Reparation transfers, the Borchardt hypothesis and the Great Depression in Germany, 1929–32: A guided tour for hard-headed Keynesians

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This paper examines the effects of Germany's inter-war reparation agreements in the framework of the Keynesian transfer problem. According to conventional wisdom, with free capital mobility reparation transfers are necessarily under-effected. I argue that while this is true for the Dawes Plan period between 1924 and 1929, the Young Plan for German reparations after 1929 created an external credit constraint such that during the depression, no counteracting capital flows could come forth and reparations were fully (or over-) effected. This is consistent with the so-called Borchardt hypothesis, which claims that stabilisation policy in Germany during the Great Depression was credit constrained and that lack of budgetary discipline during the preceding years was instrumental in creating this constraint. Accounting for the foreign credit restriction created by the Young Plan, Germany's deflationary policies during the slump can be interpreted as the austerity reaction to an imminent foreign debt crisis. The balance of payment stabilisation required by the Young Plan explains most of the decline in German national product during the depression if Keynesian import functions are assumed and suitably parameterised. Simulation of various different transfer profiles suggests that with tighter macroeconomic policies during the Dawes Plan period after 1924, a large part of the income contraction after 1929 could have been avoided. The results imply that both parts of Borchardt's hypothesis hold up even under plainly Keynesian assumptions.

1. Introduction

Since the time of Keynes' criticism of the Treaty of Versailles, the particular severity of the German business cycle between the wars has been the subject of intense dispute. In this debate, to which this article is addressed, three different strands can be discerned.

First, there is the discussion about the transfer problem, which emanated from Keynes' (1920, 1922) gloomy predictions about the future of the

German economy should reparations ever really be enforced. The issue was conceptually clarified by Ohlin (1929) and Rueff (1929) in their debate with Keynes (1929 a, b); scholarly analysis of the transfer problem rests largely on the contributions of Metzler (1942) and Johnson (1956).

The main result that stands out from these debates is that contrary to the predictions of Keynes, reparation transfers are never fully 'effected' out of trade balance surpluses if capital is allowed to move into the debtor country freely. As a consequence, the income contraction of the debtor country will be far less large than in the absence of capital movements. Thus, the argument would go, reparations cannot have been the cause for the severity of the German depression from 1929 to 1932.

A second debate concerned American capital exports to Germany. This strand of the discussion, epitomised for example in Kindleberger (1973), sees the German business cycle mainly as a part of an international cycle which was caused by the rise and decline of American international lending. This view was criticised by Temin (1971) who pointed to domestic factors in the German business cycle that preceded the decline in American lending. The debate soon slid away into measurement problems connected with German investment, see Falkus (1975) and Balderston (1977).

A third strand of the debate – which received new stimulus from Temin's critique of the capital export doctrine – focused on the malfunctions of domestic macroeconomic policies in Germany. Traditionally, the view was held that 'Keynesian' policies from 1933 on (Lautenbach 1952, Grotkopp 1954, Erbe 1958, Kroll 1958) and during the mid-1920s (Netzband and Widmaier 1964, Blaich 1977, Hertz-Eichenrode 1982) were a key factor in economic recovery, while the particular severity of the Great Depression in Germany was seen as a consequence of anti-Keynesian deflationary policies during the slump.

It is this third view which has been debated most intensely during the last two decades. Borchardt (1979) challenged conventional wisdom on the basis of a twofold counter-hypothesis. First, he claimed that during the late 1920s, it was not demand management but supply conditions such as abnormally high wages that led to the German slump. Second, he posited that during the depression itself, the German public budget hit a credit constraint which prevented less restrictive fiscal policies from being realised.

This revision of the traditional Keynesian perspective on Germany's interwar business cycle has generated an extended debate (see the reviews by Holtfrerich 1990 and Borchardt 1990). Critics have discarded the new view as a supply-side interpretation which was conceptually insufficient to explain the demand-side aspects of the Great Depression (Holtfrerich 1982, 1990; Krohn 1982; Hagemann 1984; Balderston 1982, 1993). While today there seems to be a growing consensus that during the slump, a constraint on public borrowing must have existed, most of the underlying economic issues remain unsettled. Holtfrerich (1984) had obtained evidence against abnormally high wage costs during the 1920s, while Ritschl (1990) found evidence

in favour. Broadberry and Ritschl (1994, 1995) examined both descriptive and econometric evidence, finding that labour cost, investment behaviour and labour demand followed very similar patterns in Germany and Britain. However, Britain's recession of the early 1930s was markedly milder than that of Germany, which implies that labour costs alone can hardly account for the rather more severe German depression.

This article attempts to synthesise the various different views on the German inter-war slump, combining a re-examination of the Keynesian transfer problem with the so-called Borchardt hypothesis. Accounting for the incentives created in international capital markets by the German reparation agreements – notably the Dawes and Young Plans – it will be shown that the Borchardt hypotheses can be perfectly reconciled with traditional Keynesian analysis. As laid out in a companion paper (Ritschl 1995), the Young Plan of 1929 drastically worsened the terms for commercial lending to Germany and interrupted a foreign credit bonanza that had been blossoming for several years. This is to say, the standard result of the theory of the transfer problem, according to which reparation transfers are under-effected because of counteracting capital flows, does not seem to have applied in the German case after 1929. With this element at hand, an explanation of the German business cycle can be constructed against the British counterfactual in spite of very similar supply conditions across both countries. Specifically, I obtain an explanation for both elements of the Borchardt hypothesis, first, the role of high wages in the 1920s in setting the stage for the depression, and second, the deflationary policies during the slump, which emerge as typical austerity policies designed to avert a foreign debt crisis in the presence of an international credit constraint.

In the sequel, the argument will be developed in the framework of a simple IS–LM model, complementing this with an analysis of the reparation transfer problem in the context of an Alexander-type model of the balance of payments. The choice of this framework is largely strategic, as it is intended to show that all conclusions deriving from Borchardt's hypothesis can be obtained in the context of a traditional Keynesian transmission mechanism and do not depend on the supply-side oriented framework that Borchardt himself seemed to have in mind (e.g. in Borchardt 1983). As a consequence, the results of this paper are of a somewhat dialectical nature, as the aim of the subsequent discussions is not to convey a macroeconomic state-of-the-art account of the Great Depression. Rather, what is intended here is a guided tour to the Borchardt hypothesis for hard-headed (and other) Keynesians, avoiding the use of sophisticated but probably controversial analytical tools.[1]

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[1] A restatement of the sovereign debt aspects of the German reparation agreements and their incentives for German policy-making in an otherwise neo-classical economy is in Ritschl (1995). As I identify a foreign credit constraint to be the salient feature of the German depression, the need for further analysis of the resulting credit crunch (in the sense of Bernanke 1983) is obvious. Some preliminary evidence on this is examined further below.

