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The Imposed Gift of Versailles: The Fiscal and Ecomic Effects of the German 100,000-Men Army

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1.   Introduction

"No Hitler without Versailles"– although this may be somewhat simplified, most historians agree that the Versailles Treaty of June 1919 was a necessary condition for the rise of the national socialist movement in Germany. The argument is usually put forward in a twofold way. Mentally, nearly all Germans considered the provisions of the Versailles Treaty as a national humiliation which fuelled revanchist claims. Economically, 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 in the 1920s. Between 1924 and 1930 the German economy was deprived of between one and 2,5 billion *Reichsmark* (RM) annually which amounted to nearly 3 per cent of Germany's gross domestic product (GDP). The economic consequences of the Versailles Treaty, however, were not confined to the issue of reparations, territorial and human capital losses. Neither (economic) historians nor—as far as we see—contemporaries have ever discussed the *economic* consequences of another provision of the treaty that has always been analysed in *political* terms: Germany was forced to reduce her military personnel to merely 100,000 army and 15,000 navy soldiers. 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*'s budget and must have enlarged the fiscal margins for the German governments.

The fact that this aspect 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 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 pursue the argument that Brüning did not have much room of manoeuvre stress that the precarious situation of the *Reich*'s budget restrained Brüning enormously (Borchardt, 1982, 1990; James, 1986; Ritschl, 2002; see also Balderston, 1993, ch. 7). This was all the more so as large parts of the public were hostile to expansionary fiscal policies that were believed to lead to inflation, like in the period from the end of World War I to 1923. Second, the precarious state of the *Reich*'s finances is believed having contributed to the banking crisis of July 1931 during which Germany had to abandon the gold standard (Ferguson and Temin 2003; Schnabel, 2004).

The question why Germany's finances were in such a desperate state is usually explained by a number of factors which range from structural weaknesses of the German economy inherited from the pre-1914 Empire to much too generous welfare spending. Hence the significance of the question addressed here is obvious: If we find that the unvoluntary restriction to a 100,000 men army led to a substantial alleviation of public finances, then the case for political failure is much more strengthened.

In the paper, we address two questions: First, how large were the savings for the German budget, and how did they, in *fiscal* terms, compare to the reparation burden? Second, what were the *economic* effects for the German economy? In particular, what are the differences in economic terms between transferring goods and services abroad without compensation (reparations) and saving the economy from producing goods and services for public consumption that, seen with the benefit of hindsight, was of little if any use (military expenditure), but might have had Keynesian multplicator effects?

To be sure, our research questions are profoundly ahistorical. The contemporaries seem to have never discussed the issue of saved military costs, neither in the media nor in the *Reichstag*, the German parliament (see Klotz, 1996). Without the restrictions of the Versailles Treaty Germany would have spent much more money on a much larger military. Insofar the restriction forced Germany to cut public spending against her will.

How much? To answer this question, we construct a counterfactual that takes as given the economic consequences of the Versailles Treaty and its aftermath, but assumes that after the German currency stabilization of 1923-24 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. We deal with the size and financing of the army in the late German Empire and discuss how the Weimar Republic dealt with those stipulations of the Versailles Treaty that had lasting economic effects. In particular,

we describe how the reparations were procured and transferred under the regime of the Dawes Plan and how much Germany spent on her military, including armaments projects that were kept secret at the time.

In section 3 we discuss our approach how to assess the savings effects of the restriction of the German army in more detail and address several conceptual and methodological problems. We develop a number of counterfactual scenarios that will be filled with data in section 4 in which we also compare the savings in the *Reich* budget and the reparation payments. Finally, a rough assessment of the economic effects is discussed in section 5. Section 6 concludes.

2.   The German Military, the Budget and the Versailles Treaty

After the unification in 1871, Germany quickly became one of Europe's leading powers. The image of a strong, even aggressive national state, however, obscures that Germany's military power was based on a surprising fragile fiscal constitution. The German Empire was a federal state dominated by Prussia. Prussia's electoral law attributed the voting power in favour of the elites and thus was much more apt to keep the feared socialists at bay as was the *Reich* which had a more democratic electoral law. Hence Prussia was very keen on keeping the federal state dependent of the states—the *Reich* was called the *Kostgänger* (boarder) of the states. In particular, the latter kept their hands on the high-yielding income taxes which were suited better than any other tax to secure the public share of a seemingly ever-increasing national product. In broad terms one can say that the state revenues relied on a mix of direct taxes, indirect taxes and the surplus of public operations while the *Reich* was mainly confined to a number of important indirect taxes, in particular customs revenues (Schremmer 1989; Spoerer, 2004: 107-9; *idem*, 2007).

