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## On the burden of German unification: the economic consequences of Messrs. Waigel and Tietmeyer

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## Working Paper No. 328

On the "Burden" of German Unification  
The Economic Consequences of Messrs. Waigel and Tietmeyer

by  
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### INTRODUCTION

At the tenth anniversary of German unification, on October 3, 2000, little pretense was made about the economic situation in eastern Germany, the (promised) "Wirtschaftswunder" that did not happen. For the economic catch-up process in the East had already stalled a number of years ago: over recent years the new eastern Länder grew at an even slower pace than the old western ones. This is all the more remarkable for the fact, but may not be altogether unrelated to it, that western Germany's economic performance over the 1990s was outstandingly dismal: real GDP growth since 1992 averaged a meager 1.5 percent, and the unemployment rate nearly doubled as roughly 1.5 million jobs (or five percent of the labor force) were lost in western Germany until the end of 1997.

This paper does not concern itself with the disappointing economic developments in the new eastern Länder (see Akerlof et. al. 1991, Sinn and Sinn 1992, Heilemann and Jochimsen 1993, Hölscher and Stephan 1998, Sinn 2000, for instance). Rather, its objective is to investigate the causes of western Germany's remarkably poor performance since 1992. A widely held view on this issue seems to be that problems originating in the East proved contagious: the prior economic powerhouse West Germany seems to have been brought to its knees by the "burden" that the collapsing former East Germany presented to it. This "burden" of unification was most visible and most widely felt in the form of the drastic deterioration in public finances over the 1990s: a sharply rising tax burden, stagnating public consumption and falling public investment, and - in the context of the Maastricht "convergence criteria" the perhaps greatest public concern of all - protracted budget deficits and a steep increase in public indebtedness. Assessing the "trends in public sector debt since unification," the Bundesbank reaches the following conclusion that would seem to summarize well the German conventional wisdom on this issue:

Public debt has soared since the beginning of the nineties, mainly because of the fiscal consequences of German unification. Although part of the expenditure incurred in integrating the new Länder was financed by raising taxes and social security contributions and by cutting spending, particularly in the case of the Federal Government, substantial recourse was had to borrowing. However, increasing government indebtedness, as a partial response to the massive challenge posed by unification, is justifiable only for a limited period. Otherwise, there is a danger that the state might fall into a debt trap in which the budget deficit and the accumulated debt level become self-fueling as a result of the rapidly growing interest payment burdens. In order to avoid such a development, the adopted course of fiscal consolidation has to be strictly maintained (Bundesbank 1997, p. 17).

This paper challenges the view that the marked deterioration in public finances since unification, and western Germany's exceptionally poor performance more generally, might be largely attributed to unification. Specifically, this paper challenges the view, implicit in the Bundesbank's above assessment, that the rise in public indebtedness reflects that the virtuous course of fiscal consolidation might have been adopted either belatedly or not firmly enough. Instead, it is argued here that ill-timed and inexplicably tight fiscal policies in conjunction with tight monetary policies of an exceptional length and degree caused the severe and protracted de-stabilization of western Germany in the first place. The key result is that Germany's dismal

recent record must not be seen as a direct and apparently inevitable result of unification, but as the perfectly unnecessary consequence of stability-oriented macro policies conducted under the Bundesbank's dictate.

The analysis begins with a discussion of the economic and budgetary starting position of West Germany over 1988-90 and a preliminary assessment of the magnitude of the fiscal challenge posed by unification. The fact is that western Germany coped rather smoothly with the initial shock: real GDP grew strongly from 1988 through 1991 at low and stable - marked-determined - inflation, while the budget deficit rose by 3 percent only although few measures were undertaken initially to prevent any rise in borrowing. Section 3 investigates the sustainability issue of public finances. It is shown that unification posed no *immediate* risk of unstable debt dynamics, while any need for *medium-term* fiscal consolidation was rather limited too. The analysis then turns to the conduct of fiscal and monetary policies in sections 4 and 5 respectively. It is shown that Germany embarked on fiscal consolidation in a pro-cyclical and inexplicably aggressive way, which was not only in conflict with economic theory but also with the best practices observed in other more successful countries. In addition, the Bundesbank imposed tight money of an exceptional length and degree, magnifying rather than compensating the depressive effects of fiscal policy. Section 6 then estimates some of the fiscal consequences of sluggish growth due to the deflationary policy mix that has proved so highly counterproductive by causing Germany's dismal performance; while section 7 offers some final thoughts on the actual fiscal burden of unification. It is found that roughly one third of the actual rise in Germany's debt ratio (as well as a limited rise in the tax burden) may be properly attributed to unification, rather than the unsound macro policies pursued in response to it. Section 8 concludes.

## GERMANY ON THE EVE OF UNIFICATION AND THE ENSUING FISCAL PARADOX OF THE 1990s

Before assessing the soundness of the policy response to unification, both the initial state of the economy and the order of magnitude of the fiscal implications of unification need to be discussed. Truly, any assessment of subsequent developments over the 1990s must be impressed by the favorable economic shape of West Germany as the happy event arose. After having grown rather sluggishly ever since the 1981-2 recession, growth picked up markedly toward the end of the decade: GDP grew at 3.7 and 3.6 per cent in 1988 and 1989 respectively, almost double the pace of previous years. Not only exports were performing strongly, traditionally relied upon by Germany for igniting demand-led growth. Fiscal and monetary policies too contributed (belatedly) to the recovery in domestic demand: the income tax cuts of 1986 and 1988 were joined by an accommodative monetary stance until 1989. This policy-mix contrasted favorably with the first half of the eighties when fiscal austerity was allied with the Bundesbank's failure to cut interest rates in view of perceived "inflationary" risks due to exchange weakness; and economic activity thus stabilized at persistently depressed levels of domestic demand. The year 1989, when the Berlin wall came down, stands out as the finest year in a decade: non-inflationary and broadly-based GDP growth due to strong domestic and foreign demand, yielding high employment growth and a balanced public budget, with a trade surplus of 5 percent of GDP. (See Table 2.1.)

In 1990, however, the world economic situation changed for the worse. And with a marked slowdown in growth or even recession in both the US and parts of Europe, Germany's exports began to fall off sharply in the second half of the year. In view of these external developments unification represented not just a challenge (and responsibility) of getting former East Germany on track for a prosperous future. It was also a welcome opportunity for West Germany to prevent sliding into recession as well (in fact, a great opportunity for European growth). In this sense, then, the analysis of this paper concerns an unhappy story of missed opportunities.

Probably the most crucial root cause of the missing of this opportunity has to be seen in the fact that the key player in German economic policy-making, the Bundesbank, never regarded the situation as an opportunity for sustained growth, but primarily as a risk to price stability. This biased assessment was based on the belief that West Germany's economy was already running at its full potential by 1989, and was thus at serious danger of overheating and run-away inflation.

This assessment was proved evidently wrong by subsequent developments though: western German real GDP grew at a solid 5 percent rate in both 1990 and 1991. For one thing, one must not underestimate that the economy had operated at persistently and significantly depressed levels throughout the eighties and still had ample spare capacities by the end of the decade; particularly, unemployment was still above six per cent in

1989. It is thus noteworthy that the strong employment growth seen in those years was rather evenly distributed, including low-skill workers and long-term unemployed, that is, those habitually classified (and written off) as structurally unemployed. Moreover, the influx of labor from behind the former iron curtain provided important supply-side relief too, so that general labor market pressures proved anything but severe.

Pressures were high on western Germany's capital stock in these years. But it is not clear why inflationary pressures should have been expected to arise from this side either. If anything, running the capital stock at a high speed through rising machine hours and extra work shifts should boost profits and keep down average costs due to economies of scale, in turn stimulating investment to expand capacities and introduce the latest technologies. In actual fact, investment, potential output, and labor productivity grew very strongly in these years, so that growth on the supply side was both strong and broadly based. (Again, contrasting favorably with the trend of the eighties when weak demand and underutilized capacities made for slack investment and capacity growth.)

Another pivotal fact is that Germany is not a closed economy. No doubt, Germany's free drawing on external resources was welcomed by its trading partners, many of whom suffered from recessionary conditions at the time. Under such conditions, any idea that an expansion of aggregate demand in Germany might run against some kind of "saving constraint" was truly beside the point.

It was not very surprising, then, that western Germany's - allegedly fully employed - economy coped rather smoothly with the strains that unification put on its resources: GDP growth over 1989-91 was not only strong, but also *non*-inflationary.<sup>1</sup> Producer price inflation remained stable at around 2 percent throughout the period of strong growth, while headline CPI Inflation fell to 2.7 percent in 1990, slightly down from the previous year's 2.8 percent; all perfectly in line with Germany's inflation trend over the 1980s.<sup>2</sup> Headline CPI inflation then picked up slightly in 1991 to 3.5 percent, peaking at 4.0 percent in 1992, and falling rather sluggishly thereafter (back "below 2 percent" only by 1995). One important factor behind German price developments at the time were strong rent increases. This reflected the praised natural working of market forces in the housing market (due to strong immigration, in particular), and it is at least debatable whether provoking a general slowdown in economic activity represents an adequate policy response to it.

But another key factor was not even market, but wholly policy determined in the first place: rises in indirect taxes and government-administered prices; providing us a first, most conspicuous indication of the inconsistency of the policies pursued.<sup>3</sup> For the critical rise in headline CPI inflation in 1991 was chiefly caused by fiscal measures intended to reduce public borrowing requirements. Such attempts arose largely due to mounting pressures from the Bundesbank, in particular, arguing that cuts in public borrowing would be necessary in order to *prevent* inflation.<sup>4</sup> Yet, rather than preventing inflation, these very measures *caused* inflation in the first place.<sup>5</sup> In response, the 1991 rise in headline CPI inflation then provoked even tighter money by the Bundesbank.

This remarkable policy inconsistency not only caused the initial rise in inflation over 1991-2, it was also responsible for the sluggish fall in inflation thereafter. The deep recession of 1992-3 was critical in this regard, as borrowing requirements soared and ever-new rounds of indirect tax and administered price rises were implemented. These were intended to keep borrowing requirements low (and Bundesbank pressure at bay), but *caused* further "tax-push inflation"; developments which, in turn, discouraged the Bundesbank from monetary easing on the one hand, but encouraged the Bundesbank's on-going pressures for fiscal consolidation on the other (cf. Bibow 1998). This truly bizarre policy inconsistency had other far-reaching consequences too, not least by provoking accelerating wage inflation. The analysis will therefore return to this issue and the monetary policies of the Bundesbank in more detail in section 5 below. Before, however, a closer look at the order of magnitude of the fiscal challenge posed by unification is in order.

Starting from a balanced budget in 1989, the budget swung into a near 3 percent deficit over 1990-1. Two issues need to be kept separate here. One concerns the question of sustainability of budgetary positions, an issue which will be taken up in section 3 below. Another issue is that the budget deficit, or the change therein, does not provide any appropriate measure of the fiscal "burden" of unification, since the budget deficit is merely a summary measure of fiscal policy and economic performance generally. Fiscal transfers provide a more appropriate starting point for quantifying the fiscal implications of unification. But a number of complications arise in this regard too.

One complication is that (continuous) *flows* of current transfers-- and their financing--have to be kept separate from, what may be properly seen as, "inherited debts." The nature of the latter is to raise the debt [-to-GDP] ratio through one-off *stock adjustments*. And this will also tend to raise the interest service on the debt. The magnitude of this factor will be estimated in section 7 below. But more pertinent for assessing the fiscal effects on economic activity and the overall budgetary position are current transfer flows. It is through their effect on the budgetary position that current transfers are also relevant to the issues of sustainability and fiscal consolidation.

Official estimates by the German Finance Ministry (see Deutscher Bundestag 1998, 2000) put fiscal transfers in the order of magnitude of some DM 180 billion in each year since 1991, or roughly 6.5 percent of western German GDP. This figure is the sum of all unification-related expenditures and tax reliefs and hence not a correct measure of fiscal "transfers" though. An estimate of transfers (from West to East) proper may be derived by deducting federal revenues in eastern Germany from the above "gross" figure. Official estimates put "net" transfers in the order of magnitude of DM 120-140 billion in each year since 1991, amounting to roughly 4.5 percent of western German GDP (see table 2.2). Clearly unification posed a formidable fiscal challenge, not an unsurmountable challenge though, as it is also brought into perspective here that East Germany was a fairly small country compared to the economic giant to its west.<sup>6</sup>

Beware that "net transfers" do not provide an accurate measure of borrowing requirements arising due to unification. As it also needs to be taken into account that (gross) fiscal transfers benefitted public finances in western Germany through second-round (or multiplier effects) too, either directly by raising "exports" to the eastern German Länder, or indirectly by raising incomes in Germany's proper export markets. This may not be measurable with any degree of precision. But one would expect actual borrowing requirements to fall considerably short of DM 120-140 billion.<sup>7</sup>

The overall budget deficit for the year 1991 of *only* DM 85 billion or 2.9 per cent of GDP certainly confirmed this expectation. The swing from balance to a 2.9 percent deficit between 1989 and 1991 reflected the joint effects of mainly three factors: first, reduced revenues attributable to the income tax reform of 1990 of some DM 40 billion<sup>8</sup>, second, increased revenues attributable to increases in tax and social security contribution rates in 1991 of some DM 25 billion and, third, (net) fiscal transfers attributable to unification of some DM 106 billion.

Note here that *initially* measures aimed at financing the "burden" of unification other than through borrowing were introduced at a limited scale only. For one thing, this deliberate recourse to public borrowing represented the only practicable short-term policy option anyhow. More importantly, the chosen policy for coping with the fiscal exigency of unification was also well in line with one of the oldest economic doctrines around, that if "an immediate and great expence must be incurred in [any] moment of immediate danger, which will not wait for the gradual and slow returns of the new taxes ... government can have no other resources but in borrowing" (Smith 1776).

Keynesian reservations on deficit spending were clearly not applicable to the situation at hand, as the above analysis has already shown. Keynes's (1939) recommendation to increase taxes as a means of restraining aggregate demand referred to the prospective British war economy, which he envisioned to be literally fully employed and, moreover, largely cut-off from external resources. The Germany of 1990 and after was far from such exceptional war-time conditions.

Nonetheless, starting in 1992, and under mounting pressures from the Bundesbank, the rudder of German fiscal policy was turned hard right. After two years of significant expansionary stimuli effects<sup>9</sup>, which in a rather timely and counter-cyclical mode had prevented Germany from participating in the recession experienced in large parts of the world at that time, the German government began to introduce ever new fiscal measures with the aim of cutting its borrowing requirements.<sup>10</sup> A study by Heilemann and Rappen (1997) estimates that by 1995 the total effect of expenditure savings and increases in tax and social security contribution rates introduced meanwhile was sufficient to "finance" almost the whole of *gross* [sic!] fiscal transfers of DM 180 billion.

Thus, a glaring *fiscal paradox* emerges at this point. Up to 1991, it had been deliberately left to borrowing to

take up almost the whole of the fiscal brunt of unification. Then, between 1992 and 1995, a cumulative fiscal tightening occurred that was even far in excess of the high plateau of net fiscal transfers of some DM 120-140 billion per annum reached at that time and subsequently maintained for the rest of the decade; with tax and social security rates rising and government consumption and investment spending stagnating or even falling (see Table 2.2). And yet, by 1996, Germany's deficit ratio stood at 3.4 percent, that is, well above the initial level of 1991.

Clearly, something must have gone seriously wrong. I will offer a resolution to Germany's fiscal paradox of the 1990s further below. But before the analysis needs to address the sustainability issue of whether unification might have posed any risk of unstable debt dynamics and what degree of fiscal consolidation might have been required to (re-) attain a sustainable public finance position.