The remainder of this article is organised as follows. Section 2 sets out the main hypothesis and discusses the impact of the shifts in the reparation regimes on the German balance of payments. Section 3 traces the consequences of the varying tightness of the balance of payments constraint on the aggregate economy and relates the results to the Borchardt hypothesis. Section 4 examines empirical evidence, while Section 5 turns to some counterfactual simulations under various different assumptions about German foreign borrowing in the 1920s. Section 6 presents conclusions and implications.

2. The main hypothesis: the German depression as a foreign debt crisis

In this section, I will introduce the effects of the Dawes Plan of 1924 and the Young Plan of 1929 on the German balance of payments and hence on the level of aggregate activity as an additional explanatory element into the discussions mentioned above. I shall argue that the Dawes Plan created an incentive for German policy makers to encourage foreign borrowing at the maximum rate, while the Young Plan of 1929, designed to stop just this behaviour, cut Germany off from further credit flows and generated conditions of a gradual slide into a foreign debt crisis. These incentive effects of the reparation settlements cannot themselves be explained in a Keynesian environment but have their impact on a Keynesian world by setting in motion 'exogenous' capital movements.[2] In fact, I see Borchardt's first hypothesis as connected with the emergence of a foreign credit constraint on the German economy in the 1920s, while the second hypothesis – the public borrowing constraint during the Great Depression – is an implication of the foreign debt constraint induced by the Young Plan.

Specifically, I propose to base analysis of the Great Depression in Germany on the following three propositions:

(1) Borchardt's hypothesis is incomplete but can be re-established by introducing an additional element into the argument.

(2) The missing element is provided by a tightening of the balance of payments constraint between 1928 and 1930, which itself is based on the abolition of transfer protection in the transition to the Young Plan. This shift in the balance of payments regime puts Germany at the brink of a foreign debt crisis from late 1930 and forces her to stabilise the public budget during the depression.

(3) Full analysis of the effects of (1) and (2) can (but need not) be undertaken in a standard open-economy IS–LM framework

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[2] These capital movements are exogenous only from within traditional circuit flow models but do find an explanation in more incentive-oriented analysis.

where a Keynesian twin-deficit mechanism is operative. In other words, the validity of (1) and (2) does not hinge on assumptions about a particular macroeconomic transmission mechanism.

The last assertion implies that contrary to what critics have suggested and to what Borchardt (1983) seems to endorse, neither the observation of high wage cost in the 1920s nor the emergence of a public debt constraint in the 1930s need to be based on a neo-classical account of events. I argue instead that from a Keynesian viewpoint, a major force driving the German economy into depression in the early 1930s was the halt to foreign borrowing introduced by the Young Plan.

As is well known from the literature, Germany attracted large inflows of foreign, predominantly American, capital after 1924 (see Costigliola 1976 for a detailed breakdown). Political historians have noted frequently that Germany's high foreign borrowing at the time was actively endorsed by the government, as the Dawes Plan of 1924 gave the German side a strong incentive to take in foreign credit at maximum rates (for example see Helbich 1962, Link 1970, McNeil 1986).

Under the so-called transfer protection clause of the Dawes Plan, debt service on commercial credits was effectively protected against the risk that transfers of reparations into foreign exchange could provoke a foreign debt crisis. This made new commercial credits *de facto* senior to reparation claims (see McNeil 1986, Schuker 1988). By taking in foreign credit at high rates, Germany could thus drive out reparations, given that there existed limits to what Germany could be forced to pay. Moreover, Germany could take her commercial creditors hostage to the reparation problem, as these would share with Germany the interest in minimising the reparation burden. German policy makers realised this incentive very clearly (McNeil 1986). This suggests that German foreign borrowing during the 1920s was not merely a market-driven phenomenon. German policy makers had an incentive to expand the economy deliberately, creating an artificial boom, worsening the balance of payments, and attracting fresh money to the country without increasing her effective debt burden.

Lenders also had an incentive to play this game. As long as commercial lending remained below a certain maximum, lending to Germany seemed reasonably safe, except for one single case in which revision of the transfer protection clause and worsened business cycle conditions coincided (Ritschl 1995).

This contingency turned into reality with the transition to the Young Plan. Reparation creditors realised that Germany had systematically employed foreign borrowing to undermine reparation payments (McNeil 1986). To prevent Germany from further abuse of the Dawes Plan, they pressed for a new arrangement under which Germany would pay out reparations under almost all contingencies. This scheme, which was cast into the Young Plan in early

1929, made reparations again senior to commercial credits. Its desired effects on German foreign borrowing materialised immediately. From early 1929 on, Germany was almost permanently in a state close to foreign exchange crisis, conditions which were alleviated only temporarily by fresh money that came in through a series of stabilisation loans connected with the Young Plan.

Thus, the interaction of Germany's reparation obligations and her commercial debt provides us with a link between the external and domestic parts of her business cycle. We see Germany's external position after 1924 as determined by varying degrees of relaxation of her balance of payments constraint. First, there is a borrowing boom between 1924 and 1928 under the Dawes Plan. In the Young Plan period from 1929 on, Germany saw herself increasingly cut off from fresh money, which culminated in a foreign exchange crisis from 1931 on. The next section will trace the macroeconomic transmission of these balance of payments shocks on the German economy and establish the link to the Borchardt hypothesis.

3. Policy impotence in a Keynesian world: An IS–LM interpretation of the German Depression

In this section, the aforementioned balance of payments restrictions will be integrated in a Keynesian framework to reproduce the stylised facts of the Borchardt hypothesis along with the evidence on German foreign borrowing. As stated above, the aim of this exercise is an indirect, rather didactic one. I choose IS–LM strategically to show that the Borchardt view, often criticised for its allegedly supply-side bias, is perfectly compatible with a Keynesian account of events. At the same time, I do not intend to put forward this IS–LM story as the ultimate account of the Great Depression in Germany. In particular, I do not address here the obvious question of how the foreign credit constraint may have translated itself to a domestic credit crunch (in the sense of Bernanke 1983), which is left as an issue for future research. The next two subsections will consider the 1920s, when the foreign credit constraint is not yet binding, and the foreign credit crunch of the 1930s separately. The conditions sketched in these sub-sections will be linked to the first and second Borchardt hypothesis, respectively.

