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# The imposed gift of Versailles: the fiscal effects of restricting the size of Germany's armed forces, 1924–1929<sup>1</sup>

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**Abstract:** Weimar's politicians used to attribute the continuous budget crises after the currency stabilization of 1923–4 to the burden put on the German economy by the Treaty of Versailles, in particular the reparation payments. This argument, which is still popular, neglects the fact that the restriction of the German military to 115,000 men relieved the German central budget considerably. In a counterfactual analysis we assess the savings in additional military costs and compare them to the reparation payments. Depending on the character of the foreign policy pursued by an unrestricted Germany, we find that the net effect of the Treaty's stipulations on the German central budgets was either much lower than hitherto thought or even positive. This finding gives support to the argument that Germany suffered from home-made political failure even in the relatively stable period from 1924 to 1929.

JEL: N44, H60

**Keywords:** Treaty of Versailles, reparations, Dawes plan, Weimar Germany, peace dividend

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'No Hitler without Versailles'—although this may be somewhat oversimplified, most historians agree that the Treaty of Versailles of June 1919 was a necessary condition for the rise of the national socialist movement in Germany. A twofold argument is usually put forward to support this view. Firstly, nearly all Germans considered the provisions of the Treaty of Versailles deeply unfair and a national humiliation. This fuelled revanchist claims which the Nazis were eager to take up. Secondly, the reparation burden of the 1920s, which was founded on the stipulation of Germany's responsibility for the outbreak of the war, was seen as a major financial constraint that impeded economic growth and that increased the intensity of the distribution struggles that finally tore the young republic apart and paved the way for Adolf Hitler.

The reparation payments were indeed a severe economic burden for Germany in the 1920s. Between 1925 and 1930, the German economy was deprived of between one and 2.2 billion Reichsmark (RM) annually, which amounted in the late 1920s to nearly 2.5 per cent of Germany's GDP. The economic consequences of the Treaty of Versailles, however, were not confined to the issue of reparations, territorial losses, and human capital losses. Both political historians and economic historians have failed to discuss the *fiscal* consequences of another provision of the treaty that has always been analysed in *political* terms only: Germany was forced to reduce its military personnel to a mere 100,000 soldiers in the army and 15,000 in the navy.<sup>2</sup> In addition, the production, purchase, and deployment of advanced military technology was restricted or altogether interdicted. These restrictions must have had a beneficial impact on the Reich budget, and they must have enlarged the fiscal margins for the German governments. We must therefore ask whether the Treaty of Versailles, besides its many harmful effects on German society and the German economy, also offered a peace dividend to conquered Germany, like the one that is said to have helped Germany and Japan after the Second World War.

As far as we can see, this subject has been seriously discussed by the contemporaries only in the years around 1920. When assessing Germany's ability to pay, the reparation commission argued that Germany saved £50–100 million (1–2 billion Marks) in military costs annually. Keynes refuted this point by arguing that the savings were more than compensated for by the payments for pensions which cost Germany around £250

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<sup>2</sup> Usually simply referred to as 100,000-man army.

million (5 billion Marks) per year.<sup>3</sup> Keynes, however, did not account for the inflation which boosted this figure. After 1924, when the currency had been stabilized, the annual payments to veterans and surviving dependants amounted to around several hundred million RM annually.<sup>4</sup> In view of the question pursued here, it has to be stressed that these costs were not related to the Treaty of Versailles and that it is in any case doubtful whether payments to veterans and surviving dependants would have reduced the revanchists' appetite for military power. However, it should be noted that in the second half of the 1920s, contemporaries seem to have hardly ever discussed the issue of saved military costs, neither in the media nor in the Reichstag.<sup>5</sup> While the subject may have cropped up in contemporary debate from time to time, it certainly did not make its way into the history books.<sup>6</sup>

The fact that this topic has never been discussed is all the more astonishing as there are at least two academic debates on the disastrous impact that public finances had on German politics. First, there has been a large and productive discussion sparked by Knut Borchardt about whether Chancellor Brüning, who was in office from March 1930 to May 1932, had feasible alternatives to his procyclical economic policy that aggravated the dire economic situation. Those who agree with Borchardt that Brüning did not have much room for manoeuvre stress that the precarious situation of the Reich budget restrained Brüning enormously.<sup>7</sup> This was all the more so given that large swathes of the public were hostile to expansionary fiscal policies that were believed to have led to inflation in the period from the end of the First World War until 1923. Secondly, the precarious state of the Reich's finances is believed to have contributed to the banking crisis of July 1931, during which Germany had to abandon the gold standard.<sup>8</sup> In both debates the Reich's finances and the inability of the governments to build up any reserves in the so-called 'golden years' of the 1920s play a pivotal role.

The question of why Germany's finances were in such a desperate state is usually explained by a number of factors ranging from the structural weaknesses of the German

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<sup>3</sup> Keynes, *Economic consequences*, pp. 191–2.

<sup>4</sup> See *Reichshaushaltsrechnung*, section XII ('Allgemeiner Pensionsfonds', later 'Versorgung und Ruhegehälter').