## THE ISSUE OF SUSTAINABILITY OF PUBLIC FINANCES: THEORY AND GERMAN EXPERIENCE OVER THE 1990s

Public concern about the public debt is closely related to the idea that rising public indebtedness implies rising taxes required to service the debt. It is thus vital to appreciate that in a *growing* economy a rising tax rate may *not* be required to service a growing debt. Although budget deficits - self-evidently - add to the absolute amount of the debt, and although the public debt stays on an ever-rising trend in absolute terms, this may be sustainable *indefinitely* and not involve any *relative* rise in the tax burden on account of the debt on tax payers. In short, even permanent deficits do *not* necessarily pose a risk of unstable debt dynamics resulting from an unsustainable fiscal position.

Evsey Domar's (1944) seminal essay on the "burden of debt" established the following: an economy growing at some constant rate,  $g$ , and with the government borrowing the same constant deficit ratio,  $\text{def}$ , in each period, the debt ratio,  $d$ , will not explode but gradually approach a constant of size  $\text{def} / g$ . Neither will the tax rate required to service the debt explode but approach a constant of size  $\text{def} / g * i$ ; where  $i$  is the rate of interest paid on public bonds (for simplicity assumed to be tax-exempt). Hence, while a complete collapse of GDP growth implies a clear risk of debt explosion, the higher GDP growth, the lighter the burden of debt. Domar (1944, p. 822) concluded that "the problem of the debt burden is essentially a problem of achieving a growing national income."

Luigi Pasinetti (1998a, b, 2000) proposed a definition of sustainability of public finances that renders this notion operational and applicable to specific economic situations. Public finances are judged *sustainable* as long as the public debt grows at a rate equal to or smaller than the nominal GDP growth rate, that is, whether the following condition is satisfied:

$$d_t \leq d_0$$

Pasinetti's approach to the issue is attractive for a number of reasons. First of all, it deliberately excludes the issue of optimality of some debt ratio, as economic theory has nothing definite to say on this anyway. Essentially, his definition "accepts" the debt ratio at  $t_0$ , whatever it may be, as given and concentrates on whether the current budgetary position may be maintained indefinitely without leading to a rise in the debt ratio started from. (If, for whatever reason, the initial debt ratio is considered "wrong," this definition still provides a benchmark to evaluate whether the debt ratio is changing in the desired direction.) Next, the proposed definition moves the key issue to center stage: a stable debt ratio implies a stable tax burden, on account of the debt, on tax payers; while a rising debt ratio implies a rising tax rate. In addition, it is made clear that there is no specific deficit ratio either that may be generally regarded as sustainable, but one that stabilizes a particular debt ratio at some particular rate of GDP growth. Accordingly, a sustainability relation between the deficit ratio and the debt ratio exists that features *stability* of these parameters:

$$\text{def} = -g d .$$

In fact, given the inequality sign featuring in the sustainability definition, the relation may actually be seen as a "boundary relation" defining the "sustainability area":  $\text{def} \geq -g d$ . A deficit ratio is judged sustainable as long as it does not exceed the product of the GDP growth rate and the debt ratio. For in this case there will be no tendency for either the debt ratio or the tax burden to rise. Clearly the overall situation crucially hinges on the rate of GDP growth, and fig. 3.1. illustrates the effects of growth on the permissible deficit ratio for

debt ratios of 40 and 60% respectively.

Finally, it should be noted here that Pasinetti's definition of sustainability is in a certain sense very strict. The sustainable position has to be already attained in the current period (which could then be maintained forever). Alternative definitions of sustainability (cf. Blanchard et al 1991, Buiter 1985, Buiter et al 1993) allow for more fiscal laxity in "the short term," as a current deficit judged unsustainable according to our definition might be compensated for by more fiscal rectitude in future periods. And the longer the horizon, the greater the leeway in this regard. Hence the definition chosen here combines the benefit of technical simplicity with strictness of criteria.

I now turn to applying the chosen sustainability concept to Germany's public finance position as it evolved in the period between 1988 and 2000. Figure 3.2. shows the evolution of both actual financial balances as well as "maximum stability balances." The latter refers to the deficit ratio that would have been sustainable indefinitely given the conditions prevalent in each period (i.e. the actual rates of nominal GDP growth and actual debt ratios). The difference between the actual financial balances and the maximum stability balances yields the "sustainability gap" (with a non-negative gap implying sustainable debt dynamics in the sense of a non-rising debt ratio). Fig. 3.2 shows significant *positive* gaps in the years up to 1992, then turning into protracted negative gaps until 1997-8.

An alternative debt scenario was included in fig. 3.2. featuring the Maastricht parameter of a 60% debt ratio as the "target" level throughout. (According to the above relation  $\text{def} = -gd$ , the combination of a 60% debt ratio and a 3% deficit ratio implicitly assumes nominal GDP growth of 5%; if it is further assumed that the random Maastricht criteria were at least meant to be internally consistent). A higher steady-state debt ratio may be attained along different paths though. For instance, a temporarily enlarged room of fiscal manouevre might be seen as a discretionary measure to re-ignite growth in case of cyclical slowdown. Also, stock adjustments may change the debt ratio swiftly, either due to privatization or the assumption of "inherited" debts (factors that played a role in Germany's case over the 1990s). For reasons to be further scrutinized below Germany actually attained a debt ratio of 60% in the late nineties, starting from 40% at the beginning of the decade.

Table 3.1 summarizes the key result: unification per se did not pose any immediate risk of unstable debt dynamics and unsustainable public finances. Rather, this problem only arose with the sharp recession of 1992-93, and it only abated with the (long-delayed) recovery in 1997-8.

An alternative way to assess the sustainability of the public debt from which important additional insights may be gained is to concentrate not on total budget balances, but on "primary" balances, defined *net of interest payments* on the public debt. Pasinetti (1998a,b) shows that another version of the above key relation emerges between the primary deficit ratio and the debt ratio, crucially depending on the difference between the interest rate and the growth rate. Interpreted as a boundary relation, the amended version defines the sustainability area as

$$\text{def } P \geq (i - g) d .$$

One important issue brought out by primary (rather than total) budget balances concerns the budgetary implications that stem directly from the constellation between the rate of interest and the rate of GDP growth of an economy. Another is that the budgetary implications of this constellation also depend on the level of the debt ratio. As shown above, when starting from any constant debt ratio as the norm or target level, the rate of GDP growth represents one key variable: the lower the rate of growth, the lower the sustainable (total) budget deficit. The more specific point to note here is that the "burden of debt," i.e. the tax rate required to pay the interest on the debt in particular, crucially hinges on the gap between the rate of interest and the rate of growth (cf. also Pasinetti 1997). The greater this "growth spread," the greater the *primary* budget surplus needed for keeping any given debt ratio stable. When this crucial constellation worsens, other public expenditures will have to be cut to keep the overall tax burden constant and the debt ratio from rising.

Figure 3.3 captures the sustainability question in terms of primary balances, broadly confirming the previous result: a serious problem of unstable debt dynamics only arose with the sharp recession of 1992-93, and it only abated with the recovery of 1997-8. Figure 3.4. shows the drastic worsening of the "anti-growth spread"

arising during the recessionary period of 1992-7. Clearly, the driving factor behind the worsening of the growth spread was the sharp and sustained drop in GDP growth in 1992-3. At that point, it seems, Germany was pushed into a low-growth trap, with GDP growth stuck well below the (implicit) Maastricht parameter of 5% but a rate of interest anchored at sufficiently higher levels throughout. An unfavorable anti-growth spread, in turn, tends to push the debt ratio on a rising trend. Table 3.2 summarizes these results.

A warning is in order here on treating the deficit and debt ratios, the rate of interest, and the rate of GDP growth as apparently independent parameters. This might usefully highlight the role of the constellation between the key parameters involved in assessing the sustainability of public finances. But the real problem is that these magnitudes are *not* independent of one another. In particular, a rise in the rate of interest not only directly raises debt servicing costs. Most likely, it also impacts negatively on GDP growth. Similarly, if budgetary attempts are then undertaken to cope with the rising interest burden and fiscal repercussions of slower growth, by cutting public expenditures and/or raising tax rates, this is again likely to impact negatively on GDP growth. A potential *inherent instability* emerges here as a rising debt ratio itself makes matters still worse, implying a rising interest burden. It is thus vital for successful consolidation to be alert to these interdependencies and avoid disturbing any favorable constellation between the key parameters involved.

A first intuition concerning Germany's fiscal paradox emerges here. Note that by 1997 the deficit had finally fallen to 2.6 percent (after six years of consolidation efforts starting from a deficit ratio of 2.9 percent in 1991). Germany thus took the fateful Maastricht hurdle of 3.0 percent. But its debt ratio was still not falling, but rising. For Germany's nominal GDP growth had meanwhile been forced down to 2.2 percent.<sup>11</sup> Perhaps, then, Domar's (1944) warning that choking off growth would not be the proper way to lighten the debt burden had not been taken all that seriously.<sup>12</sup>

Importantly, I do not wish to imply that real GDP growth of 4-5 percent, as achieved from 1988 to 1991, could have been sustained indefinitely. Rather, the point is that a large *positive* margin existed at that time. Hence the true issue is whether the landslide recession of 1992-3 was inevitable, or a soft landing attainable. The subsequent analysis modestly assumes that avoiding massive job losses in western Germany and sustaining nominal GDP growth of 5 to 6 percent was both the order of the day and perfectly well achievable by sound economic policies.

In conclusion, given the situation in 1991, any need for fiscal consolidation in view of German unification was small in medium-term perspective and non-existent for immediate concerns. For instance, if the 40% debt ratio existing at the time were taken as the target, a 2.0 or 2.4% deficit ratio would have been sustainable at 5 or 6% nominal GDP growth respectively. Alternatively, if the 60% debt ratio actually achieved by the end of the decade were taken as the target, the actual budget deficit of 1991 of less than 3 percent would have been permissible even at 5 percent growth. Things turned out rather differently though. But why? Because of unification? As already noted above, the world economic situation worsened sharply over 1990-1. And the subsequent section 5 will show that the Bundesbank imposed ultra-tight money at just that time. The next section inquires whether fiscal policy itself might have played any role in Germany's fiscal paradox of the 1990s.

## AUTOMATIC STABILIZERS AND DISCRETIONARY DESTABILIZERS: THEORY AND GERMAN PRACTICE

The budget balance is an endogenous variable rather than a policy instrument proper, as public finances and the economy are interdependent. On the one hand, fiscal policy affects the levels of aggregate demand and economic activity. On the other hand, the state of the economy is a major influence on the budgetary position. The notion of "automatic stabilizers" refers to the latter route of influence, i.e. the natural role of the budget to passively reduce instability in the system through its passive cyclical movements. By contrast, truly "discretionary" fiscal policy measures actively stimulate or retard aggregate demand through budgetary means over and above what is merely a reflection of the economy's impact on the budget. The budget balance may thus be decomposed as:

$$\text{actual budget balance} = f(\text{output gap}) + \text{structural budget balance}$$

The first part of the right hand side represents the cyclical balance, capturing the effects of automatic stabilizers on the budget, while the structural balance is defined as that hypothetical budgetary stance which

corresponds to potential output (or, a zero output gap). Correspondingly, a *change* in the structural balance is a measure of discretionary fiscal stimuli. The issue whether such discretion should be applied to actively stabilize the economy remains controversial. But letting the budget breeze along with the economy is universally considered as "sound finance." In fact, to behave otherwise would be in stark conflict with economic theory (see e.g. Taylor 2000).

The previous section concluded that unification presented no immediate need for fiscal consolidation. Faced with a sudden "shock," but also in view of the worsening world economy in 1990, the expansionary fiscal stimuli over 1990-1 were in line with theory and represented a great opportunity for sustaining growth in Germany (and Europe). This section assesses fiscal policy over the sustained recessionary period from 1992 to 1997, both in terms of theory and the best practices of countries that were more successful in consolidating their public finances over this period. Both the US and the UK achieved budget surpluses toward the end of the decade--implying falling *absolute* levels of debt--achievements for which they received widespread praise.

Figure 4.1 shows the development of general government financial balances in these three countries between 1988 and 2000. The US started from a deficit ratio of more than 3 percent in 1989, the final year of the long upswing of the 1980s. When, what turned out to be a fairly mild, recession hit in 1990 the deficit ratio rose to nearly 6 percent by 1992.<sup>13</sup> In 1992, the US economy bounced back and the long upswing of the nineties affirmed itself, with fiscal balances starting to improve from 1993 onwards and running into surplus by 1998. By comparison, the UK started from a far more favorable position, but when hit by severe recession in 1990, fiscal balances dramatically turned from surplus into a 8 percent deficit by 1993. And yet, by 1998 the UK too again realized a budget surplus.<sup>14</sup>

The remarkable thing about Germany is that the deficit ratio stayed at the 1991 level of around 3 percent until 1997. Only by 1997-98 public finances started to improve, ending the decade in a significantly worse state than in the US and UK though.

The evolution of debt and interest expenditure ratios confirm this picture. Starting from a significantly lower level, Germany overtook the US and UK in both respects (see figures 4.2. and 4.3). The rise in Germany's indebtedness in the first half of the 1990s is to *some* extent due to stock adjustments related to the assumption of "inherited debts" (see below). But more important was the *timing factor*, as illustrated by comparing the evolution of financial balances on a *synchronized* basis.

As Germany was clearly out-of-sync with the other two countries in the early 1990s, a comparison on a synchronized basis seems imperative. Both the US and the UK were hit by recession in 1990, while Germany was experiencing strong non-inflationary growth by that time. For reasons to be explored here, Germany then fell into recession in 1992, at which time recovery was already taking hold again in both the US and UK. The base year in Fig. 4.4,  $y_0$ , therefore refers to 1990 in the case of the US and UK, but to 1992 in Germany's. Accordingly,  $y_{+8}$  refers to 1998 in the case of the US and UK, but to the year 2000 in Germany's. Fig. 4.4 makes it clear that both the US and UK allowed their fiscal balances to deteriorate markedly when recession hit. By contrast, Germany's deficit ratio fell slightly in 1992, as consolidation started, only to bounce back to, and remaining stuck at, the pre-recession level in subsequent years of sluggish growth. Fiscal balances started to improve again early and quickly in both the US and the UK. By pure accident?

Far from it. The crucial point, the timing factor, is made blatantly clear by concentrating on the (synchronized) evolution of structural balances. As Fig. 4.5 shows, structural balances deteriorated together with financial balances in both the UK and US. By contrast, *Germany embarked on cutting structural deficits in 1992, that is, at the onset of recession*.

It is quite clear then what must have happened to bring about the evolution of overall financial balances as actually seen over the period: cyclical balances must have backfired severely in Germany's case.<sup>15</sup> In fact, as Fig. 4.6 shows, the US's cyclical balance deteriorated when the recession hit but quickly returned to positive territory when the economy improved. By contrast, in Germany's case there is a protracted negative cyclical contribution over the whole period.

Calculations due to the German Council of Economic Experts<sup>16</sup> shown in Fig. 4.7 confirm the timing factor.

Marked reductions in structural balances were concentrated in those critical years between 1991-94, while the overall financial deficit remained stuck at the same level until 1997. Privatization revenues then contributed significantly toward "consolidation" in the years 1994-98. In fact, the positive turn in the budget from 1996 to 1997 that allowed Germany to take the Maastricht 3.0 percent hurdle was largely due to faster growth--spurred by export demand.