3.1. Foreign credit constraint not yet binding

To put the analysis in a Keynesian mould, consider Sidney Alexander's framework of external equilibrium in an open economy. Assuming Keynesian import and consumption functions, this model derives the equilibrium between the trade balance *TB* and national income *Y* as determined by net exports *X–M*, which decrease in national income, and net capital exports, which are obtained as the difference between net national savings and invest-

ment, $NS-I = S - (G-T) - I$, and which increase in national income. Such an equilibrium is represented in the upper chart of Figure 1 below.[3]
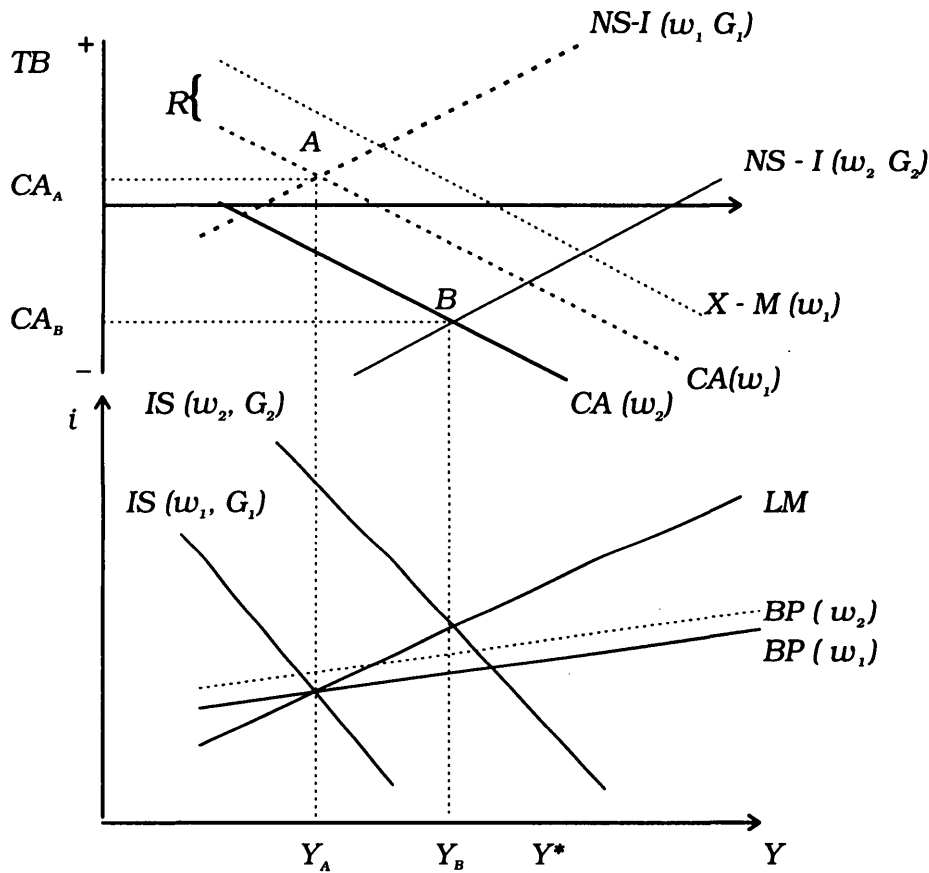

Figure 1.

An additional burden on the exterior balance is introduced by reparations R. Subtracting these from the trade balance $X-M$ (and ignoring debt service which in the mid-1920s was still small) yields the current account CA. Now imagine a situation like point A in Figure 1 where at the equilibrium level of national income Y_A, the current account CA_A is slightly positive. This case resembles German conditions in 1925, one year after the currency stabilisation ending the hyperinflation had been implemented. In equilibrium A, reparations are fully transferred from trade balance surpluses (or 'fully effected' in the parlance of Metzler 1942). The current account is positive, which

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[3] A good textbook exposition is Caves *et al.* (1990). In the above definition, S denotes private savings, G is government expenditure, T are tax receipts, and I is private investment. Accelerator effects on investment are ruled out and the interest rate is held constant.

indicates that the debtor country is even able to accumulate some foreign reserves. In the lower part of Figure 1, an IS–LM schedule conforming to equilibrium A is given.

To connect this with the foreign borrowing boom mentioned above, consider now the effects of increasing wages and public spending simultaneously. This would be the set of policies that according to Borchardt (1979) jeopardised Germany's manoeuvring space during the depression after 1929. In the upper part of Figure 1, wage increases from, say, w_1 to w_2 shift the current account schedule (and the IS curve in the lower part of the figure) to the left, here from CA (w_1) to CA (w_2). The resulting decline in national income is only partly compensated through the induced fall in the rate of interest which would shift the net capital export schedule $NS–I$ slightly to the right. Full compensation or even net expansion of aggregate activity is achieved by contemporaneous fiscal expansion from, say, G_1 to G_2. This shifts the net capital export schedule even farther to the right (from $NS–I$ (w_1, G_1) to $NS–I$ (w_2, G_2), say) and moves IS outward again, e.g. from IS (w_1, G_1) to IS (w_2, G_2). As a result of this simultaneous expansion of wages and public spending, living standards, employment, and national income (now at Y_B) are all three higher than before. Such a parallel expansion indeed occurred in Germany after 1925–6. In German scholarship, there is a tradition of praising the wisdom of counter-cyclical policies that helped overcome the slump of 1925. Hertz-Eichenrode (1982) finds it puzzling that Weimar's policy mix of the mid-1920s met with sharp criticism by contemporary observers.[4]

However, under Keynesian primitives nothing appears to be wrong with fiscal expansion to counteract the recessive effects of wage increases. At a first glance, Borchardt's first hypothesis simply does not seem to hold: there is no such thing as a policy dilemma that prevents a country from expanding its national income towards full employment, even if competitiveness has worsened through wage increases. So much for the first Borchardt hypothesis from a Keynesian textbook perspective.

This picture changes quite a bit, however, once we account for the long-term effects of continued balance of payments deficits. In fact, there is an unwelcome side effect to the mix of fiscal expansion and wage increases, as both policies worsen the balance of payments. As long as capital is moving in and out freely, the expansion will finance itself through capital imports.

If we take the presence of reparation payments into account, income expansion as in Figure 1 means that reparation transfers will be partly or entirely offset by capital imports. This is the well-known result of Metzler's (1942) analysis of the transfer problem: reparation transfers will usually be ineffective, as they are partly or fully financed by international credit, not out

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[4] Notably by Brüning, German chancellor during 1930–2. In his memoirs, Brüning (1970) considered the expansion of 1926–8 to be among the major reasons why in the early 1930s, his own government was caught in a deflationary policy trap. Once again, this is the Borchardt hypothesis.

of trade balance surpluses. Point *B* in Figure 1 represents an extreme case in which both the current account and the trade balance are negative (at level CA_B). This case corresponds to German conditions in the late 1920s. Not only are reparations recycled through credits but so is debt service. The country is in fact operating a Ponzi scheme, building up a foreign credit pyramid at a very fast rate.

Unsustainable foreign borrowing introduces a hard constraint even into the Keynesian model. As outstanding credit approaches the limits of enforceability, creditors will eventually curb their lending, and the credit pyramid must collapse. To stabilise the current account again, the country will have to adopt the classical austerity policies of wage deflation and fiscal restraint.

This is our Keynesian interpretation of the mechanism underlying Borchardt's (1979) first hypothesis on the demise of the Weimar Republic. Wage increases did not *per se* put the German economy into jeopardy. Instead, they combined with expansionary public finance to create an artificial boom which in the presence of Germany's reparation obligations could only be sustained through building up a foreign credit bubble. This is what Stresemann, Germany's foreign minister from 1924 to his death in 1929, had in mind when he stated in 1928 that 'Germany is dancing on a volcano' (McNeil 1986, p. 229).