<sup>5</sup> Klotz, *Problem der Reparationen*.

<sup>6</sup> We found a single reference, in which, without any substantiation, a military historian declared the question of saved military costs irrelevant; Köllner, *Militär und Finanzen*, p. 46.

<sup>7</sup> Borchardt, *Wachstum*; idem, 'Decade of debate'; James, *German slump*; Ritschl, *Deutschlands Krise*. See also Balderston, *Origins*, ch. 7; Bachmann, *Reichskasse*.

<sup>8</sup> Ferguson, 'Public finance'; Ferguson and Temin, 'Made in Germany'; Schnabel, 'German twin crisis'.

economy inherited from the pre-1914 Empire to excessively generous welfare spending. Nobody questions the fact that reparations placed a burden on the Reich budget (and neither do we). Hence the significance of the question addressed here is obvious: if we find that the involuntary restriction of the army to 100,000 men led to a substantial alleviation of public finances, then the case for political failure is considerably strengthened, as Weimar's politicians were unable to benefit from the peace dividend offered by the Treaty of Versailles.

More specifically, this article addresses two questions. Firstly, how large were the savings for the German central budget, and secondly, how do they compare to the reparation burden? In order to assess the net effects for the central budget, it will also be necessary to discuss briefly the fiscal repercussion effects of increased additional military spending.

Certainly, these research questions are profoundly ahistorical. Without the restrictions of the Treaty of Versailles, Germany would have spent more money on a much larger military. The restriction forced the Weimar Republic to cut public spending, against the preferences of many German taxpayers—but to what extent? In order to answer this question, we construct a counterfactual that takes as given the economic consequences of the Treaty of Versailles and its aftermath, in particular the substantial losses of real and human capital (population, foreign patents, and so on), but assumes that after the German currency stabilization of 1923–4 the allies released the restrictions on the size of the German military and waived the reparations.

The next section is devoted to a brief description of the historical setting. This addresses the financing of the army in the late German Empire and discusses how the Weimar Republic dealt with those stipulations of the Treaty of Versailles that had continuous economic effects. In section III, our approach to assessing the savings effects of the military restriction is discussed in more detail, and several conceptual and methodological problems are addressed. We develop two counterfactual scenarios that will be filled with data in section IV, in which the net effects of saved military costs are compared to the reparation payments. Section V contains an analysis of possible economic repercussion effects that additional military spending might have had on public budgets, finding that even under quite rigorous assumptions the net economic burden of the Treaty of Versailles was much less heavy than has been hitherto thought, in particular if we confine our perspective to the Reich's budget. Section VI concludes.

## II

After unification in 1871, Germany quickly became one of Europe's leading powers. The image of a strong, even aggressive national state, however, obscures the fact that Germany's military power was based on a surprisingly fragile fiscal constitution. The German Empire was a federal state, the Reich, dominated by its largest member state, Prussia. Prussia's electoral law attributed voting power in favour of the elites (because votes were weighted according to the taxes one paid), and thus was much more able to keep the feared socialists at bay than was the Reich, which had a more democratic electoral law. Hence Prussia was very keen to keep the federal state financially dependent—the Reich was called the *Kostgänger* (boarder) of the member states. In particular, the member states kept their hands on the high-yielding income taxes, which were suited better than any other tax to securing the public share of a seemingly ever-increasing national income. In broad terms one can say that the revenues of the member states relied on a mixture of direct taxes, indirect taxes, and the surplus of public operations (such as the very profitable Prussian railways), while the Reich budget was mainly confined to a number of important indirect taxes, in particular customs revenues.<sup>9</sup>

The safeguarding of national security was the main task of the Reich. In the course of Germany's imperialistic quest for a 'place in the sun', the Reich increased military expenditure. Yet, as the Reich took on additional tasks, the share of military expenditure in the Reich budget fell. Shortly after the turn of the century, it still consumed around 45 per cent of the Reich budget. The Reich's fiscal dependency, however, remained unchanged. Ferguson has taken the hypothesis of under-endowment to the extreme. He argues that it was the structural deficiencies of the German fiscal constitution that made an armaments race against Germany's main adversaries (France, Russia, and the UK) hopeless in the long run and thus induced the imperial military to conduct a pre-emptive strike in the summer of 1914.<sup>10</sup>

After Germany's surrender in autumn 1918, both the size of its military and its fiscal constitution were fundamentally changed. In the Treaty of Versailles, Germany and her allies were forced to accept 'the responsibility ... for causing all the loss and damage to which the Allied and Associated Governments and their nationals have been subjected as

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<sup>9</sup> Schremmer, 'Taxation', pp. 465–6; Spoerer, 'Evolution'.