In conclusion, the analysis shows that Germany assumed a rather counterproductive route toward fiscal consolidation. Given the important interdependency between the state of the economy and the state of public finances, fiscal policy is far more likely to achieving its ends by behaving in a stabilizing rather than de-stabilizing way, namely by conducting its affairs in a counter-cyclical rather than a pro-cyclical mode (cf. Horn and Scheremet 1999). Unfortunately, and despite the fact of starting from a very favorable fiscal position, the German authorities ignored economic theory. But German fiscal conduct was also in conflict with the best practices of other more successful countries. Comparing the German experience with the US and UK's, and even leaving monetary policy out of the picture at this stage, I feel therefore justified to presume that Germany too could have achieved a more favorable economic performance over the 1990s--if only more intelligent fiscal policies had been pursued, policies more in line rather than in conflict with economic theory.<sup>17</sup>

## MONETARY POLICY AND THE ROLE OF THE BUNDES BANK

But monetary policy cannot be left out of the picture. In fact, the timing factor is not only relevant for sound fiscal policy, but even more so for achieving a sound policy mix. For even with sound fiscal policies any economy may easily become unstuck if monetary policy does not play its part too; effective coordination between fiscal and monetary policies is crucial to the overall outcome. So if fiscal consolidation is the declared goal, as decided in Maastricht in 1991, it is not only required that fiscal policy is conducted in line with theory and avoids the kind of blunders seen in Germany over the nineties. There is also a clear need for monetary policy to sufficiently counterbalance any deflationary effects coming through from *planned* fiscal consolidation. Otherwise it becomes even more likely that consolidation fails ex post as the destabilized economy backfires on public finances.

As I have dealt with the Bundesbank's stability-oriented monetary policies of the 1990s extensively elsewhere (see Bibow 1998, 2000), a brief summary of some of the main facts must suffice here. Fig. 5.1 shows the (synchronized) monetary policy response to the recession of the early 1990s by the US Fed and the Bundesbank, respectively. When recession hit in the US, the Fed quickly reduced the real short-term rate of interest that it controls to around 1 percent, and when that proved insufficient to kick-start the economy, it was cut further to around zero. The Fed continued its ultra-easy money policy until the economy bounced back to life; at which point stance was set to neutral. By contrast, the Bundesbank's ultra-tight stance established on the eve of unification peaked as the economy cracked, and subsequent cuts were extraordinarily sluggish.<sup>18</sup>

No serious economist denies that restrictive monetary policy has largely real effects in "the short run."<sup>19</sup> Another key factor we need to appreciate then is that these (allegedly) "short-run" real effects may come to last for rather long when tight money is exercised for long enough. The "monetary conditions index"<sup>20</sup> of Fig. 5.2 shows that the Bundesbank hung on to the ultra-tight stance established in late 1989 for the subsequent six years! Until spring 1996, its extraordinarily sluggish interest rate cuts, starting in autumn 1992 and only reaching their (temporary) trough by mid-1996, were fully offset by DM appreciation. The real consequences of this not quite so short run of ultra-tight money were as theory would predict, and well reflected by the depressed level of capacity utilization included in Fig. 5.2<sup>21</sup> It is clear then that the Bundesbank's ultra-tight money stance established in 1990 and maintained for the subsequent six years were far from compensating, but *grossly magnified* the deflationary consequences of fiscal consolidation embarked on in 1992.

While the glaring facts of this doubly-counterproductive policy mix can hardly be denied conventional wisdom seems to hold that these policies were *inevitable*. They were inevitable because unification posed a threat of run-away inflation and unstable debt dynamics, and because of Germany's rigid labor markets. It is thus worthwhile to compare consumer price and wage trends in Germany and the US and return to the policy inconsistency pointed out in section 2 above.

To begin with, it seems rather striking that the allegedly rigid and structurally inferior (West) German economy delivered GDP growth rates of 3.7, 3.6, 5.0, and 5.0 percent in the years from 1988 to 1991, at low and stable - market-determined! - inflation. One key difference with regard to consumer prices that emerges from Fig. 5.3 is that the Bundesbank pushed headline CPI inflation from its 4.0 percent peak in 1992 to almost zero, while the US Fed appears to have been careful enough to never even try to push inflation "below 2%." But even more striking, the minor rise in German headline CPI inflation over 1991-2 was largely due to policy measures, a paradoxical phenomenon reflected by the core inflation measure<sup>22</sup> in Fig. 5.3. Attempts at fiscal consolidation, undertaken under Bundesbank pressure, led to significant rises in indirect taxes and administered prices, in turn provoking even tighter money from the Bundesbank. Clearly, neither the economy nor labor market participants are at fault when the authorities fail to grasp that the combination of counterproductively tight fiscal and monetary policies might initially cause headline CPI inflation to rise, and then to fall back only sluggishly. In short, the doubly-counterproductive policy mix even backfired on the Bundesbank's primary goal of price stability (Bibow 1999).

Turning to wage inflation, Fig. 5.4 shows peaks at comparable levels for Germany and the US. And it seems reasonable to presume that German wage inflation was pushed up over 1991-2 in line with headline CPI inflation due to tax-push factors. Clearly, excessive wage rises were not an issue at any time after 1992, when western German wage inflation remained even significantly below the US's. This itself is remarkable for the fact that rises in tax and social security contribution rates involved *falling* disposable real incomes for large parts of the population over the 1990s. In the US, the Fed's easy money policy, embarked upon when inflation was still above 3 percent, sparked the strong investment boom of the 1990s that was going to yield productivity increases sufficient to offset (relatively higher) US wage inflation, at *falling* rates of CPI inflation.

In conclusion, the analysis here challenges the idea that Germany's stability-oriented policies of the 1990s were in some sense "inevitable." Other policy options clearly existed, choosing wrong ones was anything but inevitable. Nor were the real consequences of these policies inevitable in any sense. Crucially, this is *not* to suggest that the Bundesbank should have allowed run-away inflation. Very far from it. At the most critical stage, a peculiar policy inconsistency--for which the Bundesbank more than anyone else bears responsibility--pushed headline CPI inflation up, rather than down. Moreover, the *crash landing* deliberately engineered and followed by a decade of depressive fiscal and monetary policies was at the heart of the rise in unemployment and Germany's fiscal paradox of the 1990s (including the sluggish headline CPI disinflation after 1992). This is not the occasion to inquire into the Bundesbank's deeper motives or Germany's peculiar institutional arrangements that allowed independent central bankers to become the dominant player in economic policy making. Von Hagen (1992, p. 215) puts it succinctly though: "The Bundesbank gave a high priority to credibility considerations and chose a tight stance without too much regard to the risk of unnecessarily choking off the economic growth badly needed in the transition phase." As Domar (1944, p. 821, n. 43) cheerfully remarked: "It is very amusing that those who appear most worried about the burden of the debt are usually least willing to advocate a lower interest rate on the debt!"

## SOME HYPOTHETICAL GROWTH SCENARIOS AND THEIR ESTIMATED FISCAL IMPLICATIONS

The previous two sections have established that unsound macro policies were responsible for provoking the protracted "anti-growth spread" that lies at the heart of the deterioration of German public finances after 1992. The objective of this section is to estimate the evolution of public finances under alternative, *hypothetical*, growth scenarios. The chosen scenarios (a) and (b) modestly assume that a soft landing and the subsequent continuance of 5 to 6 percent nominal GDP growth, respectively, were in fact feasible. The former scenario corresponds to the mythical Maastricht parameter and West Germany's record over the 1980s, the latter is nearer to both the US's performance over the 1990s as well as West Germany's own longer-term historical record.

Fig. 6.1 begins with estimating the most direct effect of higher growth on the evolution of the debt ratio. Even without taking any other effect on public finances into account, but simply treating the absolute level of debt actually accumulated until today as given, it is clear that today's debt ratio would be nearer to 50 or 55 rather than 60 percent. This factor alone thus illustrates well Domar's (1944) key message beautifully summarized in his closing remark:

If all the people and organizations who work and study, write articles and make speeches, worry and spend

sleepless nights - all because of fear of the debt - could forget about it for a while and spend even half their efforts trying to find ways of achieving a growing national income, their contribution to the benefit and welfare of humanity - and to the solution of the debt problem - would be immeasurable (Domar 1944, p. 823).

But higher GDP growth would have had effects other than simply making any given absolute level of debt more bearable relative to some higher GDP level. In particular, higher GDP growth would have been quite naturally accompanied by correspondingly higher tax revenues and lower government expenditure, most directly attributable to the soaring unemployment in western (sic!) Germany. Commonly used estimates of tax and expenditure elasticities for Germany would seem to imply that a one percent increase in GDP tends to reduce the budget deficit by roughly one half of one percent of GDP (OECD 1999b). These flow effects of higher GDP growth may be estimated on the basis of the sustainability analysis carried out in section 3 above in a number of steps.

As a first step, Fig. 6.2 shows the path of hypothetical budget deficits based on the just-mentioned rule of thumb that a one-percent shortfall of GDP growth increases the deficit by half a percent. In a second step, these hypothetical budget deficits are then seen to be consistently smaller than the maximum stability deficits that were calculated in Fig. 6.3 at 5 percent GDP growth.

Finally, Fig. 6.4 shows that on the basis of these hypothetical budget deficits Germany's debt ratio would have ended up closer to 50 rather than 60 percent by the late 1990s. These calculations confirm that a very severe fiscal tightening (i.e. *ex ante* deficit reduction) occurred since 1992. Alas, predictably, the untimely and overly ambitious tightening failed to deliver the intended results.<sup>23</sup>

These estimates refer to total budget deficits. It is also worthwhile to focus more specifically on the interest burden on the debt. The Bundesbank (1997, p. 23) refers to the "fact that a top-heavy interest rate-growth rate differential is currently the prevailing pattern worldwide," estimating that this factor added about 7.5 percentage points to Germany's debt ratio over 1992-6 (see Table 6.1). Curiously, though, this is much less of a "fact" than the Bundesbank makes it appear. Fig. 6.5 shows that (synchronized) growth spreads collapsed severely in the wake of recession in both the US and Germany. The US managed to re-establish a favorable growth spread in due course though, much in contrast to Germany. Fig. 6.6 shows that fairly closely allied (10 year government) bond yields at starkly different speeds of growth were behind the marked difference in growth spreads.

The effects of the growth spread on the interest burden may be calculated in two steps. First, the change in the debt ratio may be divided into the contributions due to the primary budget balance and to the (growth-adjusted) interest burden on the stock of debt of the previous period:

$$d_t = bb^P_t + (i - g)/(1 + g) d_{t-1}$$

As a second step, the evolution of Germany's public finances between 1992 and 1996 may then be recalculated on the basis of the US's growth spread. Table 6.1 puts the pattern allegedly prevailing worldwide into perspective: a non-negligible contribution of five percentage points to Germany's debt ratio can be most directly attributed to the effects of the Bundesbank's long run of ultra-tight policies on the interest burden. Recalculating the interest burden accumulated until the end of the decade shows that the gap even rose to ten percentage points by the end of 2000.

## SO HOW HEAVY A FISCAL BURDEN DID UNIFICATION PUT ON GERMANY'S SHOULDERS?

According to the Bundesbank, "it can at least be said that more than half of the increase in the overall indebtedness of the central, regional and local authorities since 1989 (totaling about DM 1,200 billion) is attributable to reunification" (Bundesbank 1997, p. 19). Remarkably, treating "more than" DM 600 billion in this way amounts to attributing almost the whole of the rise in Germany's debt ratio until the end of 1996 to unification (in fact, "more than" 17 out of 19.3 percentage points; see Table 6.1). In the light of the above analysis, this assertion appears to be well off the mark. A closer look at the Bundesbank's calculations and assumptions thus seems in order here.

Apart from attributing 7.5 percentage points (Table 6.1, column 4) to the interest burden, the Bundesbank estimates that "inherited debts" have added some 12.6 percentage points (Table 6.1., column 5) to

Germany's debt ratio between 1990 and 1996 (by the end of which the increase in the public debt due to unification-related old debts had essentially run its course). The amount of inherited liabilities from the German Democratic Republic (GDR) are put at "approximately DM 340 billion." This is the indebtedness of the "Redemption Fund for Inherited Liabilities" which by 1997 had assumed the debts of the "Debt-Processing Fund," "Treuhand Agency," east German housing enterprises, former GDR's social institutions, and "equalization claims." If redemptions effected until 1997 are included and the prospective debts of the "Indemnification Fund" added, the amount of properly inherited debts may be put at DM 365 billion.

In addition, the Bundesbank (1997, p.19) asserts that the "indebtedness of the east German Länder Governments and local authorities plus the new borrowing by the 'German Unity' Fund and the bulk of that by the ERP Special Fund since 1990 can be ascribed unambiguously to reunification," additional borrowing of some DM 235 billion. It is not clear at all though that the borrowing of these authorities should have pushed up Germany's debt ratio. Borrowing by the east German Länder Governments and local authorities may have simply established what are "normal" financial relations in West Germany and other developed economies. Comparing the debts incurred by these authorities with the east German Länder GDP, it turns out that by 1996 their debt and interest expenditure ratios were below west German levels, as was their debt level per inhabitant.<sup>24</sup>

More importantly, it is rather unsafe to assume, as the Bundesbank seems to do, that lower deficit spending would have left GDP unaffected, either its steady-state level or its actual path in the context of restructuring eastern Germany's economy. Like the budget balance, the debt ratio can not be treated as an exogenous variable, certainly not in "the short run" of a decade or so. In short, the question whether these non-inherited debts due to current deficits pushed up Germany's debt ratio is far more complex than the Bundesbank makes it appear. Given that the aspired policy goal was for former East Germany to catch up to the West, it may well turn out that too little rather than too much deficit spending was undertaken by these authorities.

As regards borrowing by the German Unity Fund, it should be noted here that the transfers financed by the Fund's borrowing were already included in net transfers and their effects on Germany's public finance position in sections 2 and 3 above. To avoid double-counting, the German Unity Fund's borrowing cannot be considered as an stock-adjustment factor here as well.<sup>25</sup> Borrowing by the ERP Special Fund of some DM 27 billion after 1989 is especially interesting. Given that the ERP Fund's borrowing served mainly to finance low-interest loans to the east German economy, another facet of the above-mentioned policy inconsistency emerges here. On the one hand, the monetary authority pushes up interest rates to engineer a "stabilization crisis." On the other hand, the fiscal authority tries to assure that the investment desperately needed for growth and reconstruction of eastern Germany's economy does not collapse under the mounting burden of financing costs.<sup>26</sup> The consequences of stability-oriented monetary policies for public finances are rather clear-cut. To classify the borrowing of the ERP Fund as "unification-related" misses the point.

It seems to me that a more accurate picture of the fiscal "burden" of unification may be obtained by directly focusing on net fiscal transfer flows on the one hand, and stock adjustments due to inherited debts on the other. The former has to be seen in relation to western German GDP, the latter relative to All-German GDP. Table 7.1 illustrates the evolution of these two ratios under actual and hypothetical growth scenarios of 5 and 6 percent respectively.

The fiscal burden of current transfers would have shrunk to roughly 3.5 percent by the end of the decade. Recall that (net) transfers are estimated in a way that takes only partial account of the self-financing effects of deficit spending. Furthermore, higher growth in the West could hardly have failed to raise growth in the East as well, thereby reducing the volume of transfers required.

Stock adjustments due to inherited debts would have pushed up the debt ratio by roughly 8 percentage points or a third of its actual rise, if economic policies had allowed a more benign growth scenario. This would have raised the interest burden on the debt by roughly 0.5 percent of GDP.

To be sure, taken together the fiscal implications of these two clearly unification-related factors confirm that unification posed a huge fiscal challenge. In view of the fact that the budgetary position attained before unification was such as to allow significant tax cuts (at the 40 percent debt ratio established at the time),

the price Germany had to pay as an investment for getting its own unified future on track and keeping it there was clearly non-negligible. Some degree of fiscal consolidation would have been required at some point if the debt ratio had been stabilized at, say, 50 percent (assuming that any rise due to inherited debts plus some slippage was unavoidable in anything but the long term). But this "price" was raised out of all proportions by the policies chosen to cope with this historical challenge and responsibility. An enormous opportunity was missed and the actual fiscal tightening of the 1990s was far in excess of any proper "burden" of unification.