3.2. Foreign credit constraint binding

It is now straightforward to analyse the effects of a halt in foreign lending on the debtor country. Such a halt is inevitable, given the unsustainable policies of recycling both reparations and debt service through international credit. When uncertainty about the future of their German investments grew, leading US banks began downgrading Germany, and JP Morgan is cited with the dictum 'The Germans are a second-rate people' (James 1985). With such a credit constraint evolving, the debtor country would have to engineer a drastic regime switch in its balance of payments. Under Keynesian primitives, very much the same macroeconomic adjustment process as described above would now begin, albeit with signs reversed. This would continue until the transfer of reparations and debt service is fully 'effected' (Metzler 1942) from domestic surpluses.

Once the Ponzi scheme of recycling reparations through foreign credit broke down, Germany was confronted with the choice between following this deflationary path, which she did during the Brüning deflation from 1929 through 1932, or defaulting on her foreign debt, which she did after the Nazis came to power in 1933. Figure 2 below represents the Keynesian account of the situation. As before, reparations *R* and debt service *d D* have to be subtracted from the trade balance in order to arrive at the current account *CA*. Absence of further international lending implies that the current account must

now be non-negative. Therefore, point B, which is the temporary equilibrium inherited from Figure 1, now becomes unsustainable.

The amount of transfers that can be exacted from the country is limited by the welfare loss of a switch to autarky (see e.g. Bulow and Rogoff 1989). Let this limit be F_{max} in Figure 2. As long as the sum of reparations and debt services falls short of this threshold, it is preferable for the country not to default. The welfare loss of deflating the economy is still lower than the damage that would result from embargoes, sanctions, and other retaliatory measures after a default. Payments $R + d\,D$ now need to be fully effected, which forces the debtor country into a new equilibrium like C. At this point, there is an excess of national savings over investment high enough to warrant a balance-of-trade surplus $X - M = R + d\,D$.[5]

The salient feature of Figure 2 is that two restrictions, $CA = o$ and $BP = o$, operate on the balance of payments at the same time. The foreign borrowing constraint under the Young Plan implies that the trade balance surplus $X-M$ must procure enough foreign exchange revenue to transfer reparations plus debt service.[6] Note that the point C cannot be reached without altering the national saving surplus schedule in the upper part of Figure 2, i.e. without contraction of domestic demand. Equivalently, we observe that in the lower part of Figure 2, the $CA = o$ restriction is a vertical line: domestic demand management cannot relax this external constraint.

Still, however, the traditional BP schedule in the *IS–LM* scheme is operative. Under a foreign credit constraint, no capital may flow into the country. But there is a high inclination for capital to flow out. Any point below the BP schedule will lead to capital outflows and hence sooner or later to a run on reserves (which Germany experienced in June 1931). The intersection of the BP line and the $CA = o$ restriction uniquely determines the external equilibrium of the debt-constrained economy. Fiscal and monetary policy can only passively adjust to this equilibrium. The interest rate needs to be set high enough to prevent capital outflows, while government spending must be reduced in order to shift the national savings surplus curve $NS - I'$ in the upper part of Figure 2 far enough to the left.

One interesting detail about the adaptation to equilibrium C with foreign credit constraints is the size of the multiplier. Conventional wisdom on the Keynesian transfer problem starts out from the assumption of free capital mobility. Then, two countervailing effects are operating. The first worsens the capital balance along the net savings schedule with slope s, the second improves the trade balance with slope m. The well-known export multiplier is therefore obtained as $1/(s + m)$.

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[5]   This ignores the possibility of temporary equilibria in which a negative current account may be sustained by running down foreign reserves. This delaying factor played some role in Germany at the time. See Section 4 below.

[6]   Such a point was reached towards the end of 1930 when the proceeds from two bridging loans granted along with the Young Plan were exhausted.
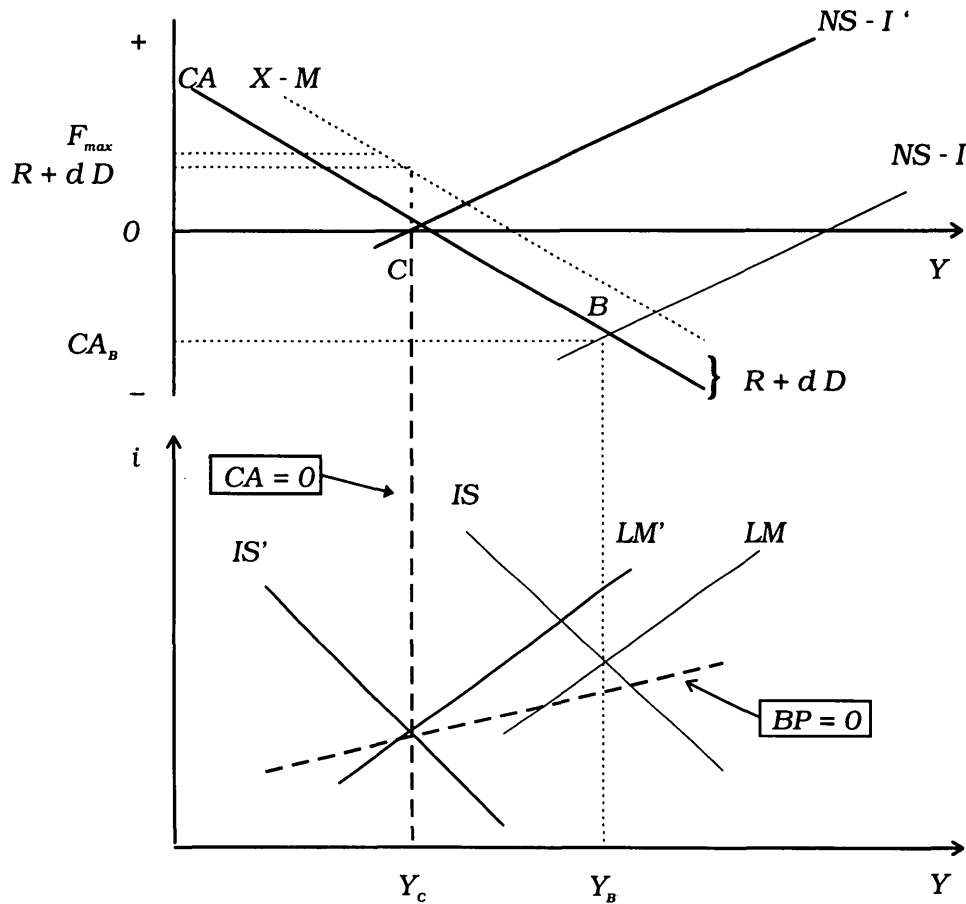
Figure 2.

In the event of a foreign credit constraint, however, reparation transfers may no longer be compensated through credit inflows. In Figure 2, adaptation to equilibrium C is therefore along the import function. The relevant multiplier is thus $1/m$, which is larger in absolute value than the export multiplier. Hence, the decline in national income required to achieve balance of payments equilibrium is larger in the case of a foreign debt constraint than without. Section 5 below will study this numerically.