<sup>10</sup> Ferguson, 'Public finance'; idem, *Pity of war*, pp. 135–48.

a consequence of the war imposed upon them by the aggression of Germany and her allies' and the obligation to pay reparations.<sup>11</sup>

The prospect of having to pay large reparations had an important impact on Germany's fiscal constitution. It was obvious that the Reich, not the member states, would have to pay the reparations so that the fundamental fiscal reform which had been discussed for at least two decades became unavoidable. In these reforms, which took place in 1919–20, the Reich's fiscal position was accordingly reversed; now it was the member states who depended on central fiscal grants.<sup>12</sup>

The democratization of Germany and the centralization of her finances, however, did not lead to a more transparent budget, at least in view of military expenditure. In the years preceding the First World War, the federal government did not have any incentive to conceal the armaments programmes. Within Germany they were approved by the elites, and outside Germany the expenditure would have been perceived as a sign of military strength. After the war, when Germany was restricted to a 100,000-man army, a number of secret rearmament programmes had to be camouflaged in the budget. Historical research after the Second World War has uncovered these items. In financial terms, the sums spent in the 1920s on secret rearmament programmes, the 'X-budget', never exceeded 10 per cent of the ordinary (and disclosed) military budget.<sup>13</sup> Hence military and economic historians found that the German military only insignificantly exceeded the limits of the Treaty of Versailles before 1933.<sup>14</sup>

### III

If we want to analyse the extent to which the reparations imposed by the Treaty of Versailles constrained the German governments' fiscal room for manoeuvre, we also have to ask to what extent the restriction of the army to 100,000 men relieved the German budget. Therefore we need a symmetrical counterfactual in which Germany no longer had to pay reparations and was free to determine the size of its military expenditure (depicted in figure 1).

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<sup>11</sup> Treaty of Versailles, articles 231–47 (quotation from article 231).

<sup>12</sup> Holtfrerich, 'Modernization', pp. 126, 133–5.

<sup>13</sup> Nuss, *Militär*, pp. 190, 220, 340, 345; Zeidler, *Reichswehr*, p. 207.

<sup>14</sup> Deist, 'Reichswehr', p. 53; Tooze, *Wages of destruction*, p. 26.

**Figure 1 Historical Situation and Counterfactual**

Reparations? Unconstrained rearmament?	YES	NO
YES	---	Counterfactual
NO	Historical situation	---

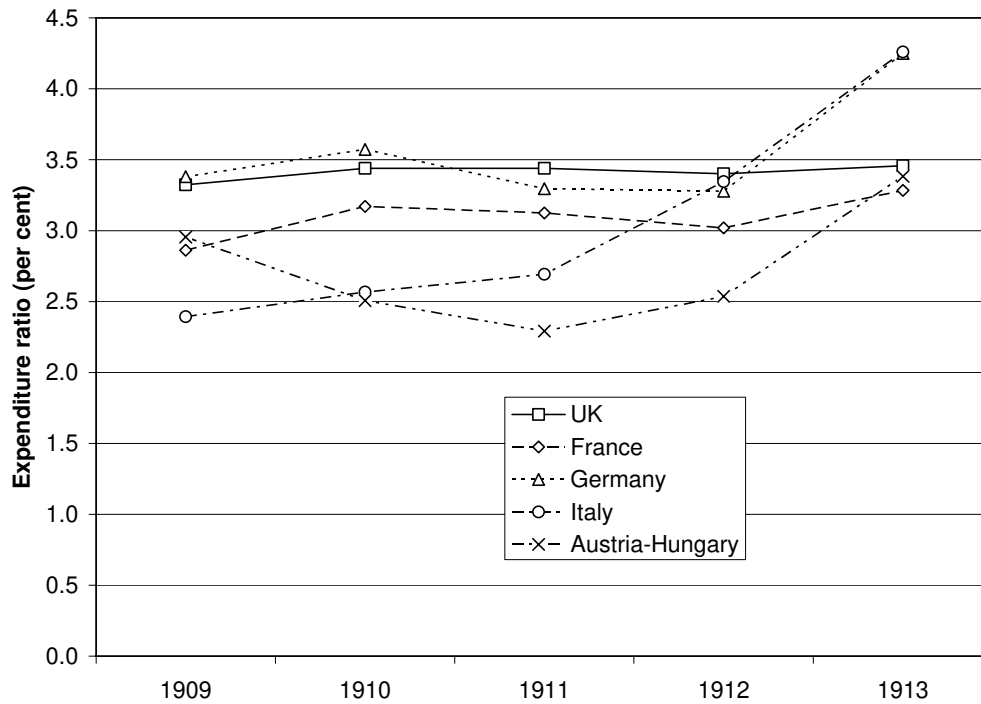
How much would an unrestricted military have cost Germany? A natural point of comparison is the size of military expenditure a few years before the start of the armaments race that led to the First World War. In order to take account of the changes in territory and population imposed by the Treaty of Versailles, it seems reasonable to focus on ratios rather than levels. A first, very rough indicator is the ratio of the size of the military compared to the size of the population (henceforth ‘military ratio’). The ratio of military expenditure to the Reich budget or to total public budgets, a seemingly straightforward concept, is not a sensible measure. The postwar Reich budget comprised many more expenditure items than the prewar budget, especially welfare expenditure. Moreover, as indicated above, the fiscal structure of German public finances was totally redesigned, which renders any effort to compare budgets before and after the war meaningless for our purposes. The most adequate measure is undoubtedly the ratio of military expenditure to GDP (henceforth ‘expenditure ratio’).<sup>15</sup>