The crucial point to note here is that the debt ratio rose further than necessary exactly because ill-guided attempts were applied to keeping it too low. Similarly, the actual fiscal tightening undertaken without achieving the aspired goal of keeping the debt ratio from rising ever higher turned out excessive exactly because fiscal policy was ill-timed and inexplicably ambitious, all too desperate at trying to catch up with the fiscal implications that poor growth in western Germany inflicted on the budget, and all along accompanied by counterproductively tight monetary policies.

There is thus a clear explanation for Germany's fiscal paradox of the 1990s. In addition to unification-related transfers (mass unemployment in the East, in particular), Germany also had to put up with the fiscal consequences of sluggish growth and roughly 1.5 million job losses in the West. Given the disparity between East and West in relative economic size and income levels, the extra burden deliberately or carelessly provoked in the West was even heavier than what had to be shouldered in the East at any rate. And there can be no doubt that more favorable developments in the West would have proved beneficial for the transformation of the East too.

## CONCLUDING OBSERVATIONS

This paper challenges the view that the drastic deterioration in Germany's public finances and western Germany's exceptionally poor performance over the 1990s are attributable to unification, representing a kind of "burden" of unification. In particular, the analysis denies what must be the key - defeatist - postulate of the conventional wisdom, namely, that Germany's dismal performance was in some sense "inevitable." Rather, it is shown that thoroughly unsound macro demand policies were pursued in response to unification, policies that were in conflict with both economic theory and the sound practices of other more successful countries. The analysis in this paper merely presumes that fiscal and monetary policies could, in principle, be conducted more intelligently in Germany too.

In this regard, the initial unification-related sharp rise in deficit spending in 1990-1991 stands out as the one aspect of fiscal policy that was both quite inevitable and *not* out of line with economic theory. What Mr. Waigel must be blamed for is that he failed to lay out and promote, at an early stage, *any* credible medium-term financing plan, unnecessarily causing uncertainties. But the key fiscal mistake only occurred when an ill-timed and overly ambitious consolidation plan was embarked upon in 1992. Mr Waigel predictably failed to retain public finances under control once his policies had destabilized western Germany (hitting back on the budget with a severe vengeance).

But occurrences in Germany over the 1990s cannot be properly understood without paying due tribute to the pivotal and fateful role of the Bundesbank. The long run of excessively tight monetary policy orchestrated by the Bundesbank between 1990 and 1995 truly magnified the counterproductive effects of poorly conducted fiscal policies. And this was far from all. To anyone familiar with the realities of economic policy making in Germany it is quite clear that the role of the Bundesbank went far beyond the conduct of poor monetary policies. Effectively, the Bundesbank was in charge of macro demand policies, rather than just monetary policy. Nonetheless, in any democracy, presumably, ultimate responsibility for the outcomes of economic policies always rests with the democratically-elected representatives, the government of Helmut Kohl and its notoriously unsuccessful Finance Minister Theo Waigel. It represents a barely aspiring peculiarity of German democratic traditions and institutions that those *actually in charge* not only lacked any democratic legitimacy, but cannot be held to account for their performance either.

Mr Tietmeyer's span at the Bundesbank's helm from 1993 to 1998 thus stands out as the period of Germany's by far worst economic performance on record. Yet when Mr Tietmeyer left office in the summer of 1999, Germany's conservative media (firmly under Bundesbank spell!) praised him as the best Bundesbank President ever, grading him as a "first" (equal to Germany's headline CPI inflation of one percent at the

time).<sup>27</sup> This would seem to prove that maximizing the personal prestige of an independent central banker might come at a high price to society at large. It represents something of a tragedy though that the happiest political event in Germany's post WWII history provoked its most burdensome economic policy disaster.

Curiously, the thoroughly unsound fiscal and monetary policies of the 1990s caused many of those structural problems the Germany of today is famous for. Paradoxically, the Bundesbank's deflationary policies even proved *inflationary* at the most critical stage. Ironically, the overall fiscal tightening and deterioration of Germany's public finances that occurred over the 1990s was *far in excess* of what would have been strictly required to cope with the challenges and responsibilities posed by unification. A great opportunity was missed, and Germany (and Europe) paid a dear price for a policy experiment based on doctrines and beliefs the relation of which to economic theory is anything but clear. In the very least, those who fallaciously hold that the stability-oriented crusade of the 1990s represented the best policy option available should expressly face up to the gigantic real costs deliberately caused by their preferred policies. The results of the Great German Deflation of the 1990s should not be blamed on unification. For these dismal outcomes do *not* represent any burden of unification, but the economic consequences of Messrs Waigel and Tietmeyer.

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Table 2.1. Some Key Facts about West Germany's Economic performance over the 1980s

	GDP			employment		unemploy-ment rate		public sector (as a percentage of nominal GDP)			
	in DM million	growth % nominal	growth % real	total no. in 1000	growth %	commonly used %	budget balance	public debt	public expenditure	tax burden	
1980	1472.0	6.0	1.0	26980	1.5	3.2	-2.9	31.7	48.9	42.6	
1981	1535.0	4.3	0.1	26951	-0.1	4.5	-3.7	35.4	49.7	42.5	
1982	1588.1	3.5	-0.4	26630	-1.2	6.4	-3.3	38.7	50.0	42.7	
1983	1668.5	5.1	1.8	26251	-1.4	7.9	-2.5	39.1	48.7	42.1	
1984	1750.9	4.9	2.8	26293	0.2	7.9	-1.9	40.1	48.1	42.2	
1985	1823.2	4.1	2.0	26489	0.7	8.0	-1.1	41.6	47.7	42.5	
1986	1925.3	5.6	2.3	26856	1.4	7.6	-1.3	41.5	47.1	41.8	
1987	1990.5	3.4	1.5	27050	0.7	7.6	-1.8	42.2	47.4	42.0	
1988	2096.0	5.3	3.7	27261	0.8	7.6	-2.1	42.2	47.0	41.7	
1989	2224.4	6.1	3.6	27658	1.5	6.8	0.1	39.9	45.3	41.9	
1990	2426.0	9.1	5.0	28479	2.6	6.2	-2.0	42.0	45.8	40.3	

Sources: Statistisches Bundesamt.

Table 2.2. Some Key Facts about Germany's Economic Performance Over the 1990s

	Western Germany				The Burden		Germany								
	GDP			Employ- ment	Unemploy- ment Rate	Fiscal Transfers (net)	GDP	Public Sector (as a percentage of nominal GDP)							
	in DM billion	nom % g	real % g	total number in 1000	commonly used	in DM billion	as % of western German GDP	in DM billion	budget balance <sup>1</sup> (in DM billion)	budget balance <sup>1</sup>	public debt <sup>1</sup>	iD	Cg	Ig	Tr
1990	2426.0	9.1	5.0	28479	6.2	45	1.9	n.a.	-49.7	-2.0	43.8	--	--	--	--
1991	2647.6	9.1	5.0	29189	5.5	106	4.0	2938.0	-85.20	-2.9	41.5	2.8	19.2	2.7	15.1
1992	2813.0	6.2	1.8	29457	5.8	114	4.1	3155.2	-78.9	-2.5	44.1	3.3	19.8	2.9	16.3
1993	2840.5	1	-2.0	29002	7.3	128	4.5	3235.4	-103.5	-3.2	47.1	3.4	19.9	2.8	17.4
1994	2962.1	4.3	2.1	28656	8.3	126	4.3	3394.4	-84.9	-2.5	49.4	3.3	19.7	2.7	17.1
1995	3049.8	3	0.9	28464	8.4	140	4.6	3523.0	-112.7	-3.2	57.1	3.7	19.8	2.3	18.1
1996	3112.3	2	1.1	28156	9.1	140	4.5	3586.5	-121.9	-3.4	59.8	3.7	19.9	2.1	19.3
1997	3202.6	2.9	2.3	27884	9.9	136	4.2	3666.5	-95.3	-2.6	60.9	3.6	19.5	1.9	19.3
1998	3329.0	3.9	2.7	27915	9.4	141	4.2	3784.4	-64.3	-1.7	60.7	3.6	19.1	1.8	18.6
1999	3402.5	2.3*	1.4*	n.a.	8.8	144 <sup>p</sup>	4.2	3877.2	-42.6	-1.1	61.0	3.5	19.0	1.8	18.6

Sources: Statistisches Bundesamt, Deutsche Bundesbank (1997), Federal Finance Ministry.

Notes: West German data (GDP, employment and unemployment) for 1990-98 based on ESA 1979 national accounting conventions, estimates 1999. All-German data based on ESA 1995. Net fiscal transfers as estimated by Federal Finance Ministry.

<sup>1</sup> Maastricht definition

\* Estimates

<sup>p</sup> Planned

Table 3.1.

## Sustainability of German Public Finances with Reference to Total Budget Balances, 1988-2000

	<i>d</i> <sup>1</sup>	<i>g</i>	<i>def</i>	<i>-gd</i>	Differenc (3) - (4)	<i>-g</i> 60%	Difference (3) - (6)
	debt ratio (1)	GDP growth rate % (2)	actual deficit ratio (3)	maximum stability deficit (% GDP) (4)	sustainability gap (a) % (5)	maximum stability deficit (% GDP) (6)	sustainability gap (b) % (7)
1988	42.2	5.3	-2.1	-2.24	0.14	-3.18	1.08
1989	39.9	6.1	0.1	-2.43	2.53	-3.66	3.76
1990	43.8	9.1	-2	-3.99	1.99	-5.46	3.46
1991	41.5	9.1	-2.9	-3.78	0.88	-5.46	2.56
1992	44.1	7.4	-2.5	-3.26	0.76	-4.44	1.94
1993	47.1	2.5	-3.2	-1.18	-2.02	-1.5	-1.7
1994	49.4	4.9	-2.5	-2.42	-0.08	-2.94	0.44
1995	57.1	3.8	-3.2	-2.17	-1.03	-2.28	-0.92
1996	59.8	1.8	-3.4	-1.08	-2.32	-1.08	-2.32
1997	60.9	2.2	-2.6	-1.34	-1.26	-1.32	-1.28
1998	60.7	3.2	-1.7	-1.94	0.24	-0.92	0.22
1999	61.0	2.5	-1.1	-1.53	0.43	-1.50	0.4
2000	61.1	3.5	-1.2	-2.14	0.94	-2.10	0.9

Sources: OECD (2000).

<sup>1</sup> From 1990 onwards Maastricht definition of gross public debt (OECD Annex Table 61).

Table 3.2.

Sustainability of German Public Finances with Reference to Primary Balances, 1988-2000

	$d^1$	$i$	$g$	$(i - g)$	$def\ p$	$(i - g)d$	Difference (5) - (6)
	debt ratio % (1)	rate of interest % (2)	GDP growth rate % (3)	(anti)- growth spread % (4)	primary deficit ratio % (5)	stability primary deficit (% GDP) (6)	sustainability gap % (7)
1988	42.2	6.6	5.3	1.3	0.2	0.55	-0.35
1989	39.9	7.1	6.1	1	2.2	0.4	1.8
1990	43.8	8.7	9.1	-0.4	-0.1	-0.18	0.08
1991	41.5	8.5	9.1	-0.6	-0.7	-0.25	-0.45
1992	44.1	7.9	7.4	0.5	0.1	0.22	-0.12
1993	47.1	6.5	2.5	4	-0.5	1.88	-2.38
1994	49.4	6.9	4.9	2	0.2	0.99	-0.79
1995	57.1	6.9	3.8	3.1	-0.1	1.77	-1.87
1996	59.8	6.2	1.8	4.4	-0.3	2.63	-2.93
1997	60.9	5.7	2.2	3.5	0.5	2.13	-1.63
1998	60.7	4.6	3.2	1.4	1.4	0.85	0.55
1999	61.0	4.5	2.5	2	2.0	1.22	0.78
2000	61.1	5.8	3.5	2.3	1.8	1.41	0.39

Sources. OECD (2000).

<sup>1</sup> From 1990 onward Maastricht definition of gross public debt (OECD Annex Table 61).

Table 6.1. Estimating the Weight of the (Growth-adjusted) Interest Burden

year	Debt ratio at the end of the year % (1)	Change in the debt ratio in percentage points (2)	Of which the Bundesbank (1997) attributes to			Alternative hypothetical scenario based on US performance		
			Primary budget balance (% of GDP) (3)	Interest burden effect based on German growth spread (4)	Assumption of inherited (East German) debt (5)	Interest burden effect based on US growth spread (6)	U.S. interest rate (7)	U.S. growth rate (8)
1991	41.1				1.0			
1992	43.7	2.6	0.3	0.3	2.1	0.6	7.0	5.6
1993	47.8	4.1	0.9	2.0	0.3	0.3	5.9	5.1
1994	50.1	2.3	-0.3	1.1	2.0	0.4	7.1	6.2
1995	57.7	7.7	-0.5	1.8	6.8	0.9	6.6	4.6
1996	60.3	2.6	-0.3	2.3	0.4	0.4	6.4	5.6
1992 -1996	--	19.3	0.1	7.5	12.6	2.6	--	--
1997	60.9	0.6	0.5	2.0	--	0.1	6.4	6.2
1998	60.7	-0.2	1.4	0.8	--	-0.1	5.3	5.5
1999	61.0	0.3	2.0	1.2	--	-0.1	5.6	5.7
2000	61.1	0.1	1.8	1.4	--	-0.3	6.6	7.1
1999-2000	--	20.1	5.8	12.9	--	2.2	--	--

Sources. OECD (2000), Deutsche Bundesbank (1997, p. 24).

Note: For reasons of comparability the figures stated in columns (1) to (5) for the years 1991 to 1996 are the original ones the Bundesbank used in its calculation in 1997 (except for the one percentage point attributed to debt assumptions in 1991 that actually arose over 1990-1991). By contrast, columns (1) to (5) for the years 1997 to 2000 as well as columns (6) to (8) are based on OECD (2000) data.

Table 7.1. Estimating the Fiscal "Burden" of Unification

	Actual GDP Growth			Hypothetical 5% GDP Growth			Hypothetical 6% GDP Growth		
	GDP <sup>w</sup>	Net fiscal transfers	Transfer ratio	Inherited debts/GDP <sup>g</sup>	GDP <sup>w</sup>	Transfer ratio	Inherited debts/GDP <sup>g</sup>	GDP <sup>w</sup>	Transfer ratio
1990	2426.0	45	2368.4		2426.0	1.9		2426.0	1.9
1991	2647.6	106	4.0		2647.6	4		2647.6	4
1992	2813.0	114	2780.5		2780.0	4.1		2806.5	4.1
1993	2840.5	128	2909.1		2919	4.4		2974.9	4.3
1994	2962.1	126	3073.2		3065	4.1		3153.4	4
1995	3049.8	140	3181.8		3218.3	4.4		3342.6	4.2
1996	3112.3	140	3414.6		3379.2	4.1		3543.2	4
1997	3202.6	136	3578.9	365/ 3877.2 =	3548.2	3.8	365/ 4340.8 =	3755.8	3.6
1998	3329.0	141	3710.5	9.4%	3725.6	3.8	8.4%	3981.1	3.5
1999	3402.5	144 <sup>p</sup>	3891.9		3911.9	3.7		4220	3.4

Sources: Statistisches Bundesamt, German Federal Finance Ministry.

Notes: Transfer ratios refer to western German GDP (based on ESA 79 national accounting conventions) while contribution of inherited debts to rise in debt ratio refer to All-German GDP (based on ESVG 1995 national accounting conventions).