Note also from Figure 2 that as the wage level is still higher than in 1925, the new equilibrium is worse than equilibrium A in Figure 1 above, where reparations were also transferred out of surpluses. Under fixed exchange rates, only by adopting wage deflation can the debtor country hope to increase its competitiveness and escape from equilibrium C to a more favourable position associated with higher employment.

This scenario provides a Keynesian rationale for Borchardt's second hypothesis. The Brüning deflation of 1930–2 with its characteristic combina-

tion of fiscal restraint and administered wage deflation is nothing but the forced austerity response to a foreign debt crisis. Once the transfers need to be fully effected out of trade balance surpluses, drastic cuts in public budgets become necessary: the controversial twin-deficit mechanism is operative. Thus, Borchardt's hypothesis of a borrowing constraint to German public budgets can be obtained as a conclusion from the Keynesian transmission mechanism, only if the balance-of-payments restrictions introduced by the halt in foreign lending are taken into account.

This balance of payments constraint is the element that has been missing in recent debates about the German slump. The intertemporal aspect of this restriction also provides the missing link between the two parts of Borchardt's hypothesis. To see this, assume a Keynesian counterfactual for the 1920s in which German policy-making had reacted to Brüning's criticism already by 1926 and refrained from raising wages and public spending. Then, an equilibrium like A in Figure 1 with low wages, balanced public budgets, and current account equilibrium would have persisted. As a consequence, much of the credit expansion of the late 1920s would not have taken place, and foreign borrowing would have been minimised.[7] This in turn would have helped to relax the German balance of payments constraint during the Great Depression (see Section 5 below for more on this).

Forced deflation and public spending cuts during the Great Depression thus were the price that Germany paid for the speculative credit boom of the 1920s – which after all had been the political attempt to take international creditors as hostages to the reparation problem, a manoeuvre that failed in the Young Plan of 1929, when German hopes for a downscaling of reparations in favour of foreign credits were disappointed (Hardach 1976, Link 1970, McNeil 1986).

3.3. Overcoming the constraint? Policy options during the slump

It remains to analyse the alternative policy options that might have presented themselves during the slump. Consider first deflation as the obvious response, which also conforms to the rules of the game of the gold standard (on these, see Bordo and Kydland 1995). Deflation may have positive employment effects only if applied fast enough. By continually lowering the price level relative to competitors, the net export function would be shifted to the right such as to achieve satisfactory levels of employment. This would be precisely the kind of German export offensive that had been predicted by Keynes (1920, 1922) for the case in which Germany would be forced to effect her reparation transfers out of current surpluses. This strategy was indeed adopted by the Brüning administration and enjoyed some success (Teichert 1984, James 1985). Thus, the frequent criticism of the deflationary policy

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[7]   This conclusion is in fact at the centre of Brüning's criticism of the Weimar boom, reflected in Hertz-Eichenrode (1982).

adopted in Germany during the depression does not have a very good justification in the Keynesian textbook model. Only if debt deflation effects on the credit market as described by Bernanke (1983) are accounted for may there be a negative answer to the deflationary option.

The obvious alternative that attracted a lot of attention at the time is devaluation. This would largely have the same effects on the external balance, however without the accompanying debt deflation in domestic financial markets (see Holtfrerich 1990, 1991, in strong support of this alternative). Although an obvious conceptual possibility, this policy was not a viable option at the time. The case for devaluation overlooks the leverage exercised by foreign creditors, especially the Americans, whose interest in maintaining the gold standard induced them to condition US support for a German debt moratorium during the slump on Germany not departing from gold (Schuker 1988). Threat of credit withdrawals thus made devaluation look like an option quite similar to open default (Borchardt 1984). The Germans instead adopted an 'ersatz' devaluation (Holtfrerich 1991) where foreign exchange controls, a standstill agreement with short-term creditors, and the Hoover moratorium on political payments limited the drain on the German balance of payments.

Finally in this section, consider the effects of such a reparation moratorium which is announced after a payment crisis has occurred. This would be a Keynesian way of representing the events of mid-1931 between the Austrian and German banking crises and the Hoover moratorium on German reparations and inter-allied debts. The shock itself would operate like a sudden upward shift of the *BP* curve.[8] The only feasible reaction would be an immediate monetary contraction to restore a new equilibrium without further loss of reserves (from point C to D in Figure 3 below).[9]

In particular, a counteracting reaction through fiscal expansion is ruled out by the new *BP'* constraint, as it would entail a further loss in reserves. A moratorium would then be a way of alleviating the shock by breaking the market expectation of a debt default. Reducing the constraint on the trade account from $R + d\,D$ to $d\,D$, the economy might attain a more favourable equilibrium than C or D without incurring a current-account deficit, probably even a point like E, once the market expectations of an imminent default are broken and the *BP* curve returns to its previous position. Depending on the position of H relative to E, monetary expansion might combine even with a fiscal expansion.[10] However, as the moratorium is only transitory, the credit

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[8] The shock would be generated by the expectation that full adjustment to Y_e in Figure 2 above would not be reached successfully and that therefore, a situation below $BP = 0$ might occur.

[9] This greatly oversimplifies the problem of a central bank run. As research by Bertola and Svensson (1993) suggests, expectations of a foreign exchange crisis tend to be self-fulfilling when central bank reserves are limited.

[10] After the German banking crisis of 1931, there was indeed such a brief upsurge in public deficits, accompanied by large-scale monetary accommodation, see James (1985).
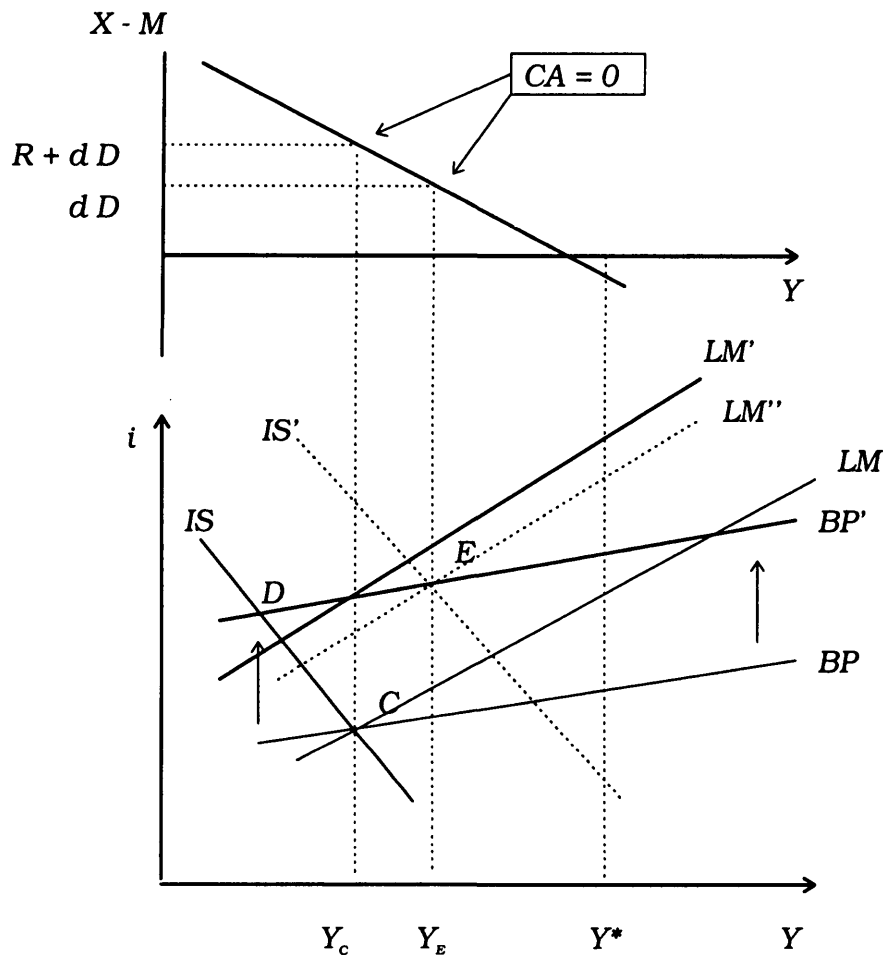
Figure 3.