It is doubtful, however, whether a democratic Weimar Republic would have had the same inclination for military expenditure as the authoritarian German Empire. Thus in addition to a temporal comparison of prewar and postwar Germany, we also make international comparisons. Germany’s ratios are thus compared to those of France and the UK, who were democratic before and after the First World War, and also with that of a number of other European states and the US. The benchmark year chosen for the prewar period is 1912; other years before 1913 would also be suitable. Figure 2 illustrates that the public finances of the major European countries were affected by the run-up to the First World War only after 1912.<sup>16</sup>

<sup>15</sup> Kennedy, *Rise and fall*, p. 36; Eloranta, ‘Great illusion’, pp. 258–9.

<sup>16</sup> For a similar result, see Eloranta, ‘Great illusion’, p. 261.



**Figure 2**      **The Expenditure Ratio 1909 to 1913**

Sources: Table 2.

We thus derive a grid of pre- and postwar ratios for Germany and several other European countries which allows us to assess a counterfactual estimate for the unconstrained German postwar ratios. This leads to an endogeneity problem. Had Germany been free to allocate as many resources to rearmament as it wished, this might have increased the armaments efforts of its neighbours. We thus construct two sets of counterfactual estimates, which are designed according to whether or not Germany's neighbours perceived it as peaceful.

#### IV

As a first step in the analysis, it is necessary to assess the magnitude of the reparation payments and their sources. Table 1 lists the sources for the reparations actually paid between 1924 and 1929. The figures relate to fiscal years, that is, from 1 April to 31 March of the following year.

**Table 1** Sources for the reparation payments in million RM, 1924-29

	1924	1925	1926	1927	1928	1929	1924-29
Within the <i>Reich</i> budget							
(1) Reich budget ex (2)	0	145.4	276.0	529.8	935.4	956.6	2,843.3
(2) Transport tax	0	145.8	261.0	301.9	265.4	144.8	1,118.8
Outside the <i>Reich</i> budget							
(3) Railway obligations	100.3	396.4	572.1	605.4	658.2	385.0	2,717.3
(4) Industry obligations	0	62.5	187.6	274.7	299.7	423.7	1,248.2
(5) Other financial assets	473.3	330.0	0.0	0.0	0.0	144.4	947.7
(6) = (1) + (2) Total A	0.0	291.3	537.0	831.7	1,200.8	1,101.4	3,962.2
(7) = $\sum$ (1) to (5) Total B	573.6	1,080.1	1,296.7	1,711.7	2,158.8	2,054.5	8,875.4

Notes: Fiscal years from 1 April to 31 March. Figures in the last column not deflated.

Source: *Reichshaushaltsrechnung* (1925-1930).

The expenditure side of the Reich budget was affected by the first two items only (line 6, total A). Railway obligations and industry obligations were forced loans that the newly founded *Deutsche Reichsbahn* and German manufacturing firms had to take out to pay their share of the reparations. Interest and debt repayment were de facto taxes. The obligations as well as the other financial assets were not formally channeled through the budget.<sup>17</sup> Without the reparation burden, however, the Reich would not have been forced to levy the obligations, or would have been in a position to spend the revenues from the obligations otherwise. In any case, Weimar's politicians were free to change the fiscal constitution accordingly. Ignoring these items simply because they were not a formal part of the budget is thus not very sensible. Henceforth, we discriminate between the formal fiscal burden on the Reich budget, total A, and the fiscal burden on what we call the 'central budget', total B. While it may be useful to look only at the Reich budget for questions pertaining to the fiscal margins of Weimar's governments, the concept of the central budget is probably more meaningful for most fiscal and economic issues.

We now turn to the counterfactual additional military costs that an unconstrained Germany would have faced. Table 2 presents information on the ratios of soldiers per head of population and the share of military expenditure in GDP (in nominal terms and in local currencies unless otherwise stated).

<sup>17</sup> Cf. *Reichshaushaltsplan* (1928), section XX, p. 37, and annotations, p. 11.

**Table 2** Military ratios and expenditure ratios for several European countries and the United States, 1912-13 and 1924/1928

	Military ratio			Expenditure ratio		
	1912-13	1924	in %	1912	1928	in %
Germany	1.18	0.19	16	3.28	0.93	28
France	2.13	1.95	92	3.02	2.56	85
United Kingdom	0.81	0.77	95	3.40	2.77	81
Italy	0.83	0.64	77	3.35	2.94	88
Austria				2.54	0.84	33
Russia				3.69	2.37	64
Denmark	0.66	0.89	135	1.42	1.10	78
Belgium	0.78	1.03	132	1.20	1.34	112
Switzerland	0.38	0.39	103	1.14 <sup>a</sup>	0.88	77
United States	0.09	0.10	111	0.89	0.84	94

Notes: <sup>a</sup> 1913

Sources:

Military: *Militärwochenblatt* (1924), no. 19, p. 522; *Annuaire militaire* (1924, 1926).

Population: Maddison, *World Economy*, pp. 36-9, 43-4, 82, 96.

