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**Working Paper**

## Three Ways to ... High Unemployment

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# **WIIW Working Papers**

No. 12  
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*Kazimierz Laski*

**Three Ways to . . .  
High Unemployment**

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*Kazimierz Laski*

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## **Abstract**

The author intends to prove that economic policy in Germany after 1979 was opposed to that recommended by Kalecki in his famous 'Three Ways to Full Employment' and was responsible for the surge in unemployment. Part I of the paper sketches the theoretical background of Kalecki's recommendations. Special attention is devoted to private investment, budget deficit and trade balance as factors determining (but not being determined by) private savings. A related topic is the change of the degree of capacity utilization and of labour force.

Part II is devoted to an empirical investigation of Germany in 1960-96. The author comes to the conclusion that two factors were mainly responsible for the slowdown of GDP growth after 1979: first, the weak expansion of private investment, caused – at least to some degree – by the restrictive monetary policy of the Bundesbank and, second, the increase in the private propensity to save, related to an engineered shift in the distribution of income from wages to profits. The increase of the trade surplus in the 1980s and then in the 1990s could not prevent the slowing down of GDP growth and the increase of unemployment provoked by these two factors. In the USA, in contrast, the stagnation of private investment in 1980-91 was counterbalanced by a decrease of the private propensity to save and by an increase of the budget deficit. Thus a stagnation of GDP could be avoided and unemployment did not increase very much.

**Keywords:** unemployment and its causes; theory of effective demand; private investment, Government budget and trade surplus versus private savings; private savings and GDP; Germany and USA 1960-96

**JEL classification:** B22, E12, E20, H62

## Three Ways to . . . High Unemployment<sup>1</sup>

### Introduction

As a matter of definition, 'private savings' SP (properly defined) equal 'offsets to private savings' OSP (Burchardt, 1994, p. 20) such as private investment (gross private capital formation), denoted IP, deficit spending (general Government expenditure G minus net current revenues, including net social security payments, T), denoted D and trade balance (exports of goods and services X minus corresponding imports M), denoted E. A major economic problem is the question what determines what: do 'offsets to savings' determine private savings or *vice versa*? This very question seemed to be definitely resolved at the time when *The Economics of Full Employment* was published and many years thereafter, giving priority to OSP and to private investment IP, by far the most important component of it. But since the oil crises and the surge of inflation in the 1970s, a new paradigm in economic theory has prevailed. This new paradigm has not been quite new. Mainstream economics has returned gradually to the old laissez-faire competition theory which the theory of effective demand had seemed to substitute for good. According to the new-old theory, there are savings SP which do determine offsetting expenditures  $IP + D + E$ . As far as unemployment is concerned, the new-old theory has returned to the view that it is mainly caused by real wages being too high and by lacking flexibility of the labour force. The policy conclusions derived from the new-old paradigm were contrary to the recommendations of the theory of effective demand given in, for instance, the famous paper of Michal Kalecki (1944), 'Three Ways to Full Employment'. Those very conclusions have been, in the opinion of the present author, mostly responsible for the high unemployment in Germany and the EU in the last quarter of the century and especially in the 1990s.

In Part I of the paper we sketch the theoretical background on which Kalecki's 'Three Ways to Full Employment' was based. The role of investment as the driving force of a capitalist economy is stressed. Special attention is devoted to those factors which determine the degree of utilization of capacity and of the labour force. This part of the paper has been written for those readers who are not closely familiar with Kalecki's theory.

Part II of the paper is devoted to an empirical investigation. The author tries to imagine how Kalecki would investigate the reasons for high unemployment and follows this imaginary

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<sup>1</sup> An earlier version of this paper was presented at the International Conference to commemorate the 100th Anniversary of the birth of Michal Kalecki in Warsaw, 27-28 September 1999 and in São Paulo, 4-5 October 1999. – This paper could not have been written without the help of Roman Römisch, who was the best research assistant I have ever worked with. It is my duty and pleasure to express in this way my gratitude to him. All data used in this paper have been taken from OECD National Accounts and Main Economic Indicators available in the WIFO Datenbase.

approach. Germany's record is divided into two periods: one lasting until 1979, with practically full employment, and one after 1979, with practically increasing unemployment. Because of the unification of Germany in 1990, most attention is devoted the period preceding that event, 1960-90. Whenever possible, we analyse the period 1991-96 as well. In order to make some comparisons with outside developments, we use data from the USA.