<sup>w</sup> denotes western Germany

<sup>g</sup> denotes All-Germany

Figure 3.1. The Basic Sustainability Relation  
Growth is the key

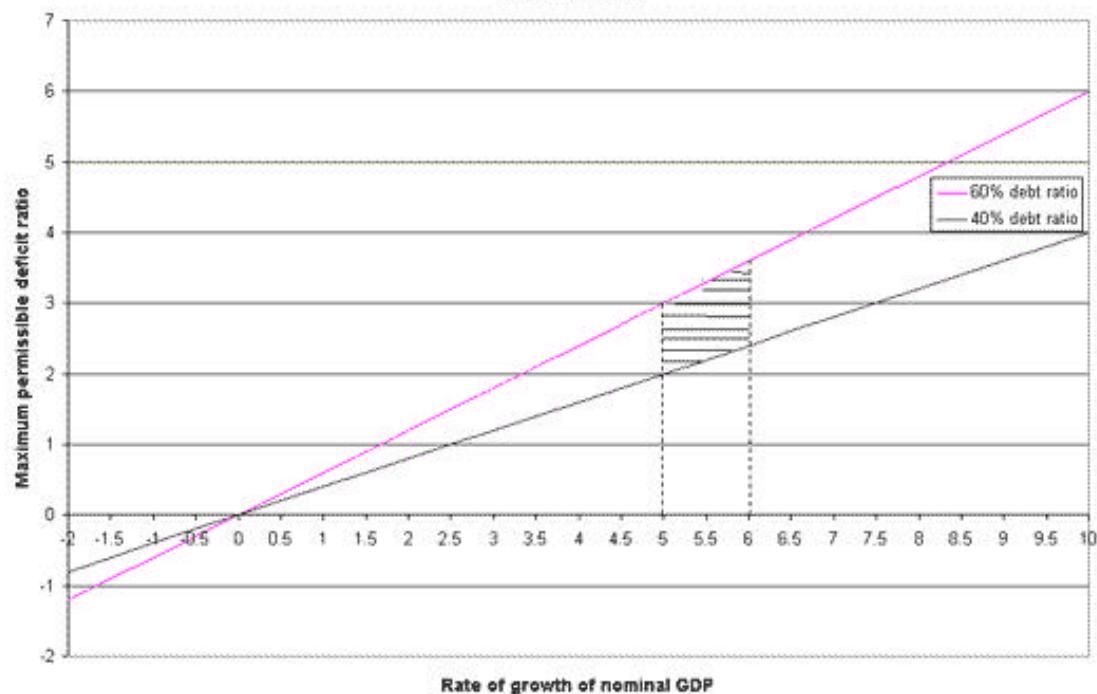


Fig. 3.2 Sustainability of German Public Finances With Reference to Total Budget Balances

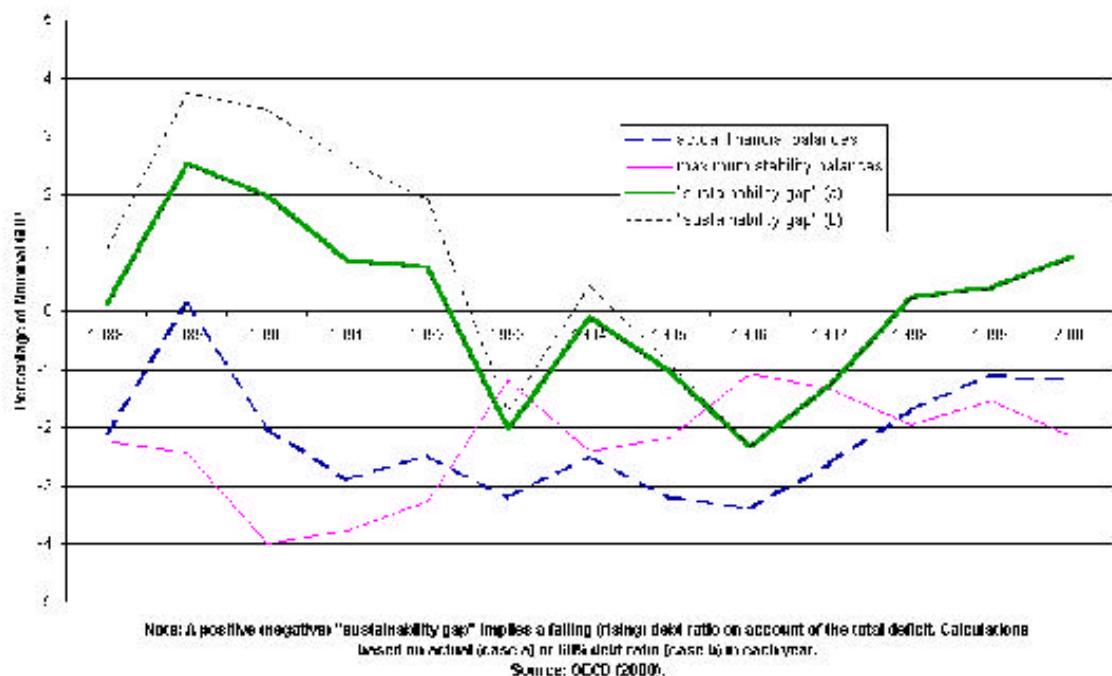
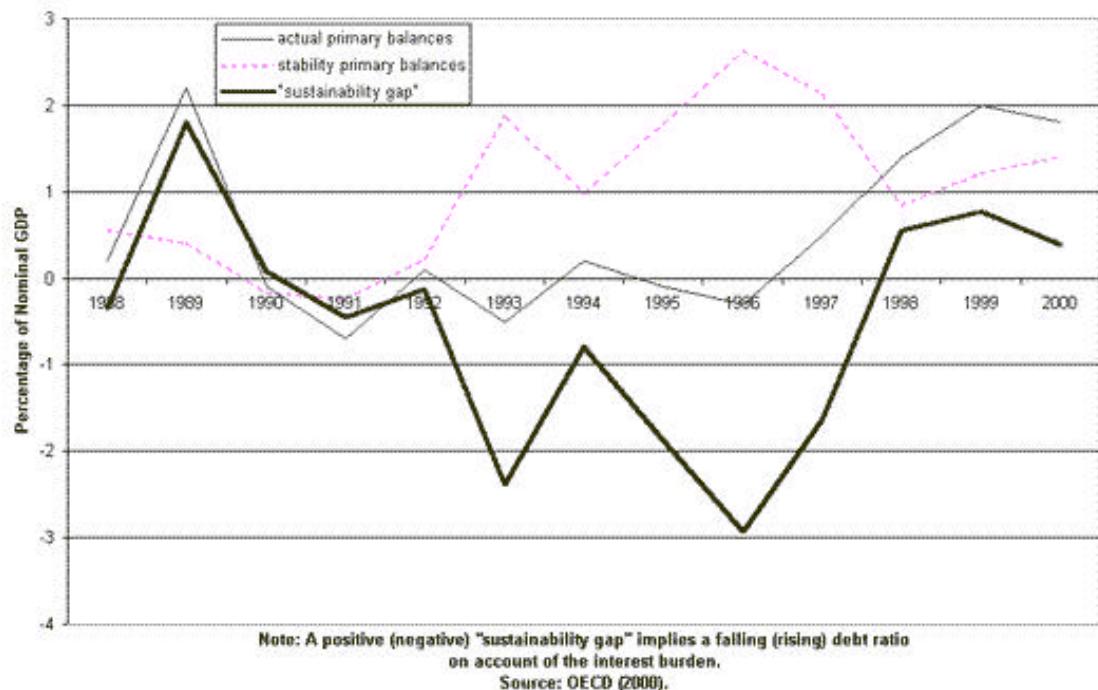
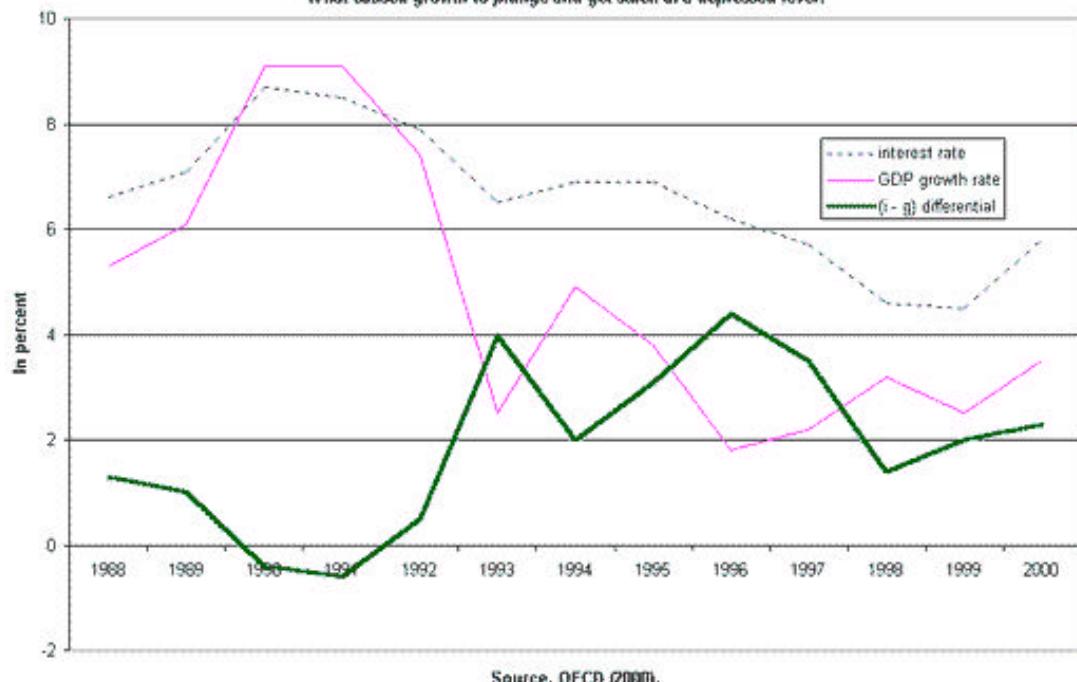


Fig. 3.3 Sustainability of German Public Finances with Reference to Primary Balances



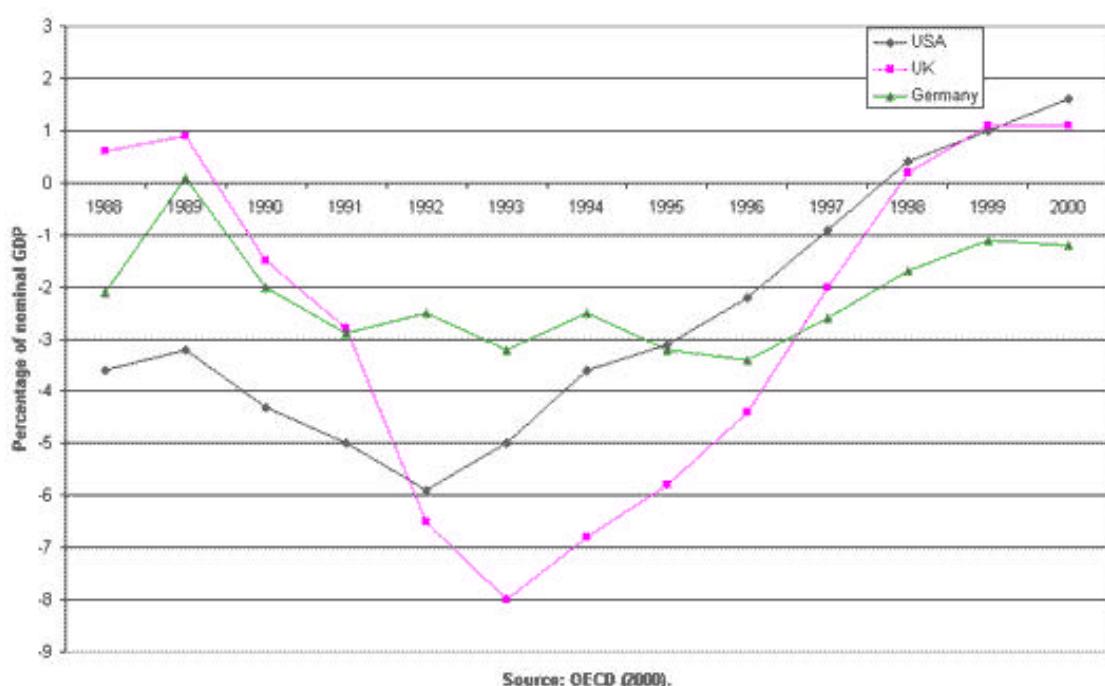
**Fig. 3.4 The Key Constellation Driving the Interest Burden**  
 What caused growth to plunge and get stuck at a depressed level?



Source: OECD (2000).

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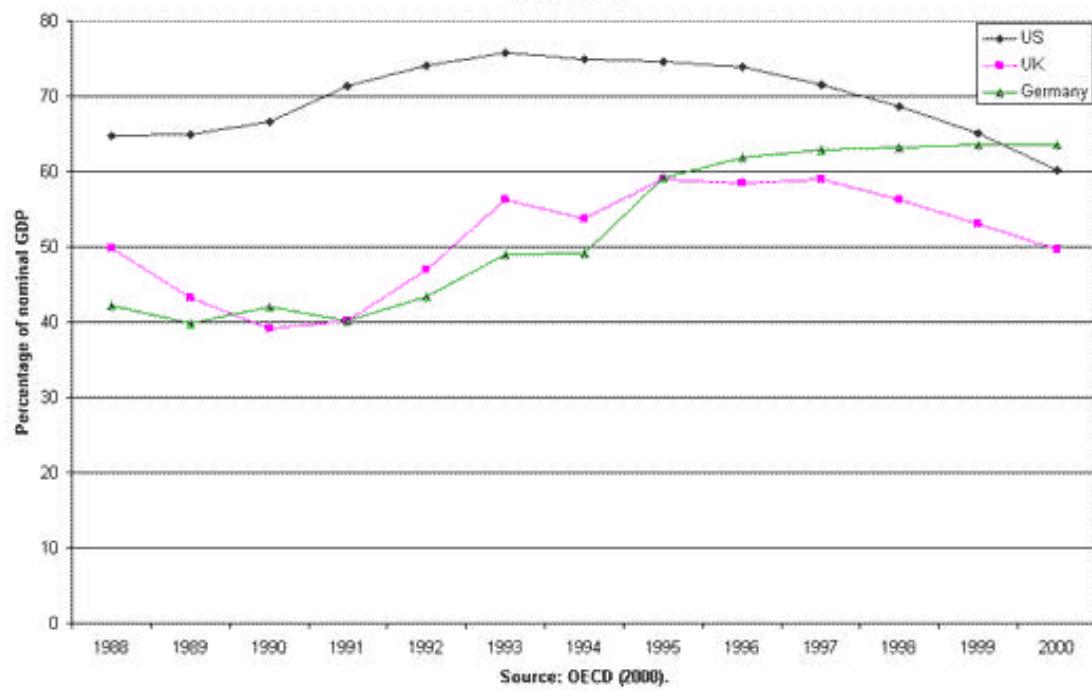
**Fig. 4.1 General Government Financial Balances, 1988-2000**



Source: OECD (2000).