restriction itself (which is a stock constraint) is still operative. Therefore, positions below the *BP* curve are not reachable, and points above *BP* do not lead to capital imports. Thus, credit expansion must necessarily remain domestic, and it is limited by the point Y_E associated with the relaxed trade balance restriction under the moratorium. Only if reparations go entirely or if an international upturn shifts the net export function to the right, may fully-fledged recovery occur.

This is the Keynesian explanation why large-scale credit expansion during the Hoover moratorium of 1931–2 was not feasible. Only by large credit inflows could the economy be steered away from a point like *E*. However, such commercial credit would not come forth as long as the reparation problem was unsolved.[11] In the absence of a strong international upturn and of successful beggar-thy-neighbour strategies, the only viable solution to the

[11] One credit project that has attracted scholarly attention was a French credit offer to

Keynesian transfer problem is the one historically adopted, namely the aboli-
tion of reparations. Ironically, the only other solution that exists to the
problem, namely debt default and the retreat into autarky, was adopted in
1933, one year after the economic reasons for such a move disappeared.

4. Evidence

In this section, evidence on the German balance of payments constraint and
on public budgets will be examined briefly. The interest here will focus not so
much on the model predictions, which will be studied in Section 5, but rather
on the balance of payments constraint itself.

Figure 4 below shows the German current account balance and the sum of
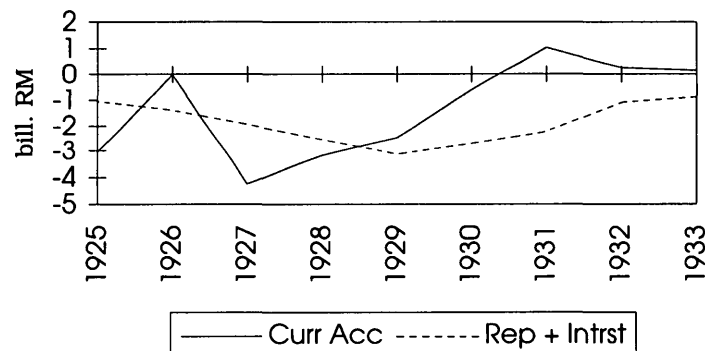German reparations and interest obligations.

Figure 4.

During the late 1920s, the current account is in deep deficit, which is what
Schuker has labelled 'American Reparations to Germany': not only are
reparations fully recycled, but there is also large-scale capital import beyond
that. Full return to real resource transfers takes place, not in 1930 but only in
1931, as the foreign exchange receipts from the stabilisation loans of 1930
postpone the need for complete adaptation by one year. In 1931, the current
account balance even becomes positive, despite dwindling currency reserves
and the banking crash in the same year. The latter event is the reason why the
current account surplus does not translate into increasing reserves: private
investors at home and abroad react with large-scale capital flight; the unex-
plained capital export of 1931 is about three times the current account surplus
(James 1986). By 1932, the effects of foreign exchange control and standstill

Germany at the onset of the foreign exchange crisis of mid-1931. As this credit proposal
was, among other things, linked to the condition that no moratorium on German
reparations be declared, its likely effect on the trade balance constraint would have been
close to zero, if not negative. See Helbich (1962), Link (1970).

agreements add to the end of reparations, and only trivial sums are trans-
ferred abroad, a situation which becomes habitual with the extended foreign
exchange control prevailing after 1933. Thus, the years of the depression
coincide – or are possibly even preceded – by the end of Germany's foreign
credit rush and the stabilisation of her balance of payments. A breakdown of
German bond issues abroad as a measure of gross borrowing is provided in
Figure 5.
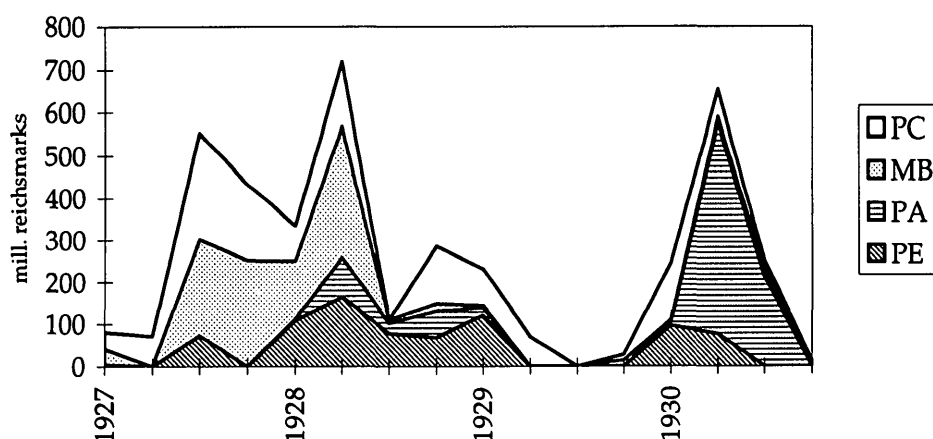
Notes: PC = Private Companies, MB = Mortgage Bonds, PA = Public
Administration, PE = Public Enterprises.
Sources: Balderston (1993), *Statistisches Jahrbuch fuer das Deutsche Reich*, various
issues.

Figure 5.

