.

[104] For an account see Feldman 1993, pp. 106-7.

[105] Leyen 1920, p. 28.

[106] Arguments for the responsibility of war for the deficits, see Aufhäuser (USPD), 11 May 1922, *RT* (Vol. 354, p. 7098). For a defence of the revolution's record, see, for example, Brunner (SPD), 17 Mar. 1921, *RT* (Vol. 348, p. 3124).

[107] For example Höfle (Z), 10 May 1922, *RT* (Vol. 354, p. 7067).

party division lines.[108] Although these division lines were sometimes breached,[109] in most cases calls for shedding labour met the staunch resistance of the parties representing workers' interests. Ludwig Brunner argued, for example, that

> In 1920 the number of staff has been reduced by 56000. A further reduction by 42000 is planned. I think that one should not continue in this way. I consider it impossible to shed labour in the present situation. As long as unemployment levels are as high as they currently are, lay offs must not be carried out in order to reduce staffing levels.[110]

Although Brunner may have a had a point, in so far as Germany had experienced higher unemployment levels in the period of relative stabilization, the figure for March 1921, when the debate took place, was 3.7% (of trade union members)[111] in other words close to full employment and fabulous in comparison with other countries, especially Anglo-Saxon ones.[112]

A similar pattern of party divisions emerged in the debates on the 8-hour day and in which way it should be applied to the railways. Deglerk argued that

> The additional demand for labour, which is caused by the schematic application of the 8-hour-day, which the government itself called a great misfortune,
>
> (Hear! Hear! from the right.)
>
> is estimated to amount to 30%..[113]

Attempts to modify the 8-hour law to the needs of the railways by way of an hours-of-work law *(Arbeitszeitgesetz)*, to use the `industrial' interpretation, met workers' opposition, which was not only based upon their immediate economic interests but also the value of the 8-hour day as a symbol of the achievements of the revolution.

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[108] For an example from the DNVP, see Reichert, 17 Mar. 1921, *RT* (Vol. 348, p. 3131). For the DVP, Quaatz, 11 May 1922, *RT* (Vol. 354, p. 7077). For the USPD, Aufhäuser, 11 May 1922, *RT* (Vol. 354, pp. 7099ff).

[109] Quessel (SPD), 12 May 1922, *RT* (Vol. 354, p. 7132).

[110] Brunner (SPD), 17 Mar. 1921, *RT* (Vol. 348, p. 3127).

[111] Holtfrerich 1986a, p. 199.

[112] Average unemployment in the U.K. in 1921 was 11% (of the total labour force), Maddison 1991, p. 261.

[113] Deglerk (DNVP), 17 Mar. 1921, *RT* (Vol. 348, p. 3118).

It was therefore argued `that it is unnecessary to create an hours-of-work law, as an hours-of-work law exists, for Germany the 8-hour day is that law.'[114]

The underlying issue concerning the nature of the railways as a Reich institution resurfaced in the discussion of the Railways Finance Law *(Eisenbahn-finanzgesetz)*, which was to regulate the railways' financial position in greater detail, because article 92 of the constitution, which stipulated its passage, also stressed the role as an `independent economic enterprise' as described above.[115] Although the law was never passed, the debates on the draft highlight again the differing opinions on the topic. Whereas Quaatz supported early drafts of the law,[116] these were rejected by the USPD:

> We are of the opinion that the bill not only contains a number of deficiencies but also that it must never be allowed to become law as it obviously paves the way for privatization. On the contrary we must do everything to prevent this bill from becoming law, all the more so given that the proposed system for making the railways accountable to both the people and parliament contains as few guarantees as possible.[117]

The crucial point here is that the finance law was seen as part of a wider attempt to alter the aims of the railways and possibly German economic policy as a whole. Bark's remark concerning the *`Privatisierungsbestrebungen der Industrie'* (industrial privatization attempts) clearly refers to a report produced by the Reich Association of German Industry (RdI), which had been published in March 1922 and supported the idea of turning the railways into a public liability company *(Aktiengesellschaft)*, which was to be owned by various groups of society.[118] This report proved to be extremely controversial because it was suggested that railway personnel could be reduced to 740,000 employees,[119] in other words the figure

[111] Brunner (SPD), 10 May 1922, *RT* (Vol. 354, p. 7059).

[115] For a contemporary account, see Lochte 1922, pp. 131-5.

[116] Quaatz (DVP), 11 May 1922, *RT* (Vol. 354, p. 7082).

[117] Bark (USPD), 11 May 1922, *RT* (Vol. 354, p. 7117).

[118] Ruser 1981, pp. 23ff; see also Leyen 1922, pp. 256-60.