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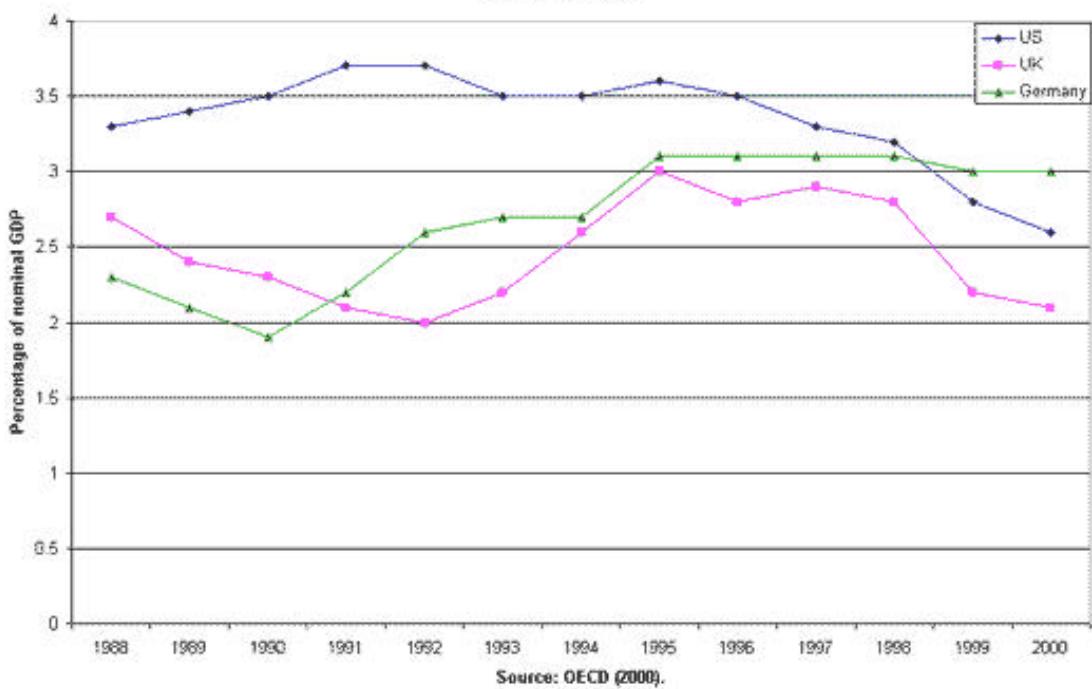
**Fig. 4.2 Comparing the Success of Different Fiscal Consolidation Strategies**  
*The debt ratio*



Source: OECD (2000).

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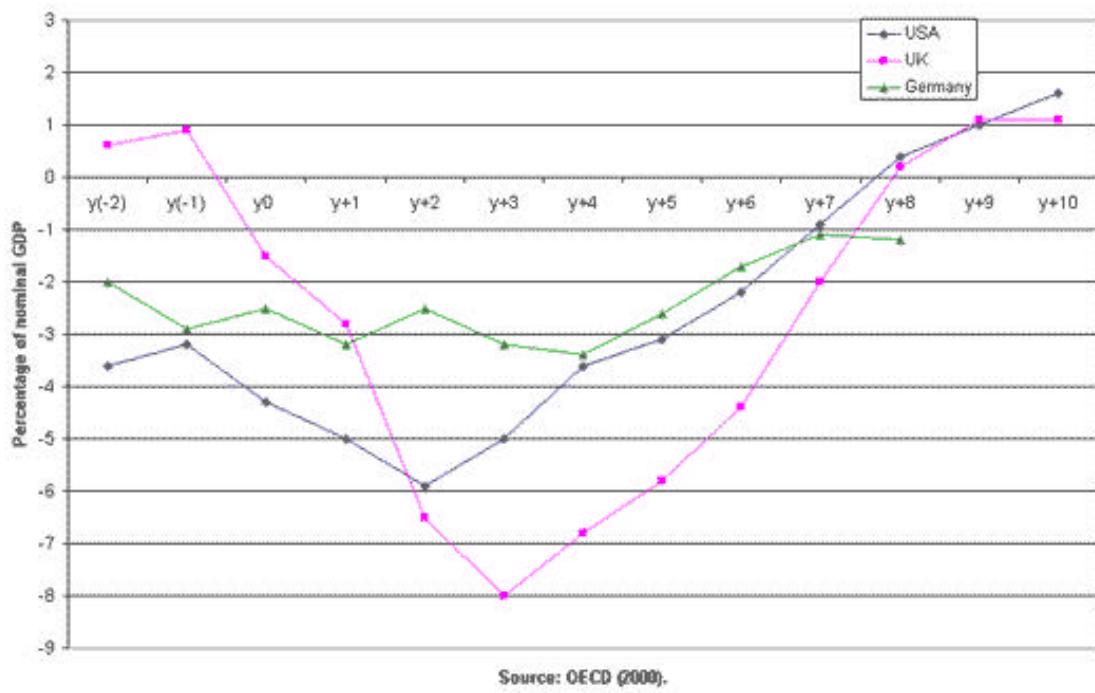
**Fig. 4.3 Comparing the Success of Different Fiscal Consolidation Strategies**  
*The interest burden*



Source: OECD (2000).

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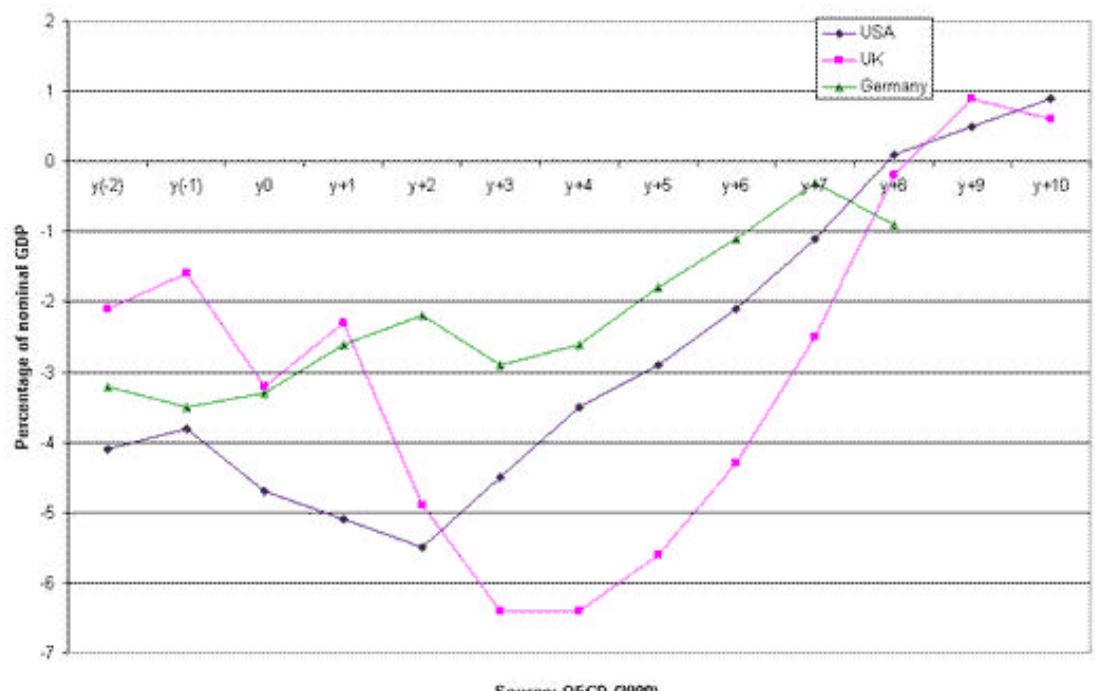
**Fig. 4.4 Synchronized General Government Financial Balances**



Source: OECD (2000).

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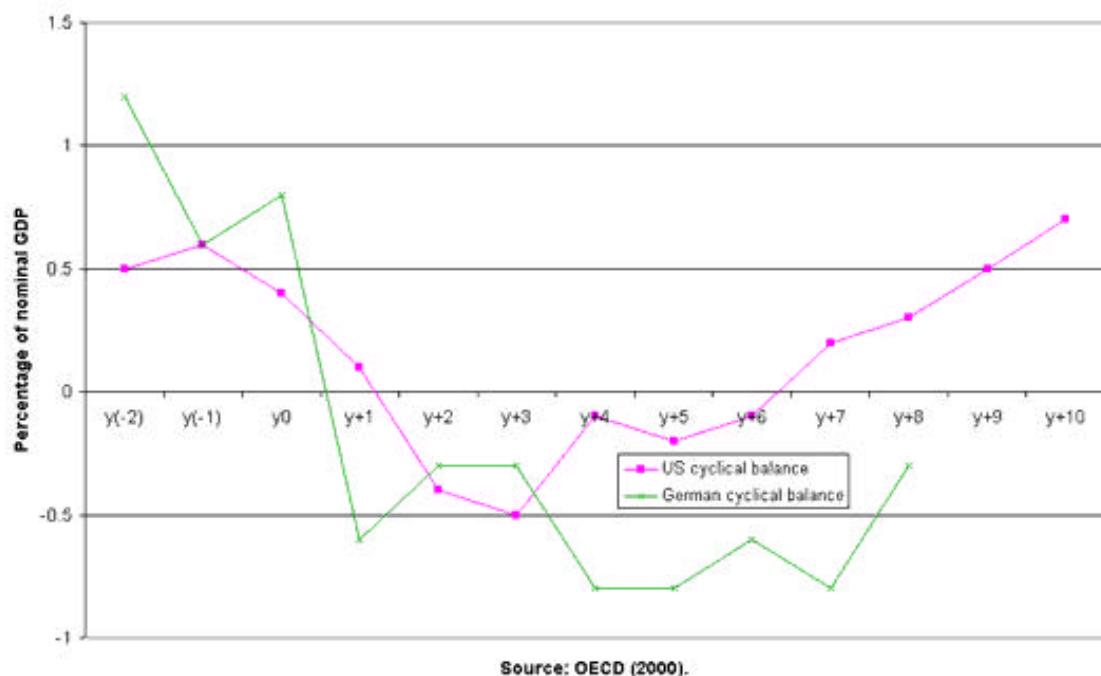
**Fig. 4.5 Synchronized General Government Structural Balances**



Source: OECD (2000).

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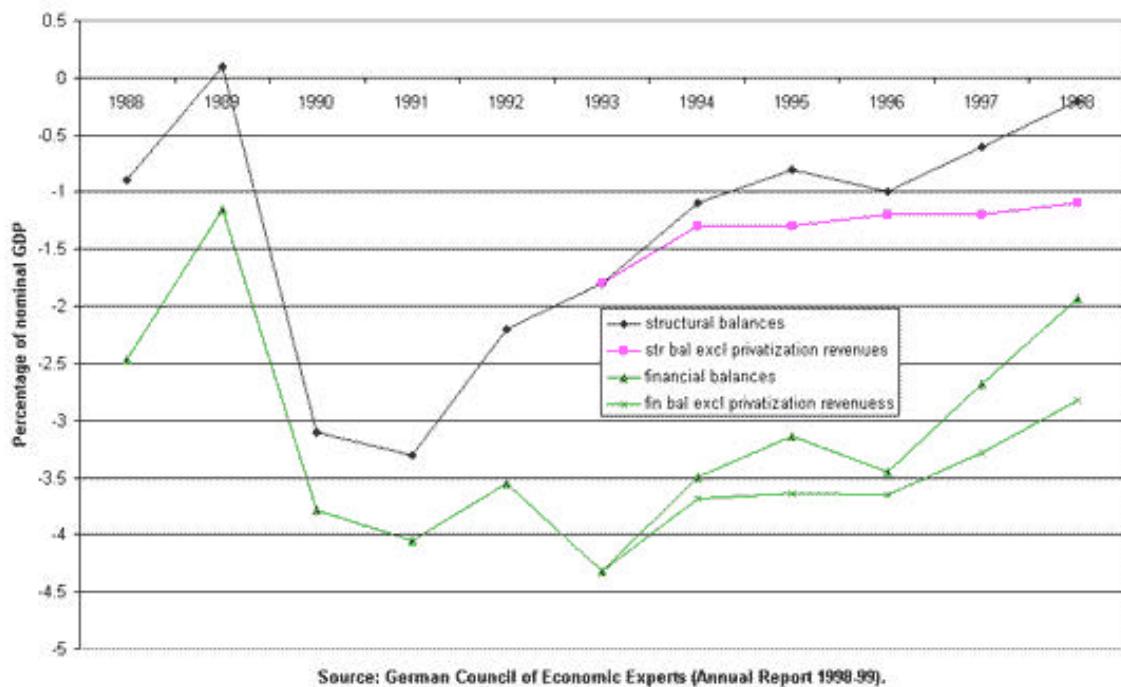
**Fig. 4.6 The Evolution of Cyclical Balances**  
*The performance of counter-cyclical vs. pro-cyclical fiscal policies*



Source: OECD (2000).

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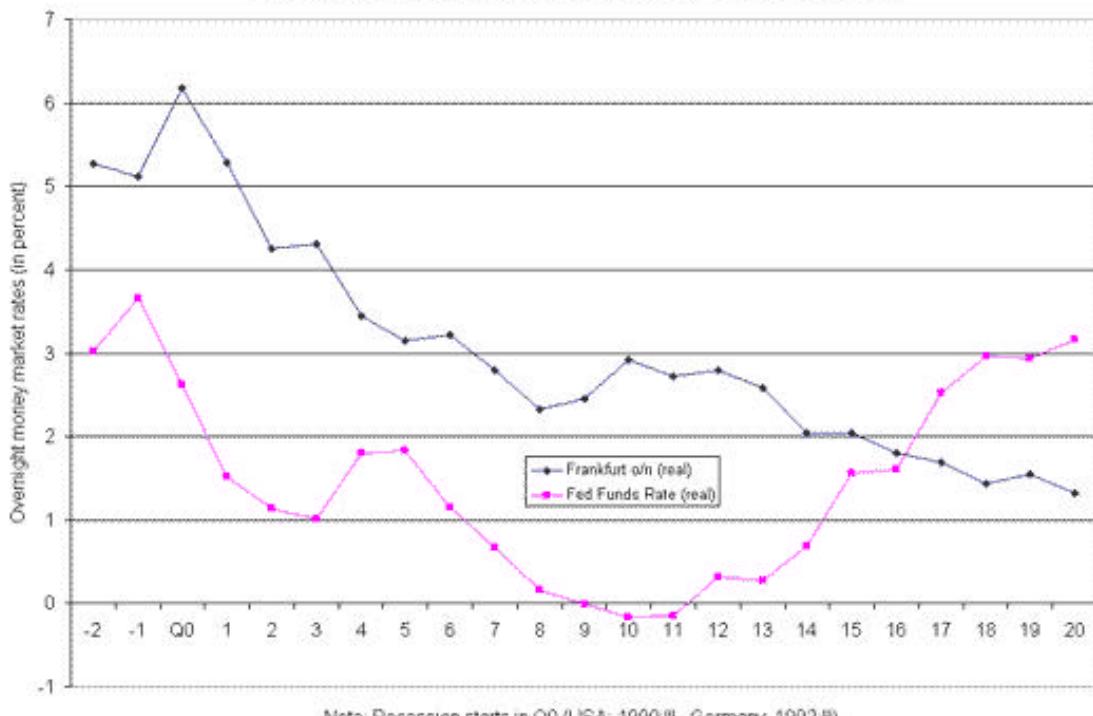
**Fig. 4.7 A Pro-cyclical Attempt at Fiscal Consolidation That (Predictably) Failed**



Source: German Council of Economic Experts (Annual Report 1998-99).

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**Fig. 5.1 The Monetary Policy Response to the Recession of the Early 1990s**  
 Comparing the U.S. Fed with the "stability-oriented" approach of the bundesbank



Note: Recession starts in Q0 (USA: 1990:II - Germany: 1992:II).