If the provisions of the Young Plan indeed imposed a constraint on the
level of foreign debt, German gross borrowing should be restricted from
1929–30 on to a low level representing the repayments of existing debts. As
Figure 5 shows, for some segments of German borrowing the actual situation
is worse than this: already in 1929, German borrowing for business and
government comes to an almost complete standstill. Note that the sharpest
decline actually takes place in late 1928 after the Germans accept renegotia-
tion of a new reparations treaty without transfer protection. It is by this time
that JP Morgan of New York downrate the German credit standing, pointing
out that 'the Germans are a second-rate people' (James 1985). A seemingly
impressive revival of German borrowing in 1930 is almost exclusively due to
two mobilisation credits connected with the Young Plan procedure. These
explain the upsurge in borrowing of both public administration (PA) and of
public enterprises (PE), as part of the Young Loan went to the Reichsbahn,
the state railway company. The only other major exception is a credit to
Siemens & Halske, the electrical engineering firm, which is one of the very
few examples of foreign credits paid back by the Nazis and not defaulted

on.[12] With the exception of the Siemens credit and the mobilisation loans, Germany was thus cut off from any major international credit project after the Young Plan went into effect.

A related picture is obtained from looking at the borrowing of the central government. Table 1 provides central government gross borrowing, broken down by funded (i.e. long- term) credit and unfunded short-term borrowing, in million Reichsmarks (RMm).

Table 1. *Central Government borrowing in Germany (RMm).*

	Total	Funded
1928	1237.1	100.5
1929	675.5	364.0
1930	1071.3	487.1
1931	600.6	–
1932	563.2	–
1933	2942.1	92.1

Notes: All data refer to calendar years. Funded borrowing: maturity of one year, and more.
Source: Statistisches Jahrbuch für das Deutsche Reich, various issues.

As can be seen, borrowing drops substantially from 1928 to 1929, one year before Brüning takes office. In 1930, borrowing recovers due to the Young and Kreuger loans, while 1931 and 1932 see the German budget without any long-term loan.

For a government determined to adopt a sound-finance strategy towards the depression, all this would make little sense. The decline in borrowing should have set in already by 1930, instead we see a marked increase over the previous year. Also, deliberate balanced-budget policies would consist of concentrating all borrowing at the long end in order to signal the safety of the budget and to avoid funding crises. That the latter were indeed recurrent during the slump is well-documented from the diaries of the budget director at the time, Hans Schäffer (see Bachmann 1995; James 1985). Thus, if the Brüning government really attempted sound finance, its policy would have to be termed a plain failure. We also note from Table 1 that the budget restraint

[12] The smaller of the two mobilisation loans granted in connection with the Young Plan was a loan arranged with American banks and Kreuger, the Swedish match empire. To obtain this credit, Germany gave a match monopoly to Kreuger for 50 years. Kreuger went bankrupt during the depression and committed suicide. The credit was cleared with Sweden in the mid-1930s against German export surpluses. The match monopoly existed to 1979. The larger of the two mobilisation credits, the Young Plan, was defaulted on by the Nazis. Debt service was blocked in the London agreements of 1953 until German unification and resumed in 1990.

excluding government from the long-term market did not end with Brüning's fall in May 1932, but rather continues throughout the whole year – now no longer caused by reparations and foreign debt but rather by the political chaos that followed the overthrow of Brüning.

5. A counterfactual exercise

Absent capital imports, the decline in national income induced by full reparation transfers of size R was shown to be equal to $-R/m$, where m is the slope of the Keynesian import function. This 'reparation multiplier' takes on rather high values during the inter-war period. Borchardt and Ritschl (1992) obtain an estimate of 0.13 for m, which is well in line with the average import/GNP ratio observed for the same period in German data. Enforcing reparations plus debt service of some RM2 bn per year would then result in a comparative-static decline of German GNP of about RM13–15 bn, which well explains the decline actually observed (RM12–14 bn in constant prices). The same effect operates with signs reversed for the Nazi recovery: lifting reparations in 1932 and the decline in debt service enforced through the partial debt default of Nazi Germany would amount to some RM2.6 bn per year. This would lead to a comparative-static increase in GNP by some RM19 bn, which explains two thirds of the actual increase between 1932 and 1936.

It is tempting to ask how an alternative policy could have been designed that would have smoothed out the German slump. For this, two cases will be considered; firstly, a policy of 'fully effected' reparation transfers throughout; secondly, a policy of more modest foreign borrowing during the 1920s.

The first scenario assumes that Germany had not had any access to foreign credit since 1924 and that reparation transfers were equal to the actual ones (Figure 6).
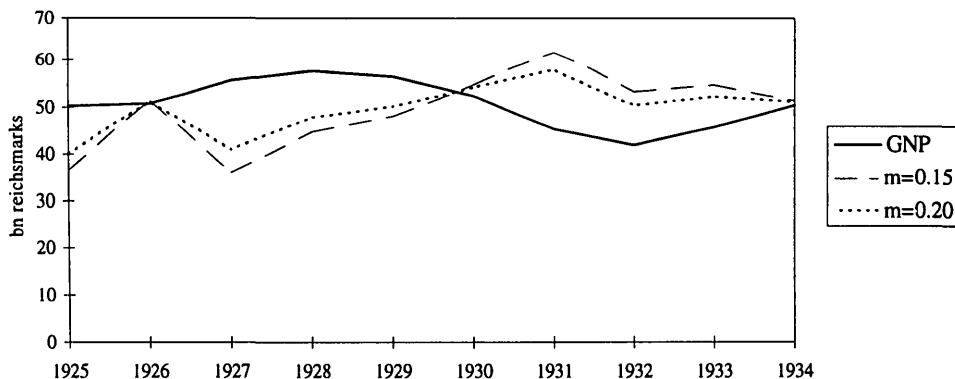

Figure 6. *Actual and simulated GNP with full reparation transfers.*

Figure 6 paints a bleak picture of the 1920s and a rather more rosy one of the 1930s. Had Germany pursued a policy of full reparation transfers in the

1920s, the German slump would have occurred just about five years earlier that it actually did. Depending on the propensity to import, the trough of this crisis would have equalled the one of the actual depression or even have been lower.

This scenario is precisely the 'transfer crisis' that German politicians were afraid of in the 1920s and sought to postpone by foreign borrowing, hoping that their foreign creditors would share their interest in doing away with reparations in the long term.

From 1930 on, both simulations lie above the actual data. This is caused by the counter-factual absence of service on the commercial debt from the 1920s. This means that without the accumulated debt burden, Germany's upswing of the 1920s would have lasted to 1931, just as in the case of France. However, as both simulations include the decline of reparation payments since mid-1931, the situation here appears as somewhat too favourable. Also it should be kept in mind that in Figure 6, possible international repercussions are not included.

This austerity scenario may be contrasted with a milder alternative, where Germany would have taken in foreign credit in limited amounts. Assume that prior to 1930, in every year except for 1926, RM1 bn in current value had been borrowed. Assuming interest of 5 per cent per year and converting to constant prices, we arrive at the simulations shown in Figure 7.