To safeguard national security was the main competence of the federal state and swallowed around 90 per cent of its budget. In the course of Germany's quest for a "place in the sun" the *Reich* increased military expenditure. The *Reich*'s fiscal dependency, however, remained unchanged. Hence Niall Ferguson (1994, 1998, chs. 5, 10) has even argued that the structural deficiencies of the German fiscal constitution led her elites to believe that Germany would not be able to cope with her main competitors in an armaments race and thus started a pre-emptive war.

After Germany's surrender in autumn 1918, both the size of her military and the fiscal constitution were fundamentally changed. In the Versailles Treaty, Germany and her allies accepted "the responsibility [...] for causing all the loss and damage to which the Allied and Associated Governments and their nationals have been subjected as a consequence of the war imposed upon them by the aggression of Germany and her allies" and the obligation to pay reparations (Versailles Treaty, Articles 231 (quote) to 247).

The prospect of having to pay large reparations had important impact on Germany's fiscal constitution. It was obvious that the *Reich*, not the states, would have to pay the reparations so that the fundamental fiscal reform which had been discussed since at least two decades was imminent. In the reforms of 1919-20, The *Reich*'s fiscal position was reversed; now it was the states who depended on central fiscal grants (Holtfrerich, 1987: 126, 133-5).

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 World War I, the federal government did not have incentives to conceal the armaments programs. Within Germany they were approved by the elites, and outside Germany the size of her military expenditure should signal military strength. After the war, when Germany was constrained to a 100,000-men army, a number of secret rearmament programs had to be camouflaged in the budget. Historical research after World War II, however, has uncovered these items so that they are included in the calculations that follow. In financial terms, the sums spent in the 1920s on secret rearmament programs, the 'X-budget' never exceeded ten per cent of the ordinary military budget (Zeidler, 1993: 207). Hence military historians argue that the German military hardly went beyond the limits of the Versailles Treaty before 1933 (Deist, 2001: 53).

3.   Methodology

For an assessment in how far the restriction to a 100,000-men army restricted German military expenditure, we need a counterfactual situation. We depart from the assumption that Germany did no longer have to pay reparations and had been free to determine her military expenditure. How much would that have been? A natural point of comparison is the size of military expenditure a few years before the armaments race that led to World War I took off. In order to take account of the changes in territory and population imposed by the Versailles Treaty, 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. A more adequate measure is the size of military expenditure to GDP (Kennedy, 1975, p. 36). Not sensible, however, is the ratio of military expenditure to the total budget. First, as indicated above, the fiscal structure of German public finances was totally redesigned which renders any effort of comparing central budgets before and after the war meaningless. Second, the post-war budget comprised many more expenditure items than the pre-war budget, especially social welfare.

Apart from comparing German ratios over time it is also helpful to assess them in an international framework. Hence we also look at France and Great Britain, and also on a number of other European states, among them Germany's neighbours.

We thus derive a grid of pre- and post-war ratios for Germany and several other European countries which allow us to assess a counterfactual estimate for the unconstrained German post-war ratios. This leads to an endogeneity problem. Had Germany been free to allocate as many resources to rearmament as she wished, this would have increased the armaments efforts of her rivals. We thus need a second pair of counterfactual estimates which are designed around the pre-WWI ratios.

Finally, we have to take a closer look at the German central budgets unter the regime of the Dawes Plan. Table 1 lists the sources for the reparation payments from 1924 to 1928. The figures relate to fiscal years, that is from 1 April to 31 March.

Table 1   **Sources for the reparation payments in 1,000 RM**

	1924	1925	1926	1927	1928
(1) *Reich* budget (ex (2))	0	145,833	168,333	529,500	937,500
(2) Transport tax	0	145,833	273,333	301,667	290,000
(3) Railway obligations	100,000	397,500	572,500	605,000	660,000
(4) Industry obligations	0	72,917	187,500	275,000	300,000
(5) Other financial assets	466,667	333,333	0	0	0
Total A (1) + (2)	0	291,666	441,666	831,167	1,227,500
Total B (1) to (5)	566,667	1,095,416	1,201,666	1,711,167	2,187,500

Sources: *Reichshaushaltsplan: Entwurf für das Rechnungsjahr 192.*, Berlin: Reichsdruckerei 1924-1928.

The expenditure side of the *Reich* budget was affected by the first two items only (total A). The railway obligations, the industry obligations and the other financial assets (the Dawes loan) were formally not channeled through the budget.[1] Without the reparation burden, however, the *Reich* would not have been forced to levy the obligations, or would have been in the position to spend the revenues otherwise. Henceforth, we discriminate between the formal burden for the central budget, total A, and the fiscal burden for the central public finances, total B.