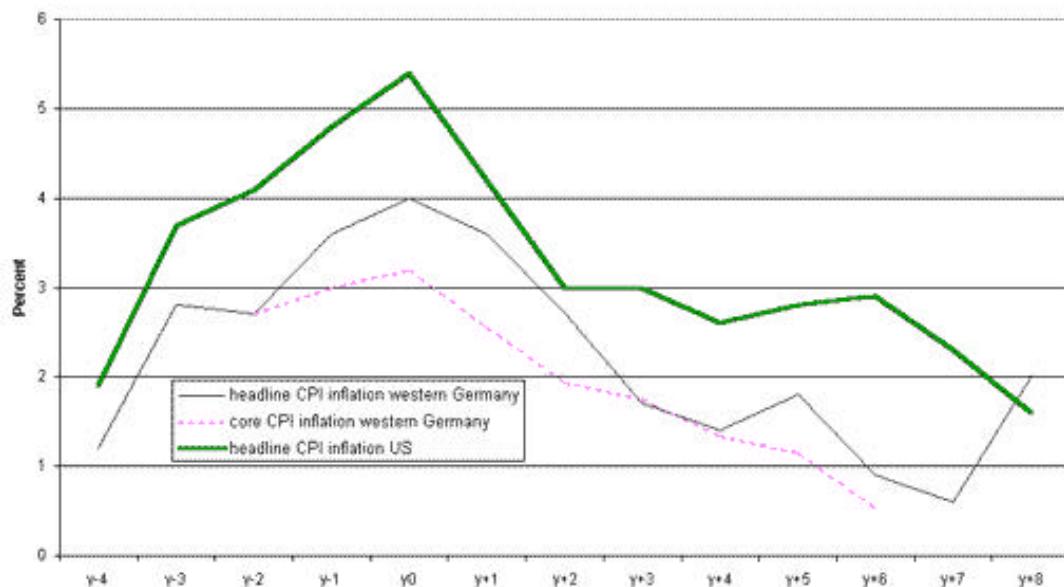
Sources: IMF, Deutsche Bundesbank.

**Fig. 5.2 Monetary Stance and the Real Economy**



Sources: German Council of Economic Experts, Deutsche Bundesbank, Statistisches Bundesamt.

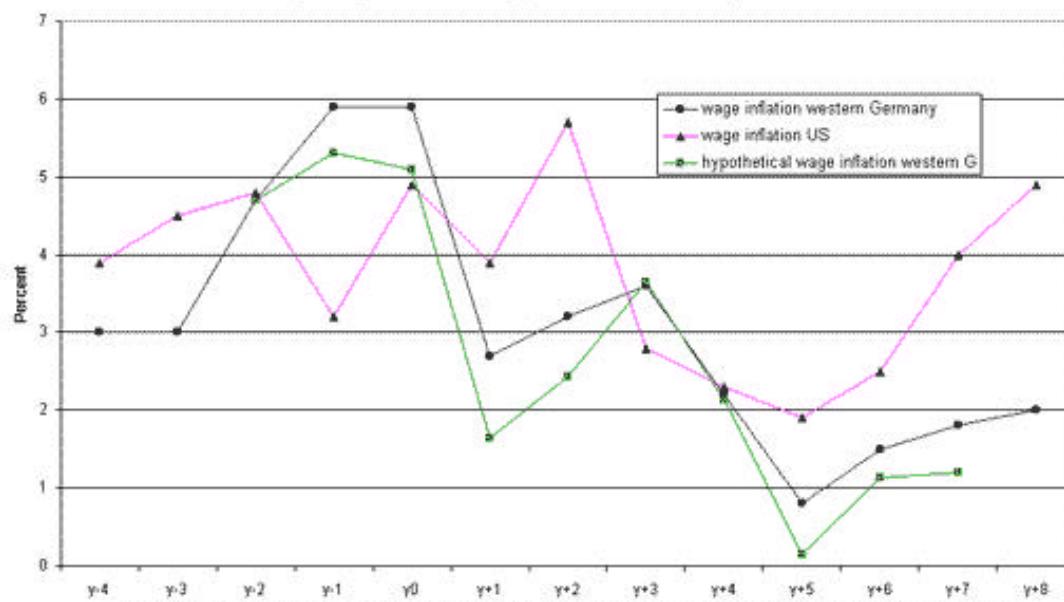
**Fig. 5.3 Synchronized Consumer Price Inflation in Germany and the U.S.**



Notes: The base year (y0) corresponds to 1990 in the US's case and to 1992 in Germany's; the measure of core CPI inflation excludes "tax-push inflation".

Sources: OECD (2000), Bundesbank, Statistisches Bundesamt, Weeber 1998.

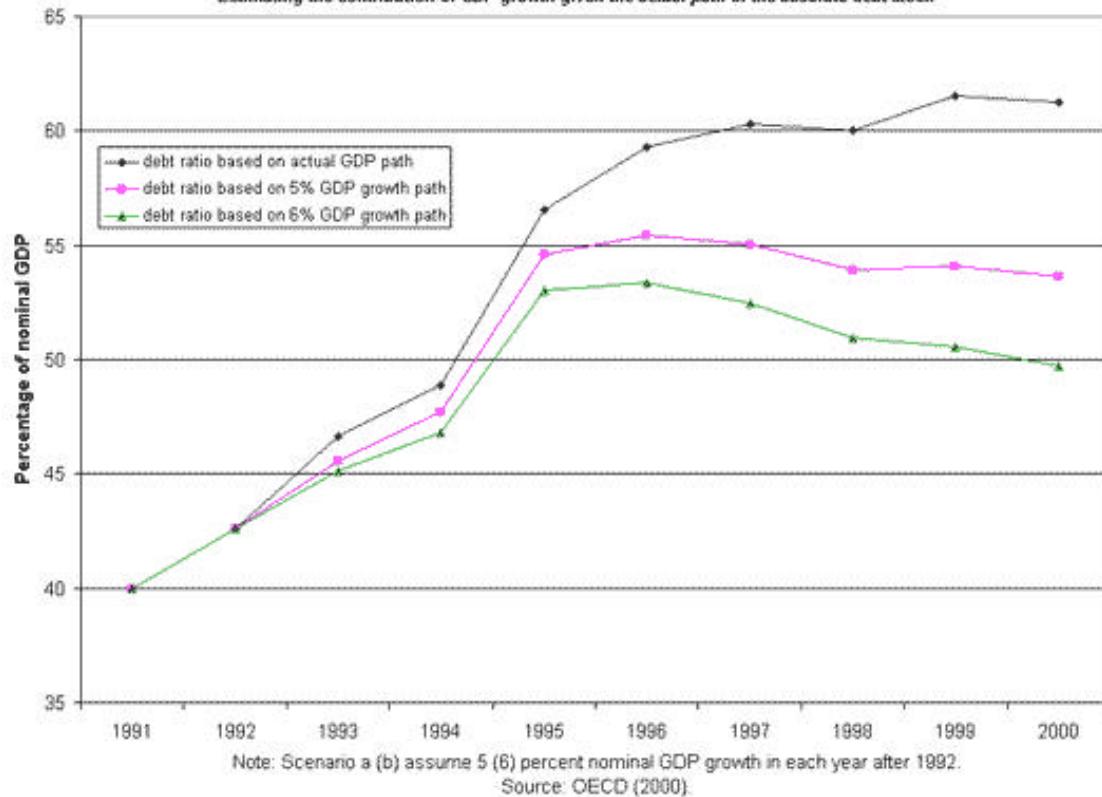
**Fig. 5.4 Synchronized Wage Inflation in Germany and the U.S.**



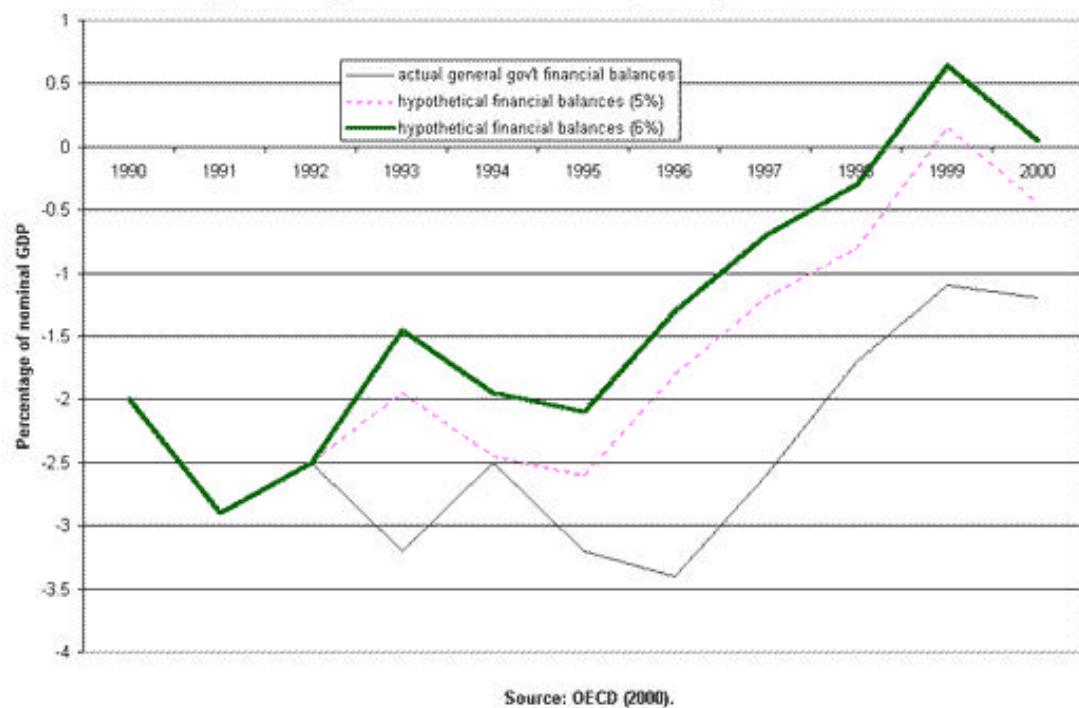
Notes: Hypothetical German wage inflation excludes distortions due to tax push inflation (Weeber 1998). The base year (y0) corresponds to 1990 (US) and 1992 (Germany) respectively.

Sources: OECD (2000), Bundesbank.

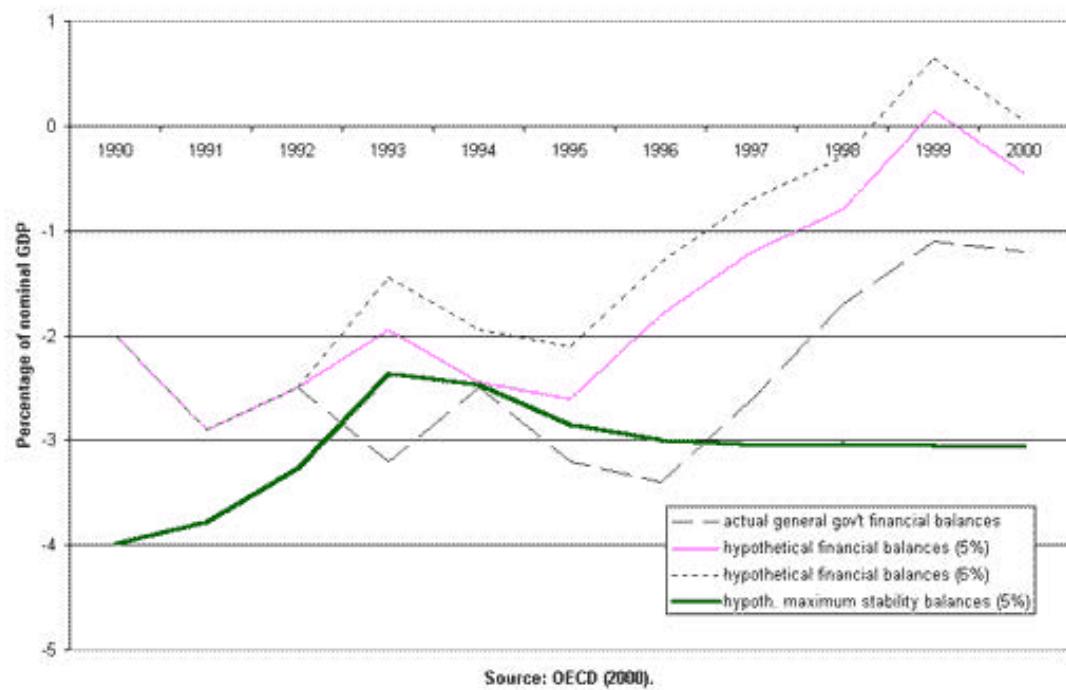
**Fig. 6.1 The Effects of Hypothetical GDP Growth Paths on Germany's Debt Ratio**  
*Estimating the contribution of GDP growth given the actual path of the absolute debt stock*



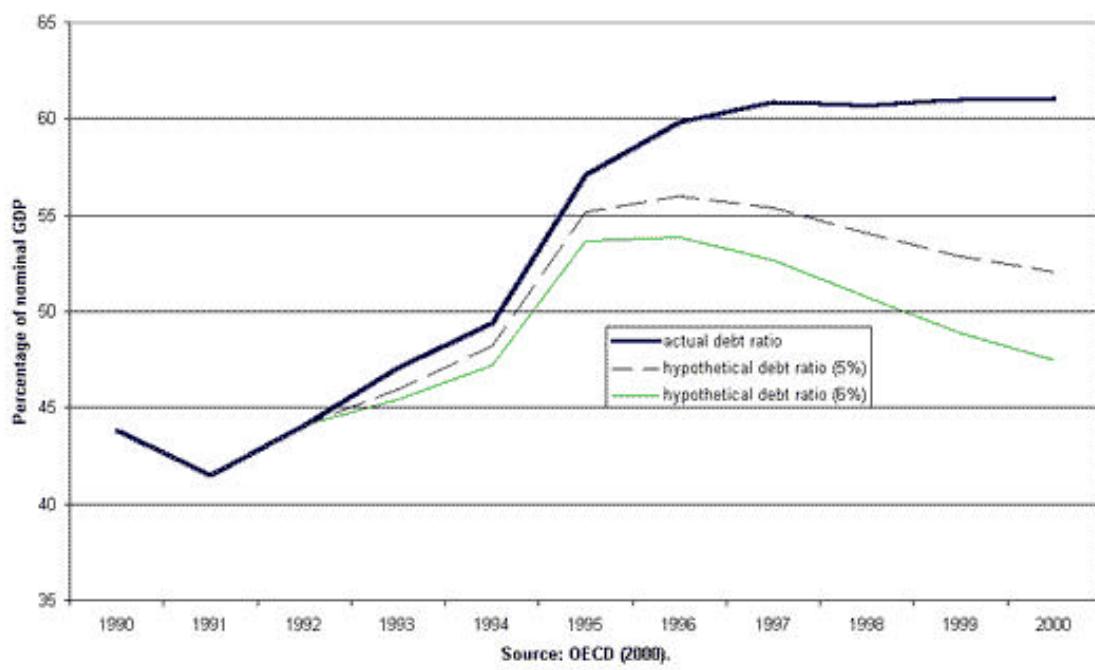
**Fig. 6.2 The Hypothecial Evolution of the Budget in Higher Growth Scenarios**



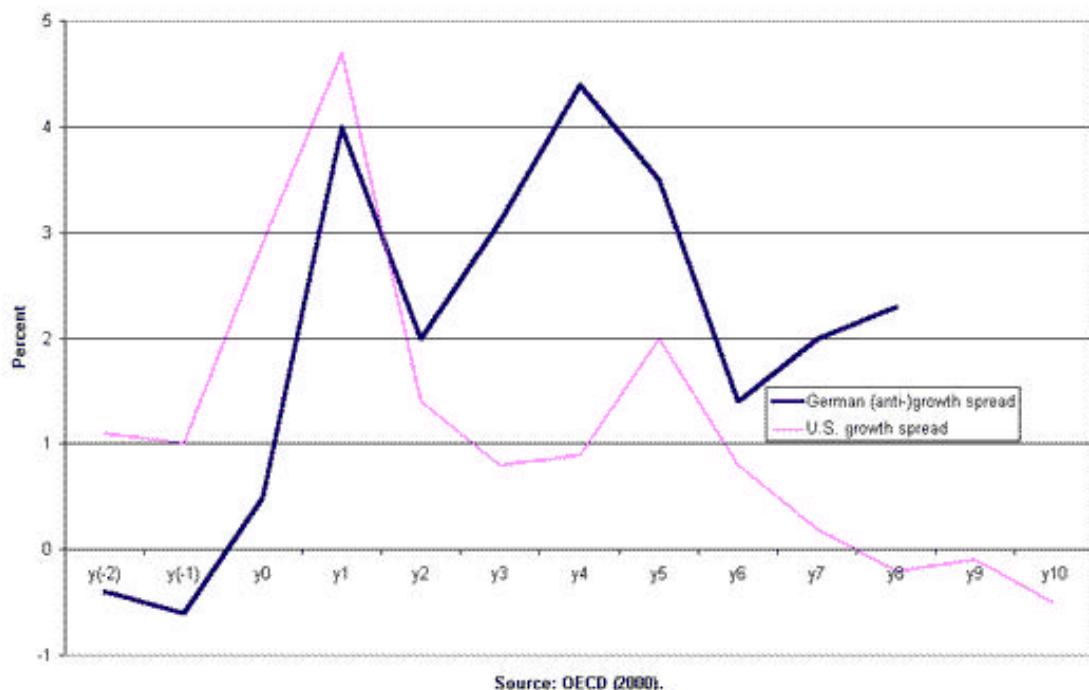
**Fig. 6.3 The (non-) Issue of Sustainability in Higher Growth Scenarios**