## I. Growth, utilization of capacity and unemployment

1. In developed economies – as opposed to the underdeveloped ones – the existing capital stock  $K$  offers enough jobs for the available labour force. If we denote the technical capital/output ratio by  $v$ , then potential GDP is  $Y^* = (K/v)$ .  $Y^*$  means aggregate output at full utilization of capacity, where full utilization implies also the necessary flexibility of output with respect to demand and its structure. We assume further that potential output  $Y^*$  implies full employment in the sense that at this output level there exists no other than frictional unemployment, being a small fraction of the total labour force.

Actual output  $Y < Y^*$  depends on aggregate demand and is smaller than potential output if aggregate demand is too low. In this case capacity is not fully utilized, and the lower the degree of capacity utilization, the higher the unemployment. Both the capacity and the degree of its utilization depend first of all on investment, therefore we now turn our attention to this topic.

2. Kalecki introduced the very important distinction between investment decision  $ID$  and investment realized  $I$ . As there exists a time lag between these two, we have  $I(t) = ID(t - 1)$ , where the time lag has been chosen as a time unit. The distinction between  $ID$  and  $I$  does not apply to an increase (or decrease) in inventories above (or below) the desired level due to unexpected difficulties in finding markets (or an unexpected expansion of markets) because this kind of investment does not last for long and therefore can be ignored. On the other hand, some investment decisions may be revoked but this would not occur very often. Kalecki assumed also that investment decisions are made in real terms (a building, a factory, a piece of equipment etc.).

Assume now a closed economy without a Government. In such an economy we have *ex definitione*  $S(t) = I(t)$  because we get saving and investment by deducing simply from GDP consumption. It can be shown that the thesis that saving of period  $t$ , denoted  $S(t)$ , determines investment decision in the same period, denoted  $ID(t)$ , and hence investment in period  $t + 1$ , denoted  $I(t + 1)$ , leads to a serious logical difficulty. Indeed, if we start with the definition

$$S(t) = I(t)$$



and then assume that  $ID(t) = S(t)$   
we get  $I(t + 1) = ID(t)$

and come to the strange conclusion that

$$I(t + 1) = I(t)$$

i.e. that investment is constant over time. Because investment over time is not constant, the assumption that saving of a given period determines investment decision of the same period (and consequently investment of the next period) should be dismissed. On the other hand, the assumption that investment of a given period determines saving of the same period does not lead to any logical difficulty. Investment creates its own saving but saving cannot materialize if it is not caused by investment.

This can be explained in the following way. Imagine an economy consisting exclusively of a vertically integrated consumer goods sector. If all incomes in this economy (equal to the value of produced consumer goods) are spent, all output can be sold. If part of the incomes is not spent, a corresponding surplus of consumer goods comes into existence which, however – according to our assumptions – cannot be sold because the consumer goods sector is the only one in the economy. Now, assume that a vertically integrated investment goods sector exists together with the consumer goods sector. If that sector produces some investment goods, private households related to this sector get incomes and spend part of them on consumer goods. These expenditures create the very market for the surplus of the consumer goods sector and make saving in this sector (and in the whole economy) at all possible. This is how investment creates 'its own' saving while saving is not able to cause 'its own' investment.

3. The thesis that saving of a given period cannot determine investment of the same period does not mean that saving does not matter when investment is analysed – it matters very much. This applies especially to that part of saving that is appropriated by firms. Savings of firms increase their own capital, hence they positively influence firms' investment decisions by providing finance. Indirectly they play the same role by facilitating access to the capital market and by allowing firms to expose themselves to the increasing risk always involved in new investment decisions. Firms can and do invest more than they have saved: when they decrease their liquidity and take credits from the banking sector, or less: when they decide to increase their liquidity and pay back their credits to the banking sector. As, however, investment increases over time, the business sector invests more than it saves while the private household sector saves more than it invests (in dwellings).