4.   Soldiers, Military Expenditure and Reparations

Table 2 informs on the ratios of soldiers per head of population and the share of military expenditure in GDP (in nominal terms and in local currencies if not stated otherwise).[2]

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[1] Cf. *Reichshaushaltsplan: Entwurf für das Rechnungsjahr 1928*, Berlin 1928, section XX, p. 37, and annotations, p. 11.

[2] In the next version of the paper, we will use ratios for 1912 which is the last year before the pre-WWI armaments race set in, see the ratios in Hobson (1993), pp. 478f. – Moreover, we will probably switch the source for the military strengths from the biased German *Militärwochenblatt* to the League of Nations' *Armaments Yearbook*.

Table 2   **Armament ratios for several European countries, 1914 and 1924**

	soldiers / population		military expenditure / GDP	
	1914	1924	19..	1928
Germany	1.18	0.19	3.28 (1912)	0.93
France	2.13	1.95	3.66 (1913)	2.56
United Kingdom	0.81	0.77	3.46 (1913)	2.77
Denmark*	0.66	0.89		0.95
Belgium*	0.78	1.03		1.01
Switzerland	0.38	0.39	1.14 (1913)	0.89
Tchechoslovakia		1.49		1.91 (1929)
Poland		0.96		4.98
Italy	0.83	0.64	3.91 (1913)	2.94
Spain	0.56	0.70		
Norway*				0.94
Sweden*				1.50
United States	0.09	0.10	0.89 (1912)	0.84

Sources: military *Militärwochenblatt* (1924), no. 19, p. 522; population Maddison (2003), pp. 36-9, 43f., 82, 96; military expenditure in local currencies *Statistisches Reichsamt* (1930), pp. 807-33; nominal GDP in local currencies US Kuznets (1961), p. 562; UK Feinstein (1972),T12, col. 5; France Toutain (1997), p. 57f.; Germany Ritschl and Spoerer (1997), p. 51; Belgium Carbonelle (1959), p. 359; Italy Rossi, Sorgato and Toniolo (1993), p. 22; Switzerland *Historische Statistik* (1996), p. 866, 871, 874; Austria Kausel, Németh and Seidel (1965), p. 44; Tchechoslovkia Pryor et al. (1971), p. 38; Poland information supplied by Niko Wolf, University of Warwick; for countries marked by an asterisk nominal GDP (in US-$) kindly supplied by Giovanni Federico, EUI Florence, and converted into US-$ by http://eh.net/hmit/exchangerates (3 Oct 2006).

The soldier by population ratio shows that the restriction to 100,000 men made—in relative terms—the German army the smallest one in Europe, even half the size of that of neutral Switzerland. As the ratios for France and the UK decreased only slightly between 1914 and 1924 one might be tempted to put the hypothetical unconstrained German ratio to about 1.0 which means the actual size times five, i.e. nearly 600,000 men.[3]

It would be premature, however, to inflate actual German military expenditure by a factor of five as well. The strategy of the German military was to work with a well-equipped rump army so that, once the 100,000-men constraint was relieved, the ranks could be quickly filled with fresh recruits. Hence the capital-labor ratio of the German army was probably higher than that of its counterparts. In 1912, the German military expenditure to GDP ratio was close to 3.3 and only slightly lower than that of France and the UK in 1913.[4] If we take the averages of the 1913 and 1928 ratios for France and the UK as benchmark, then the German ratio for 1928 would be 2.45 rather than 0.93. In other words, unconstrained military expenditure would have risen by 150 per cent (scenario a).

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[3] The actual official German military consisted of 100,000 men in the army and 16,000 in the navy.

[4] The ratio for Germany jumped to 4.3 in 1913 due to an enormous armaments program. Our results deviate only slightly from thoe in Hobson (1993), pp. 478f., who uses net national product rather than GDP and converts all currencies to Sterling, which is not necessary for our purposes and may even lead to distortions.

This however, is a static perspective. From a dynamic perspective which allows for endogeneity, one has to consider that an unconstrained Germany spending a lot on rearmament might have had effects on the military spending of her neighbours. If we take the pre-WWI equilibrium as the benchmark, then Germany's unconstrained military expenditure had risen by 350 per cent (scenario b).

We are now able to compute Germany's counterfactual military expenses in the second half of the 1920s.

Table 3   **Reparation payments and counterfactual military expenses, 1924-1928, in 1,000 RM**

	1924	1925	1926	1927	1928
Reparation burden					
(1) Scenario A	0	291,666	441,666	831,167	1,227,500
(2) Scenario B	566,667	1,095,416	1,201,666	1,711,167	2,187,500
Military expenses					
(3) actual		633,300	704,200	769,400	827,000
additional counterfactual					
(4) Scenario a (+150%)		949,950	1,056,300	1,154,100	1,240,500
(5) Scenario b (+250%)		1,583,250	1,760,500	1,923,500	2,067,500
Net					
B and a (6) = (2) − (4)		145,466	145,366	557,067	947,000
B and b (7) = (2) − (5)		-487,834	-558,834	-212,333	120,000

Sources: Table 2, text.