Expenditure ratio Belgium Clement, *Government consumption*, Tables 1 and 18; Switzerland 1928:

Eloranta, *Demand*, database milecon11.xls.

Military expenditure in local currencies: Denmark Johansen, *Dansk økonomisk statistik*, pp. 351-8, for 1912 all other from Stevenson, *Armaments*, p. 2, for 1928 Germany Statistisches Reichsamt, *Statistisches Jahrbuch 1931*, p. 438, all remaining from Statistisches Reichsamt, *Finanzen*, pp. 807-33.

Nominal GDP in local currencies: Austria Kausel, Németh and Seidel, *Österreichs Volkseinkommen*, p. 44;

Denmark Johansen, *Dansk økonomisk statistik*, pp. 392; France Toutain, 'Produit intérieur', pp. 57-58;

Germany Ritschl and Spoerer, 'Bruttosozialprodukt', p. 51; Italy Rossi, Sorgato and Toniolo, 'Conti economici', p. 22; Russia Gregory, *Russian national income*, pp. 55, 59; UK Feinstein, *Statistical tables*, T12, col. 5; USA Kuznets, *Capital*, p. 562; USSR: Bergson, *Real national income*, p. 128.

The military ratios show that the restriction to 100,000 men made—in relative terms—the German army of the 1920s the smallest one in Europe. As the ratios for France and the UK decreased only slightly between 1912/13 and 1924, one might be tempted to put the hypothetical unconstrained German military ratio at about 1.0 which means the actual size times five, that is, nearly 600,000 men (in 1912, for a larger Germany, 720,000).

It would be premature, however, to inflate the counterfactual German military expenditure by a factor of five as well. The strategy of the German military after 1919 was to work with a well-equipped rump army so that, once the 100,000-men constraint was removed, the ranks could be filled quickly with fresh recruits. Hence, despite the restrictions on heavy weapons such as battleships, submarines, tanks, and aircrafts, the capital intensity of the German army was probably higher than that of its counterparts.<sup>18</sup>

<sup>18</sup> It still was in the mid-1930s; see Köllner, *Militär und Finanzen*, p. 188.

The difficulties in accounting for the differences in the structures of the European military (army vs. navy, capital intensity) underlines once more the fact that the expenditure ratio is a more appropriate measure than the military ratio. We have chosen the year 1928 because German military expenditure reached its maximum in that year; hence the choice of 1928 is the least favourable for our hypotheses developed below.<sup>19</sup>

With regard to the expenditure ratio, the important message from table 2 is that before the First World War, all major European powers spent between 2.5 and 3.7 per cent of their GDP on armaments purposes regardless of whether they focused on the navy or the army. After the war, they quite uniformly reduced that share to between 2.5 and 3 per cent, or about 80–90 per cent of the prewar ratios. This grid serves as a benchmark for our counterfactual estimate.

In 1912, the German expenditure ratio was close to 3.3 and thus within the range of the other major European powers.<sup>20</sup> If we take the averages of the 1912 and 1928 ratios for France and the UK as a benchmark, then the unconstrained German expenditure ratio for 1928 would be  $(3.28 * 0.83 =) 2.72$  rather than 0.93. In other words, unconstrained military expenditure in Germany would have risen by 190 per cent in the peaceful scenario a.

This, however, is a static perspective. From a dynamic perspective that allows for endogeneity, one has to consider that an unconstrained Germany spending large sums on rearmament might have had effects on the military spending of her neighbours so that the strategic situation would resemble that before the First World War. If we take the pre-First World War equilibrium of 1912 as the benchmark, then Germany's unconstrained military expenditure would have been simply 3.28. In other words, military costs would have risen by 250 per cent (scenario b).<sup>21</sup>

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<sup>19</sup> As the League of Nations stopped publishing defence figures after 1928, we have to rely on the figures reported by a German official publication, Statistisches Reichsamt, ed., *Finanzen*, pp. 807–33. We cross-checked whether the defence data for 1926 and 1927 in this source deviate from the last data published by the League of Nations (*Annuaire statistique*, pp. 177–9). The deviation is not much larger than 10% for any of the European countries reported on here.

<sup>20</sup> Our results deviate only slightly from those in Hobson, 'Military-extraction gap', pp. 478–9, and Stevenson, *Armaments*, p. 6, who use net national product rather than GDP, convert (1) NNP into constant prices and (2) all currencies into sterling, neither of which are necessary for our purposes and may even lead to distortions.

<sup>21</sup> The multiplication factors a and b are derived from the ratio of the counterfactual expenditure ratios to the actual expenditure ratios; that is,  $2.72/0.93 - 1 = 1.92$  for scenario a,  $3.28/0.93 - 1 = 2.53$  for scenario b.

Having derived the multiplication factors a (190 per cent) and b (250 per cent), we are now able to compute Germany's counterfactual military expenses in the second half of the 1920s and set them in relation to the reparation payments (table 3).