[119] Wieland (DDP), 11 May 1922, *RT* (Vol. 354, pp. 7087f). Although the RdI-report argued that staffing levels were too high, it is unclear how rapidly those should have been reduced. Quaatz, one of the co-authors of the report, stressed that the 300,000 expendable employees should not be sacked immediately. Quaatz (DVP), 12 May 1922, *RT* (Vol. 354, p. 7154).

used for calculating possible savings. Furthermore it was interpreted to be part of a wider plan, for example by Hugo Stinnes, for whom `privatization became an *idée fixe*,'[120] to restructure the German economy.[121]

Although the basic conflict concerning the purpose and nature of the railways, which was at the core of virtually all personnel-related discussions, can explain partly the failure to exploit the economic room for manoeuvre that has been described, another factor emerges from the debates. Railway staff could defend their interests not only because they had the party political leverage or the power to disrupt the economy by striking – as occurred in February 1922[122] – but because they had also the power to `rescue' the republic. Examples for this function are the Kapp-Putsch, which strengthened the unions' position,[123] and the Ruhr-occupation of 1923. Virtually no speaker during the budget debate in April of that year missed the opportunity to thank the railway staff for their `patriotic efforts.'[124] It was this bargaining power on a national political scale, which made – in combination with the aforementioned reasons – a reduction of staffing levels so difficult.

`In fact, the railroad system was not only ceasing to serve as the prime illustration of Germany's mismanagement and woes but was well on its way to becoming the paradigm for their solution.'[125] The reform process of 1923/4, succinctly described by Feldman's comment, illustrated vividly the economic room for manoeuvre, which was not used before for the political reasons, which will again be discussed in the conclusion. The `radical régime change' that is required under the rational expectations model to stop inflation was not possible until the collapse not only of the currency but of the economy as whole. However, even at this late stage, the way the reforms were conducted was indicative of the politicians' and the public's unwillingness to face up to the choices ahead. By using the strangest of parliamentary devices, the enabling law, parliament made the régime change possible, which involved the shedding of one quarter of the

[120] Feldman 1993, p. 359.

[121] For contemporary evidence of such an interpretation, see Höllein (USPD), 6 Dec. 1922, *RT* (Vol. 357, p. 9227).

[122] For a detailed account of the strike and in particular the civil servants' role in it, see Kunz 1986, ch. 6., *passim*.

[123] Feldman 1993, p. 213.

[124] See, for example, Groener, 14 Apr. 1923, *RT* (Vol. 359, p. 10504) or Höfle (Z), 13 Apr. 1923, *RT* (Vol. 359, pp. 10481f).

[125] Feldman 1993, p. 805.

labour force[126] and introducing a new pricing policy,[127] but tried to rid itself of any direct political responsibility for the unpopular measures. As far as the overall legal re-organization of the railways was concerned this process started with the creation of the *Deutsche Reichsbahn* by decree in February 1924.[128] It was completed by the railway law of August 1924,[129] which separated the railways from the Reich budget and set them up as an independent company, whose profits were made part of the reparation payments under the Dawes-Plan. In other words, it was against the background of severe economic pressure and Allied demands that the debate concerning the position of the railways within the German economy was decided in favour of a private industry solution.[130]

Conclusions and Implications

Chancellor Fehrenbach argued on 28 June 1920, in other words at the beginning of the period which has been discussed in this paper, that

> The relentless increase of our floating debt depresses the purchasing power of our money, restricts our credit and pushes prices to fraudulent heights. The volume of paper money is no sign of prosperity,
>
> (Quite right!)
>
> but a measure of increasing impoverishment.
>
> (Renewed agreement.)
>
> And the more the value of money collapses, the more violent becomes the struggle over wages and salaries, which despite everything are rarely able to keep pace with the rise in prices. An endless ratchet. It poses the gravest possible threat to trade and transport, to every branch of industry and labour. This danger must be countered with every available means, if we are to protect our people from the fearful misery of a collapse not only of the state finances but also of the nation´s economy. God

[126] Between 1 Oct. 1923 and 30 June 1924 total number of railway employees was reduced from 1,005,972 to 725,924. Estimates in Witt 1986, p. 405.

[127] See, for example, Feldman 1993, p. 805.

[128] *RGBl.* 1924, Part I, pp. 57ff.

[129] *Gesetz über die Deutsche Reichsbahngesellschaft*, 30 Aug 1924, *RGBl.* 1924, Part II, pp. 272ff.

[130] For the limits of this `private' nature of Reichsbahngesellschaft, see Lüke 1958, pp. 150ff.

> forbid that our people should only come to understand the full extent of our present plight as a consequence of [such] a collapse! For this reason we must promote the reform of the Reich´s finances with the utmost urgency.
>
> (Interjection from the Independent Social Democrats.)
>
> That will require a great sense of public responsibility on the part of the whole population.
>
> (Very true!)[131]

Fehrenbach's description of the dangers lying ahead in 1920, which turned out to be a disastrously accurate prophecy, not only illustrates the awareness among contemporaries of the seriousness of the situation but also the understanding of the causal link between govenment debt and hyperinflation. In this study we have attempted to test whether the awareness exemplified by the Fehrenbach quote could have been translated into political action leading to an earlier stabilization.