**Fig. 6.4 The Effects of Hypothetical GDP Growth Paths on Germany's Debt Ratio  
Estimating the Contributions of Budget Deficits**

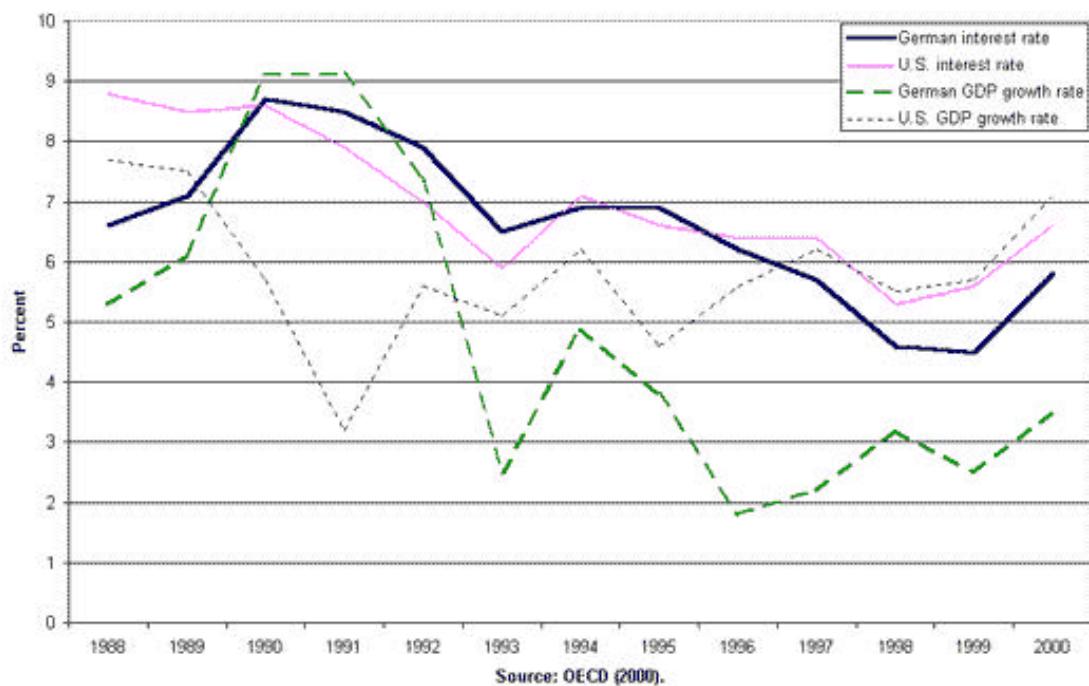


**Fig. 6.5 Synchronized Growth Spreads: Germany and the U.S.**



Source: OECD (2000).

**Fig. 6.6 Allied Bond Yields at Different Speeds of Economic Activity**



Source: OECD (2000).

1. Publications by the Bundesbank and the Sachverständigenrat ([SVR] German Council of Economic Experts) would seem to suggest that these authorities were surprised by western Germany's supply-side elasticity and benign price developments. See e.g. SVR Annual Report 1990-1, Art. 156; SVR Annual Report 1991-2, Art. 120; Deutsche Bundesbank, Annual Report 1990, p. 19.

2. It is a gross misjudgement to compare West German inflation of 1986 with All-German inflation of 1992 and conclude that a major inflation outburst occurred in between. For one thing, taking 1986-7 as the base fails to distinguish price level effects due to the oil price shock of 1986 from inflation proper. For another, as the Bundesbank (1991) made clear at an early point, adjustments in relative prices in eastern Germany in the early nineties should not be interpreted as inflation either. West German inflation peaked in 1992 at 4.0 percent, and even the minor rise above the previous 2.5 percent inflation trend was to a very large extent not market determined.

3. And as Germany's wise men correctly observed in their 1990-91 Annual Report (Art. 158): "high interest rates contributed significantly to the increase in unit costs this year."

4. As is evident from its publications and public statements the Bundesbank wielded its enormous powers and put increasing pressure on the government to prevent financing unification through borrowing right from the start (cf. Akerlof et. al. 1991, Owen Smith 1994). In the early years, moreover, the Bundesbank's forecasts of budget deficits were consistently (and conspicuously) on the high side (cf. Von Hagen 1994). Kloten (1997) offers some insights into the thinking behind the Bundesbank's position.

5. It has by now become conventional wisdom to justify the Bundesbank's highly contractionary policy stance of the early 1990s "largely as a reaction to the inflationary consequences of the way unification was financed" (OECD 1999, p. 26). It is therefore important to note that the rise in headline CPI inflation was caused by measures intended to prevent public borrowing rather than by deficit spending itself; as market-determined price trends at the time barely increased at all.

6. Giersch et al. (1992, p. 262) observed that: "In comparison to West Germany, with its well-established and advanced market economy, East Germany was rather small (26.5 per cent in terms of population, roughly 10 per cent in terms of GDP ...). Hence, regardless of the details of the policies adopted, German unification meant from the outset that the pains of political and economic transformation in the East were to become mere regional problems of a much larger unit whose overall stability would be only marginally affected by whatever difficulties the switch to a market economy in the eastern part would entail." If one agrees with this judgement one must be struck by the fact that Germany's stability turned out to be rather more than only marginally affected.

7. One estimate puts this factor in the order of magnitude of some DM 50 billion per annum (see Heilemann and Jochimsen 1993, p. 24, table 4; Heilemann and Reinicke 1995, p. 100, fn. 5). Additional fiscal savings arose as expenditures previously incurred due to the division of Germany fell away gradually after unification.

8. Germany's wise men put the figure at DM 38 billion for the year 1990 (see SVR1990-91, p. 142).

9. These were estimated to have added some 1.5 to 2 percent to GDP growth in both 1990 and 1991.

10. Initially, pressures were purely internal ones arising from the Bundesbank's belief that unification must not be financed by borrowing. The "convergence criteria" hammered out in the Maastricht negotiations of 1991 then apparently provided an additional external constraint. Yet, the Treaty reflected largely German demands on the requirements for "stability," and was heavily influenced by the "Bundesbank view."

11. In spring 1997, the Bundesbank judged the trend of Germany's debt ratio since unification as "unsustainable over the long term" (Bundesbank 1997, p. 23), thoroughly misjudging the true underlying causes of these developments though. In 1998-99, when international crises seemed to be cutting off the last economic lifeline Germany was clinging to all along, namely exports, Germany was even flirting with economic disaster.

12. Domar referred to the possibility that a government might actually succeed in paying down part of the debt: "They recognize no other method of achieving their goal but by reducing the absolute size of the debt; that the government must stop borrowing is of course taken for granted. They should beware, however, lest the policies they advocate exert such a depressing effect on the national income as to result in an actually heavier debt burden, even though they succeed in paying off a part of the debt" (Domar 1944, p. 815-6). In the more general case discussed here, the attempt to reduce the debt *ratio* actually pushes it up. In either

case, the problem and apparent paradox is that the tax burden rises rather than falls, despite (or because of?) desperate measures to prevent this.

13. This is noteworthy for the fact that US's fiscal conduct was in stark conflict with the "Growth and Stability Pact" [SGP] that forms part of the stability-oriented macroeconomic policy framework of the euro zone (cf. Arestis, McCauley and Sayers 1999, Eichengreen 1996, Eichengreen and Wyplosz 1998). According to SGP rules, the US would have been penalized for its irresponsible policies. The SGP was proposed in 1995 by the German Finance Minister Theo Waigel. Rumor has it though that the Pact was masterminded by the Bundesbank.

14. It is currently fashionable to believe that independent central bankers differ from democratically-elected politicians in some important ways, and this is held to justify that they should have long and very secure contracts (i.e. operate in a highly inflexible labor market segment). In view of the facts shown in fig. 4.1., it seems rather remarkable that, on January 26, 2000, Otmar Issing, the ECB's chief economist who previously held the same position at the Bundesbank between 1990 and 1998, praised the UK as a role model of fiscal prudence, stating that he would welcome Britain joining the euro-zone as this would "add to peer pressure for sound fiscal policy" (reported in the Financial Times of January 27, 2000). Of course, I have no problem with judging Britain's fiscal policies over the 1990s as "sound." The point is that it was largely due to pressures from Mr Issing's former employer that Germany conducted fiscal policies from 1992 onwards that were in stark contrast to those of the UK. Apparently, then, central bank politicians may suffer from the same kind of weaknesses generally attributed to their democratically-elected counterparts, such as lack of memory, or flimsy knowledge of the facts etc.

15. Vittas (1995, pp. 5) observes that the impact of the fiscal adjustment in 1992-93 coincided with "powerful offsetting effects of automatic stabilizers" and also refers to the risks that Germany's attempts to comply with the Maastricht fiscal convergence criteria might depress its production *potential* over the medium term. Of course depressing *actual* production over successive "short-runs" does have such longer-term consequences too.

16. The wise men's calculations are based on "financial statistics." These show a small deficit for the year 1989, thus starting from a lower level. But otherwise the overall picture is the same as the one based on national accounts. A key difference between these statistics is that credits and income from investments are considered expenditures in the financial statistics, but savings in the national accounts. Cf. Horn and Scheremet 1999.

17. It is sometimes argued that there are also so-called non-Keynesian effects involved in fiscal consolidation that might partly compensate or even overturn the negative Keynesian effects *in the short run*. These arguments refer to risk premia on public bonds and confidence effects in cases of very large fiscal imbalances. The experiences of Denmark (1983-6) and Ireland (1987-9) are usually seen as proof of this possibility (cf. Bertola and Drazen 1993, Giavazzi and Pagano 1990). Yet it is not clear *a priori* why these special considerations and small-country experiences should be of *any* relevance to Germany since 1992. Ex post it is very clear that the Keynesian effects dominated whatever non-Keynesian effects might have played any role in the example under discussion here.

18. Not surprisingly, having successfully depressed the economy, the sustainable level of interest rates then remained significantly below US rates for the rest of the decade - the story of the euro's plunge (cf. Bibow 2001).

19. A fact which never stopped Bundesbank President Hans Tietmeyer from outright rejecting James Tobin's (see FAZ 1996) accusal that the Bundesbank's one-sided preoccupation with inflation caused sluggish growth and unemployment. In an interview in 1999, Professor Tietmeyer went even further and asserted that the Bundesbank's stability-oriented policies were conducive to growth and employment in Germany (see Herz 1999); which would seem to imply that with less deflationary policies Germany's unemployment scandal over the 1990s would have been even more serious. The point is that in Germany Bundesbank proclamations are widely believed no matter how far out of touch with economic theory they may be. Their influence on public opinion can hardly be overestimated.

20. A monetary conditions index (MCI) combines two indicators of monetary stance, a short-term interest

rate and the effective (i.e. trade-weighted) exchange rate, the two factors being weighted according to their relative role in the transmission mechanism in their effects on aggregate demand and activity. The absolute value of the MCI does not represent a measure of monetary stance though. The MCI merely indicates whether stance has become more or less restrictive relative to some base. The base here is the 1<sup>st</sup> quarter of 1990. Other inputs are, first, the Frankfurt overnight interest rate deflated at the (western) German CPI and, second, the effective exchange rate vis à vis 18 industrial countries and based on the deflator for total expenditure, with a 3:1 weighting. This means that a one percentage point increase in real interest rates or a three percent appreciation of the real effective exchange rate (REER) are being treated as having equivalent effects on aggregate demand.

21. The output gap measure used here is due to the German Council of Economic Experts which has the advantage of concentrating on western Germany's production potential as derived from the rate of utilization of the economy's capital stock. The data for 1985-1998 are from the Annual Report 1998-99 (p. 285, table A1). For 1999 I used an own estimate as the wise men's measure for western Germany was discontinued in 1999.

22. The measure of core inflation and "tax-push inflation" of Fig. 5.4. is based on calculations due to Weeber (1993, 1994, 1997, 1998), providing the most comprehensive index of this kind available for western Germany between 1992-8. (Data for 1991 is based on the German wise men's calculations.) And this still leaves cost pressures arising from rising social security contributions out of the picture. According to the Bundesbank, indirect taxes added about 0.5 percentage points to headline CPI inflation in 1991, implying that core inflation remained roughly stable from the years before. Heilemann and Jochimsen (1993, p. 29) argue that in 1992 "administrative price hikes caused a 1 percent increase in inflation, which gave wage claims an additional push of 0.5 to 0.7 percent." Heilemann and Reinicke (1995, p. 12) observe that "the increase in government-administered prices and social security contributions to finance unification led - along with increased housing rents - to a rise in inflation from less than 2.5 percent prior to unification to an average of 3.5 percent between 1990-1993."

23. Heilemann and Reinicke (1995, p. 83) observed that "the deficit reduction currently projected in the government's medium-term financial plan is exceptionally swift and intense relative to Germany's own past experience as well as to international standards," warning of the likely macroeconomic repercussions.

24. By the end of 1996, the east German Länder Governments and Local authorities had incurred DM 141 billion, while their GDP (including east Berlin) stood at DM 413 billion (SVR 1998-9, p. 341).

25. The Bundesbank (1997, p. 22) puts the German Unity Fund's borrowing to finance general transfers to the east German Lander Government until the end of 1994 at DM 95 billion from which it deducts DM 11 billion for redemptions effected until 1997. The statistics of the German Finance Ministry show transfers made by the German Unity Fund from 1991 to its end in 1994 at DM 75 billion, a figure that includes all credit-financed transfers but not subsidies by the Federal and western Lander Governments. The difference of DM 20 billion over a period of four years seems small enough to be ignored here.

26. By 1996, Germany's GDP was DM 3524 billion (on the basis of the old ESA 1979 conventions), 12.6 per cent of which are equal to DM 444 billion. Most curiously, in attributing about 12.6 percentage points of Germany's debt ratio of 1996 to assumed debts, the Bundesbank seems to have treated only the debts incurred by the German Unity Fund of DM 95 billion, but *not* those incurred by the ERP Special Fund of DM 27 billion, like inherited debts. Adding the latter's borrowing as well would have left the margin too small in view of the 7.5 percentage points the Bundesbank decided to attribute to the interest burden; one may venture here.

27. Cf. Deutsche Bundesbank 1999). This surely reflects a peculiar form of money illusion widespread in Germany, or "the Bundesbank myth." As a thought experiment the reader may ask herself whether Alan Greenspan would have ever gained any prestige in the United States if, starting from 3 percent inflation, a prolonged deflationary crusade had first pushed up inflation before crunching it out of the economy completely, at a doubling unemployment rate and real GDP growth averaging less than 1.5 percent for the better part of a decade.