**Table 3**      **Reparation payments and counterfactual military expenses, 1924-29, in million RM**

	1924	1925	1926	1927	1928	1929	1924-29
Gross domestic product	n.a.	71,214.0	73,828.0	83,157.0	89,042.0	89,322.0	
Reparation burden							
(1) <i>Reich</i> budget A	0.0	291.3	537.0	831.7	1,200.8	1,101.4	3,962.2
(2) central budget B	573.6	1,080.1	1,296.7	1,711.7	2,158.8	2,054.5	8,875.4
Military expenditure							
(3) actual	427.2	633.3	704.2	769.2	827.0	757.5	4,118.4
Net additional counterfactual							
(4) Scenario a (+190%)	811.7	1,203.3	1,338.0	1,461.5	1,571.3	1,439.3	7,825.0
(5) Scenario b (+250%)	1,068.0	1,583.3	1,760.5	1,923.0	2,067.5	1,893.8	10,296.0
Net counterfactual expenditure							
(6) = (4) – (2) Ba	238.1	123.1	41.3	-250.2	-587.5	-615.2	-1,050.4
(7) = (5) – (2) Bb	494.4	503.1	463.8	211.3	-91.3	-160.7	1,420.6

Notes: Fiscal years from 1 April to 31 March. Secret military expenditure not included in line (3) because it would have been overt in the counterfactual situation. Figures in the last column not deflated.

Sources: Table 2, text.

The results are striking. If we confine our analysis to a comparison of the reparation burden borne by the Reich budget (calculation A, table 3, line 1) and the peaceful counterfactual (scenario a, line 4) then it becomes clear that over the whole period an unconstrained Reich would have spent nearly four billion RM more on additional armament expenses than it actually paid for reparations (line 4 minus line 1). This, however, is a somewhat superficial view. As argued above, although the main sources for the reparation payments were not formally channelled through the Reich budget they should nevertheless be interpreted as foregone tax revenues. Hence calculation B is probably more adequate to assess the fiscal burden of unconstrained military expenditure.

If we assume that an unconstrained Germany was able to convince her neighbours that the rearmament was only for defensive purposes, the burden of the additional rearmament expenditure would have outweighed that of the reparations until 1926 and

would have equalled more than two-thirds of the reparation burden thereafter (scenario Ba, line 6), the net effect over the whole period being one billion RM more in reparation payments than in saved military costs. If Germany's increased military spending had alerted her neighbours, a modest armaments race like the one preceding the First World War would have brought the expenditure ratio to 3.28 (as in 1912) and the additional military expenditure would have been less than the reparation payments, and only in small amounts, after 1927, the net effect over the whole period being a saving of nearly one and a half billion RM. In other words, even if the total central budget is taken into account (calculation B) the reparations were, depending on the character of Germany's foreign policy, either only somewhat larger or even less than the self-imposed military burden.

## V

In fiscal terms, our analysis has resulted in an astonishingly clear answer: the reparations cost the Weimar Republic not much more than unconstrained military spending would have. Were the reparations just the scapegoat on which Weimar's politicians put the blame for their fiscal carelessness? This conclusion would be premature, as we have to assess whether military spending would have had beneficial effects for the Weimar economy which in turn would have refilled the public coffers.

In a democracy, the legitimization for defence spending is that the military protects the country against external threats. This would undoubtedly have been the argument of Weimar's politicians to enforce additional military expenditure had they been free to do so. However, we have the benefit of hindsight. Before Hitler came to power, Germany had not been attacked by foreign powers, nor had it been the subject of military extortion after 1923. In fact, the Treaty of Versailles served as a protection device for Germany, as France and The UK (and indirectly the US as their creditor) had an interest in receiving the reparation payments, which was a credible deterrent for potential invaders from other countries. Hence the 100,000-man army was fully sufficient for defensive purposes.<sup>22</sup>

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<sup>22</sup> If there was anything like a threat, it was Poland. However, Poland was reckoned not to have any further territorial claims against Germany. The situation changed only somewhat when General Pilsudski came to power in 1926; see Schattkowsky, 'Im Schatten von Versailles'; Burk, 'Planungen', pp. 43–5.

If a larger army did not have political benefits, would it have been beneficial in economic terms? The resources that Germany spent on reparations were lost.<sup>23</sup> In contrast, the additional resources that could have been invested in military spending would have remained in the domestic economy. This raises the more general question of whether defence expenditure has beneficial economic effects. In the macroeconomic literature, which relies on the augmented Solow or the Barro models, the long-term impact of defence expenditure is usually found to be zero or negative, thus confirming the Cobdenite assumption that military expenditure retards economic growth.<sup>24</sup>

One might speculate, however, that military expenditure might have boosted the Weimar economy in the short term. Obviously, the question of whether increased military spending would have had any real effect depends on the extent of German industry's excess capacity in the second half of the 1920s. If the capacity was fully utilized, additional military spending would simply have crowded out private demand or investment. Table 4 illustrates the capacity utilization in German industry and commerce.