Based upon the quantity theory one aspect of the Reich budget deficit, the railways, which accounted for one quarter of the total deficit, has been analysed in the light of the debates between 1920 and 1923. It could be shown that in all three sectors of the railways which were targeted as possible areas of saving – investment, fares and tariffs, and personnel – considerable room for improvement existed in economic terms. The possible savings, which should be regarded as estimates of the order of magnitude not as precise figures, varied between 5% and 30% of the railway deficit for the different sectors. A co-oordinated policy of reforms should therefore have been able to reduce the railway deficit significantly. However, as has also been shown the political chances for change were extremely limited. Leaving aside the power political question how, for example, the railway personnel could defend their position and turning to the underlying reasons for the failure of reform, three principal causes can be identified.

Firstly, as in the case of the iron and steel industry and the merchant navy, the losses due to the armistice and the Versailles treaty led to reconstruction programmes that were not only quickly completed but that went beyond what was economically necessary. The legitimizing effect of the losses, which was enhanced by the fact that they had been imposed by the former enemies, was so great that a discussion about the precise level of reconstruction never took place. Aided by the desire to provide contracts for industry and thus create jobs, the reconstruction programmes enjoyed what one may call a `tacit inflation consensus.'

[131] Fehrenbach (Z), *RT* (Vol. 344, p. 12), translation in Ferguson 1996:635.

In contrast to this, the second explanation may be labelled the `vociferous inflation consensus' and applies to the debates about the pricing policy between 1921 and the beginning of 1922. Although most politicians were still united by the determination to prevent what they considered excessive price increases, the important difference in comparison with the tacit consensus is that, given the (admittedly unsuccessful) pressure of the Transport Ministry to increase prices, there was a need to justify the policy choice. The level of passenger fares and freight tariffs – which was well below the level of 1913, although this was never acknowledged – had to be defended vociferously.

As described above, from spring 1922 the nature of the debates on pricing policy changed due to the opening of the tariff-fare scissors. It was increasingly characterised by a distributional conflict between industrial and workers' interests, which also applied to the whole personnel discussion. As the intensity of the conflict was caused by the fundamental lack of agreement on the way the railways should be run, this raises the question how the underlying distributional conflict and the inflation consensus could coexist. What distinguished the discussion, for example, about personnel levels from the one on the reconstruction programmes? One possible answer is the degree to which the policy decisions directly affected the interested parties. Although excessive reconstruction programmes were bought at a cost, namely a continued deficit régime, these costs were seemingly distributed in an even way. The debates on staffing levels, however, immediately raised the question of economic winners and losers. If one accepts that an acute sense of urgency is needed to make difficult choices, then – rather ironically – the chances for reform were theoretically better within the framework of a distributional conflict, because the participating politicians had to face up to the consequences of their policies.

The implications of these results are twofold. As far as the specific railway topic is concerned, which merits further attention given their general economic as well specific fiscal importance, work on the cost-structure of the railways could prove to be fruitful. This research would have to use the same accounting techniques for the period before, during and after the inflation in order to confirm or falsify the hypothesis of the general profitability of railways.[132] On the basis of these results more exact estimates could be made for all sectors of possible reform.

The second set of implications concerns the general perception of industrial policy and the possibility of an earlier stabilization. The discussion of the *Eisenbahnfrage* could be substantiated by using other material on public

[132] See pp. 13f.

opinion such as newspaper articles and be integrated into the wider debate whether the Reich government followed a coherent policy.[133] Finally the general question of room for manoeuvre has to be addresssed. The results show that the revisionist argument concerning the underestimated room for economic reforms seems to be valid, limited obviously to the sector analysed in this paper. Given the fiscal weight of the railways it would make sense, once more precise estimates are available, to incorporate these into a general macroeconmic model, which would have to be econometrically estimated, to arrive at a conclusion as to what the impact of reforms on the course of inflation would have been. As far as the possibilities for the political implementation of these reforms are concerned the orthodox view of an extremely limited room for manoeuvre has been confirmed. Therefore future areas of research lie rather in the economic than the political aspect of this topic.

List of Abbreviations of Party Names

BVP	Bayerische Volkspartei Bavarian People's Party
DDP	Deutsche Demokratische Partei German Democratic Party
DNVP	Deutschnationale Volkspartei German National People's Party
DVP	Deutsche Volkspartei German People's Party
SPD	Sozialdemokratische Partei Deutschlands Social Democratic Party
USPD	Unabhängige Sozialdemokratische Partei Deutschlands Independent Social Democratic Party
Z	Zentrum Centre Party

[133] Witt 1982, p.160.

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