In this case, the time path of simulated GNP is higher than before. A policy of controlled recycling of reparations through foreign credit in the 1920s could thus have smoothed GNP with respect to the simulations of Figure 6. Moreover, it would have left the 1930s without an undue burden. Once again, however, our simulations imply that the 'Golden Twenties' disappear; now in Figure 7 they are just a bit less of an iron age than Figure 6 would have implied.
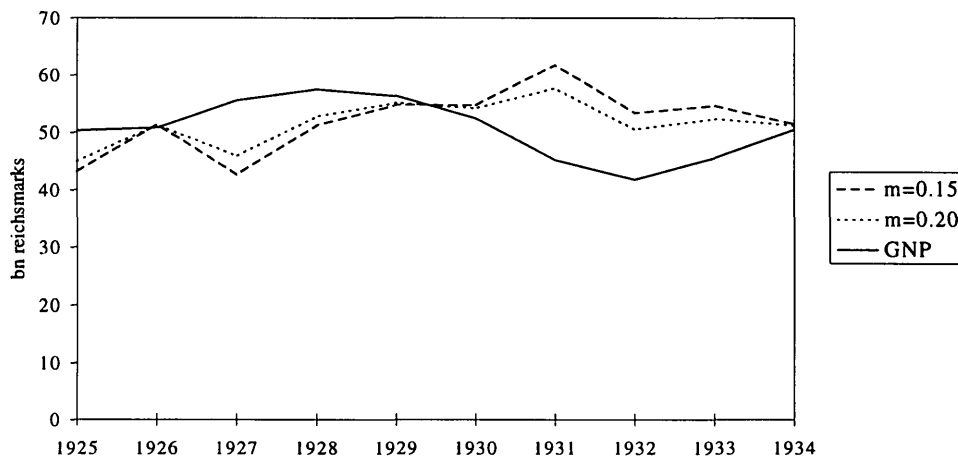

Figure 7. *Actual and simulated GNP with moderate foreign borrowing.*

Note that these simulations also bring us back to the question of why Germany's trajectory through the inter-war years was so much more volatile than Britain's in spite of similar supply conditions. The deviation largely seems to be caused by the different balance-of-payments regimes, where Britain's external position remains close to equilibrium, while that of Germany undergoes radical swings.

Thus, the simulations show that under Keynesian assumptions it would have been possible for Germany to fulfil the Dawes plan by taking in some limited amount of foreign credit. This would have enabled Germany to follow less restrictive policies during the slump of the early 1930s, as with less foreign debt inherited from the 1920s, there might have been no strict credit constraint at the time. From a Keynesian perspective, the trade-off for German politics was therefore an intertemporal one: less recovery in the 1920s would have bought a less dramatic trajectory during the early 1930s, and the Brüning deflation might have been avoided.

6. Conclusions and implications: the end of the Borchardt controversy

A guided tour to the Borchardt hypothesis for hard-headed Keynesians reveals that much of the Borchardt controversy may have been unnecessary. Borchardt's (1979) argument that there existed a credit constraint on the German public budget during the Depression of 1929–32 has often been dismissed as logically incoherent or at least as incompatible with a more Keynesian view of the slump. In this paper, I have proposed to reinterpret the German slump as a foreign debt crisis, of which the Borchardt hypothesis is an implication. A fully Keynesian IS–LM view has been adopted to show that this interpretation of Borchardt's hypothesis is perfectly compatible with very traditional Keynesian analysis of macroeconomic transmission mechanisms. I employ basic results from the theory of sovereign debt to argue that the abolition of transfer protection in the Young Plan induced a balance shift which in a Keynesian setting must necessarily lead to a deflationary response. This reaction is an extreme form of the Keynesian transfer problem described by Metzler (1942). In standard analysis the Keynesian transfer problem, counteracting capital flows preclude full reparation transfer out of domestic resources, while in the actual case the foreign debt constraint under the Young Plan ensured that transfers were indeed fully effected. The simultaneous restrictions of fiscal and monetary policy obtained are precisely the constraints described by Borchardt (1979). Ruling out currency devaluation as a violation of the Young Plan and of other commitments, deflation remains as the obvious response to the dilemma created by the debt constraint.

Evidence on the structure of Germany's balance of payments and on the maturity structure of German public borrowing supports the interpretation of a mounting debt crisis during the slump. A numerical exercise shows that

for the parameter values, the income contraction enforced by the foreign debt constraint under the Young Plan explains the contraction of German national income quite well.

A word of caution is in place. The conclusions of this article do not imply that reparations *per se* caused the severity of the Great Depression in Germany. We have sketched a counterfactual in which Germany would have abstained from foreign borrowing on a large scale during the Dawes Plan of 1924–29. Under this counterfactual, the sum of reparations and debt service to be paid without recycling under the Young Plan would have been a good 40 per cent lower that it actually was. Thus, it is not reparations themselves but rather the combination of these and the hangover from Germany's reckless borrowing rush of the 1920s that explains why the adjustment to the Young Plan was so severe.

The results presented here shed new light on the relevance of the Borchardt controversy. Whereas Borchardt and his critics were at odds about the role of supply rigidities, the above analysis suggests that, methodologically, both sides may have been right. Once the constraints to German international borrowing during the slump are taken into account, many of the contradictions between Borchardt's defence of the Brüning deflation and the Keynesian tradition seem to disappear; under a foreign credit constraint, deflation is the only way to alleviate the depressing forces which may influence the domestic economy via an income-specie flow mechanism. In this way, a full synthesis between both parties in the debate becomes possible. On the one hand, Borchardt's hypothesis still holds up, although possibly for reasons quite different from those stipulated by Borchardt himself. On the other, a Keynesian interpretation of the evidence still may go through, albeit with policy implications which are in contrast to those intuited by Keynesian writers.

As the balance of payments constraint takes centre stage in this article, and as a Keynesian transmission mechanism has been invoked, it is not surprising that the results are an application of the Keynesian theory of the transfer problem to the classical case for which it was developed. However, whilst the standard result on the Keynesian transfer problem is that transfers will be partly effected and partly recycled, I have argued in this article that the actual course of events in Germany was a sudden switch from one polar case to the other. In the 1920s, macroeconomic policies in Germany were so designed as to jeopardise the transfer of reparations. This is our Keynesian interpretation of Borchardt's first hypothesis regarding the role of wage increases and fiscal expansion in setting the stage for the slump. Due to the high stock of debt accumulated in that phase, foreign lending to Germany came to a halt, and from 1930 on, reparation transfers had to be fully effected. Then, the conclusion that the severity of the depression in Germany was caused by the austerity reaction to a foreign debt crisis is straightforward, invoking the Keynesian income-specie flow mechanism. This is our Keynesian inter-

pretation of Borchardt's second hypothesis concerning the lack of alternatives to the restrictive policies actually followed. Future research might be directed towards exploring other, actually more obvious transmission channels for the credit constraint described above, with a credit crunch perspective as an obvious candidate. The rather more limited purpose of this article was to show that Borchardt's research can easily be reconciled with the Keynesian perspective of his critics, to the effect that there is good reason to put an end to the Borchardt controversy.

Acknowledgements

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