**Table 4** Capacity utilization in German manufacturing, 1924-29 (per cent)

	1924	1925	1926	1927	1928	1929
Industry and commerce	84	89	81	90	90	88
Investment goods industry					73 <sup>a</sup>	70
Vehicles					50 <sup>a</sup>	57
Electrical engineering					80 <sup>a</sup>	78
Precision instrum., optical					71 <sup>a</sup>	63
Textile industry					74 <sup>a</sup>	72

Notes: <sup>a</sup> July to December only. Capacity utilization measured by ratio of workers actually employed to potential workplaces in the first line, and elsewhere by ratio of hours actually worked to potential hours.

Sources: First line Balderston, *Origins*, p. 373, col. B; all other Wagemann, *Konjunkturstatistisches Handbuch*, pp. 25-31.

According to Balderston's estimates (first line), German firms were on average working close to capacity, and additional military procurement would have simply crowded out civilian orders. This fits with anecdotal evidence that German industrialists were reluctant

<sup>23</sup> In fact, rather than earning current account surpluses to finance the reparations Germany attracted large foreign capital inflows so that her foreign debt was commercialized; see Ritschl, "Dancing on a volcano". Yet the massive inflows of foreign capital affected the central budgets at best indirectly via higher tax revenues and higher interest costs.

<sup>24</sup> Sala-i-Martin, Doppelhofer, and Miller, 'Determinants of long-term growth', pp. 824-5; Dunne, Smith, and Willenbockel, 'Models of military expenditure'; Aizenman and Glick, 'Military expenditure'.

to seek military procurement contracts. Only later, in the course of the great slump, did industrialists seek to contact the army.<sup>25</sup>

However, a closer inspection of industrial capacity utilization reveals that at least in some businesses military procurement might have been welcome. In the second half of 1928, the first period for which detailed branch data are available, the capacity utilization in vehicles, instruments and optics, and the textile industry was far below the average (table 4).

Hence, for the sake of the argument, it might make sense to assume that an increase in military expenditure had positive short-term repercussion effects on the economy via military procurement contracts and soldiers' wages. In order to assess the magnitude of possible repercussions on the central budgets, it is necessary to have data on the multiplier of armaments expenditure and the tax quota. Following Ritschl's analysis, the multiplier of government expenditure in the Weimar Republic between 1925 and 1930 was close to zero, with a maximum in 1927 (approximately 0.5).<sup>26</sup> In the following, we nevertheless assume a value of one, which is presumably quite high, in particular for armaments expenditure.<sup>27</sup> The tax quota amounted to 15 per cent throughout the second half of the 1920s.<sup>28</sup> Table 5 replicates the results of table 3 assuming that 50 per cent of the additional taxes went into the central budgets. Lines 4 and 5 include additional military costs net of additional tax revenues which flow back to the central budgets.

In both lines 6 and 7, the sign reverses one year earlier than in table 3, but the main results remain unchanged. In 1929, the net burden of the reparations compared to unrestricted rearmament turns out at some 700 million (peaceful scenario a') or 300 million (aggressive scenario b') RM. In the latter case, and viewed over the whole period, the payment of reparations is still 0.65 billion RM less costly than having an unrestricted army. If one confines the perspective to the Reich budget, the starting point of our analysis, the main finding is still unequivocally that paying reparations was cheaper than financing the build-up of a new, powerful German army. Figure 3 illustrates this for the fiscal year 1927/8, the peak of the Weimar Republic's business cycle. Although additional military spending leads to an increase in the Reich budget due to induced tax revenues,

<sup>25</sup> Hansen, *Reichswehr*, pp. 205–6; see also Nuss, *Militär*, p. 191.

<sup>26</sup> Ritschl, *Deutschlands Krise*, pp. 58, 67.

<sup>27</sup> Note that we neglect the substantial savings that emerge from a reduction of unemployment and welfare relief had more soldiers been on the military payroll.



what remains for non-defence purposes becomes smaller, as the additional military costs are larger than the waived reparation payments.

**Table 5**      **Reparation payments and counterfactual military expenses including multiplier effects, 1924-29, in million RM**

	1924	1925	1926	1927	1928	1929	1924-29
Gross domestic product							
Scenario a'	n.a.	72,411	75,166	84,618	90,613	90,761	
Scenario b'	n.a.	72,791	75,589	85,080	91,110	91,216	
Reparation burden							
(1) <i>Reich</i> budget A	0.0	291.3	537.0	831.7	1,200.8	1,101.4	3,962.2
(2) central budget B	573.6	1,080.1	1,296.7	1,711.7	2,158.8	2,054.5	8,875.4
Military expenditure							
(3) actual	427.2	633.3	704.2	769.2	827.0	757.5	4,118.4
Net additional counterfactual							
(4) Scenario a' (+176%)	750.8	1,113.0	1,237.6	1,351.9	1,453.5	1,331.3	7,238.1
(5) Scenario b' (+231%)	987.9	1,464.5	1,628.5	1,778.8	1,912.4	1,751.7	9,523.8
Net counterfactual expenditure							
(6) = (4) – (2) Ba'	177.2	32.9	-59.1	-359.8	-705.3	-723.2	-1,637.3
(7) = (5) – (2) Bb'	414.3	384.4	331.7	67.1	-246.3	-302.8	648.4

Notes: Fiscal years from 1 April to 31 March. Secret military expenditure not included in line (3) because it would have been overt in the counterfactual situation. Figures in the last column not deflated.