The results are striking. If we confine our analysis to a comparison of the reparation burden borne by the *Reich* central budget (scenario A) and the conservative counterfactual (scenario a) then it becomes clear that an unconstrained *Reich* would have spent much more on additional armament expenses than it actually paid for reparations. This, however, is a very formal view. As argued above, although the main sources for the reparation payments were not formally channeled through the *Reich* budget they should nevertheless be interpreted as foregone tax revenues. Hence Scenario B seems more adequate for the fiscal burden of unconstrained military expenditure.

If we assume that an unconstrained Germany was for some reason able to convince her neighbours that the rearmament was only for defensive purposes—quite unrealistic given the overt revanchism in post-WWI Germany—, the burden of the additional rearmament expenditure would have outweighed that of the reparations until 1925 and would have still equalled more than half of the reparation burden in 1928 (Scenarios B and a, line 6). If Germany's increased military spending had alerted her neighbours, a modest armaments race would have brought the military expenditure to GDP ratio to more than 3.0 and the additional military expenditures would not have been equalled by the reparation payments until 1928. From

1929 onwards, the Dawes Plan foresaw annual payments of 2.5 billion RM which were reduced by the same year's Young Plan to 2.0 million. This was harsh, but had Germany been unconstrained, it would have spent more on her military. Hence, seen from a fiscal perspective, the fiscal burden imposed by the reparation plan were not as large as the self-imposed military burden had Germany been free to determine her military budget.

5. Would more military spending have boosted the Weimar economy?

In fiscal terms, our analysis has resulted in an astonishingly clear answer: the reparations cost the Weimar Republic not more than unconstrained military spending would have cost it. Were the reparations just the scapegoat on which Weimar's politicians put the blame for their fiscal carelessness? We cannot yet answer this question as we have to assess whether military spending would have had any beneficial effects for Weimar Germany.

In a democracy, the legitimation 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 neither had been attacked by foreign powers, nor had she been subject of military extortion. Hence we know that the 100,000-men army was fully sufficient for defensive purposes.[5]

If a larger army did not have had political benefits, would it have been beneficial in economic terms? The resources that Germany spent for reparations were lost, but the additional resources that she could have invested in military spending would have remained in the domestic economy. Obviously, the question whether increased military spending would have had any effect depends on how much excess capacity the German industry had 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 as a whole and in in a number of defense-related manufacturing branches, for which data are available not before July 1928.

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[5] If there was anything like a threat, it was Poland. As it had largely realized its territorial claims against Germany, Poland was reckoned saturated. The situation changed somewhat when General Pilsudski came to power in 1926; Schattkowsky (1995); Burk (1990), pp. 43-5.

Table 4   **Capacity utilization in German manufacturing, 1928-38 (per cent)**

	1924	1925	1926	1927	1928	1929
Industry and commerce	84	89	81	90	90	88
Hard coal mining					87[a]	93
Investment goods industry					73[a]	70
Mechanical engineering					72[a]	68
Vehicles					50[a]	57
Electrical engineering					80[a]	78
Precision instr., optical					71[a]	63
Textile industry					74[a]	72

Notes: 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. [a] July to December only.

Sources: First line Balderston (1993), p. 373, col. B; all other *Konjunkturstatistisches Handbuch 1936*, pp. 25-31.

The data in Table 4 are difficult to interprete. If we rely on Balderston estimates for 'industry and commerce', Germany's firms were working close to their capacity limits, and additional military procurement would have simply crowded out civilian orders. This fits to the fact that German industrialists have been described of having been reluctant concerning military procurement contracts. Only in the course of the great slump did industrialists seek to contact the army (Hansen, 1978, pp. 205f.).

If, however, we confront Balderston's aggregated data with those of defense-related manufacturing branches, a comparison that because of lacking data we can only draw for the second half of 1928 and 1929, we see that there would probably have been capacity for military orders which might have had muliplicator effects.

[In the rest of the paper, we will experiment with recent estimates for the expenditure multiplicator in 1924-29]

6.   Conclusion

Formally, even our lowest scenario puts the additional military costs of an unconstrained German army much higher than the reparations which had to be paid diretly from the *Reich*'s budget. Hence the constraint of a 100,000-men army was clearly beneficial for Germany's central budget. Fiscally, that is if the total reparation burden is compared to the hypothetical additional military costs, the answer depends on whether a German unconstrained rearmament program would have led to a modest armaments race o not. If that was of the size of around 1912, additional military costs would have dominated the reparations in every year except 1928.

[Still missing: Economic evaluation]

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