Sources: Table 2 and text.

## VI

A lot of the reasoning in this article is necessarily speculative, and one might imagine different scenarios which lead to modified results. However, the main message should be clear. The Treaty of Versailles put a large burden on the Weimar Republic, which had to pay for the sins of the elites ruling prior to 1918. Nevertheless, the restriction of the army to 100,000 men, though politically a humiliation, was beneficial in fiscal terms. From a purely formal perspective, even our most conservative scenario (Aa') puts the additional military costs of an unconstrained German military much higher than the reparations which had to be paid directly from the Reich budget. Hence the restriction of the size of the army was clearly beneficial for the Reich budget. From a less narrow fiscal perspective—that is, if the total budgetary and non-budgetary reparation burden is

<sup>28</sup> Calculated from Statistisches Reichsamt, ed., *Finanzen*, p. 224, and Ritschl and Spoerer, 'Bruttosozialprodukt', pp. 53–4.

compared to the hypothetical additional military costs—the answer depends on whether Germany would have been able to convince its neighbours that it was peaceful. Had it succeeded, in this scenario (Ba') Germany would have borne additional military costs that amounted in the late 1920s to more than 80 per cent of the reparation payments (table 5, last column, lines 4 and 2). If, however, Germany's neighbours remained sceptical, a modest arms race would have led to costs for Germany that outweighed the full fiscal burden of the reparation. In both scenarios the Treaty of Versailles, while overall clearly a burden on the German economy, also offered a substantial peace dividend for Weimar's non-revanchist budget politicians. The fact that they did not make sufficient use of this imposed gift supports the hypothesis that the Weimar Republic suffered from home-made political failure.

#### APPENDIX: THE STRUCTURE OF THE GERMAN BUDGETS, 1924/5–1929/30

The receipt-expenditure accounting of the Reich is systematically conceived in such a way that it first depicts the receipts, followed by the expenditures of the different discrete budgets in a highly simplified manner. The discrete budgets are divided into sections relating to the President of the German Reich, the Reich Ministry of the Interior, the Reich Ministry of the Armed Forces, and the Reich Ministry of Labour. Including a short repetition of the summation of the discrete budgets (included in the receipt-expenditure accounting for the purpose of monitoring), this part of the receipt-expenditure accounting of the Reich consists of approximately 30 pages. In the remaining part (usually over 400 pages), the focus is again on the discrete budgets.

The budget of the Reich can be divided into an ordinary budget consisting of continuous expenditures and discrete expenditures, and an extraordinary budget. Article 87 of the Weimar Constitution stipulates that loans can only be granted in cases of extraordinary purposes and, in addition, if used for 'promoting purposes' (for example, investments).

After presenting the ordinary receipts, the first overview of the discrete budgets displays subsection (a) of the ordinary expenditures. This subsection contains the continuous expenditures of the Reich budget. The Reich Ministry of the Armed Forces is divided into four subsections, (A) representing the Reich Minister, (B) the Department of the Armed Forces (*Heereswesen*), (C) institutions not belonging to the Armed Forces (that is, the 'Peace Commission' (*Friedenskommission*)), and (D) the navy. Non-recurring expenditures are represented in subsection (b) of the ordinary budget, following the same

scheme as in subsection (a). It follows an overview of the extraordinary budget. According to the scheme described earlier, the extraordinary receipts are followed by the extraordinary expenditures in four subsections, A–D. The declared totals are included in table 3, line 3. Overall, they sum up to the total expenditure budget of the Reich Ministry of the Armed Forces.

#### *How total defence expenditure is calculated*

For the period 1924–7, the war burden is recorded in a separate budget. This second budget consists of book entries which are represented in the primary budget within the subsection ‘General Financial Administration’. Consequently, this leads to a prolongation of the overall budget.

In order to derive meaningful ratios of the discrete budgets in relation to the overall expenditures, this step has to be reversed. This can be achieved by subtracting the expenditures of the war burden budget from the sum of all expenditures. In order to be able to compare the discrete budgets with each other, it is necessary to subtract the war burden expenditures from the expenditures of the ‘General Financial Administration’.

#### *The war burden budget*

The ordinary part of the war burden budget for the period 1924–7 includes, as an example, payments that correspond to the occupation of the Rhineland. The payments attached to the Dawes Plan are displayed in the extraordinary budget under the heading ‘In fulfillment of the external expert opinion’. The discrete figures can be found in a later and more extensive section under the heading ‘XX War burden’ (called ‘XX Execution of the peace treaty’ in the budget for 1924). For 1928, the war burden budget is no longer accounted for as a special budget. Hence, the Dawes payments are listed under ‘XX War burden’ within the ordinary budget. Furthermore, in 1928 the payments of the industry and railroad obligations are no longer accounted for by the budget. They are listed in the notes of the receipt-expenditure accounting and are thus only represented in quotation marks in the table. They serve as a completion of the Dawes figures.

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