4. Investment  $I$  increases the capital stock by  $K$ , and potential output  $Y^*$ , given  $v$ , increases by  $Y^* = (1/v)I$ . This is not exact as gross investment  $I$  partly only replaces worn-out elements of the capital stock. For the sake of brevity we here disregard this factor

and assume, e.g., that capital can last forever. The capacity effect of investment  $Y^*$  is undisputed because all economic schools accept it. What is hotly disputed is the 'income effect' of investment, which is directly linked with the thesis that it is investment which determines saving and not the other way round. This thesis has far-reaching theoretical and practical consequences. Indeed, it is well known that investment decisions are volatile and unstable by their very nature. They refer to future events with respect to costs and returns and necessarily involve risk. They have also a tendency to cumulative movements accelerating both their growth or decline. Now, if saving is an increasing function of GDP, the cumulative movements of investment – and consequently of saving – would be passed to GDP, causing aggregate output to follow the path of investment disregarding and sometimes even opposing its capacity effect.

If saving is a proportional function of GDP,  $S = sY$ , where  $s$  denotes the average (and marginal) saving ratio, then for any  $I$  – at constant  $s$  – we have  $Y = (1/s)I$  and  $Y^* = (1/s) I$ . Thus, the higher (lower) the investment, the higher (lower) aggregate output. Assume, for instance, that investment is relatively high with respect to the capital stock, hence the capital stock increases but investment remains at this high level for a while. Under these conditions  $Y^*$  increases because of the capacity effect of  $I$ , but  $Y$  remains constant because at constant  $I$  the income effect  $\dot{I} = 0$  and the relation  $(Y/Y^*)$ , measuring the utilization level of capacity, decreases endangering even the existing level of investment. In Kalecki's words: 'Investments start to fall because they do not grow any more.'

5. Before we analyse in some detail the capacity utilization, it may be interesting to ask the following question: Given the fact that investment determines saving, how can the income effect of investment be brought under control? The answer should be: The saving ratio  $s$  should be completely flexible assuring that at every level of investment, aggregate output  $Y$  would be equal to the potential one  $Y^*$ . In particular, if investment  $I$  is relatively low (high), the saving ratio should also be low (high), leading always to  $Y^* = I/s$  for every  $I$ . To illustrate the functioning of this mechanism, we can assume the extreme classical saving function according to which workers do not save while the capitalists do not consume. Now if investment is very low, prices of consumer goods should fall given nominal wages, and the share of wages in GDP should increase to the detriment of the share of profits. Conversely, if investment is high, prices of consumer goods should increase, given nominal wages, and the share of profits in GDP should increase to the detriment of the share of wages. In a model of perfect competition, this mechanism may be thought to work in such a way that low investment means high production of consumer goods because full utilization of resources is a basic assumption of the model. In order to find a market, prices of consumer goods would decline and shift a part of income to workers as is needed. The result would be a low saving ratio adjusted to low investment. On the other hand, high investment would lead to high prices of consumer goods and shift income to profits and saving. This mechanism does not work, at least in the sense that actual output in a capitalist economy

is as a rule below its potential level. And one of the reasons for the permanent underutilization of capacity is the relative rigidity of the saving ratio combined with the volatility of investment.

The relative rigidity of the saving ratio  $s$  is due to two factors: first, the distribution of income between wages and profits does not change radically over time and the resulting shifts are rather small; second, the propensities to save out of these incomes are relatively stable, and if they change, the changes are rather slow. On the other hand, one should not overestimate the stability of the saving ratio either because it may and does change. The relevant point to stress here is that those changes, though small and slow in general, may go – and sometimes do go – in a direction quite opposite to that required in the circumstances. It happens, e.g., that the saving ratio increases while investment expansion diminishes. The combination of a high propensity to save and a low propensity to invest is a dangerous mixture from the point of view of the level of employment and capacity utilization. In any case, the idea that  $s$  is adjusting itself to whatever level of investment happens to occur so as to achieve always the potential level of aggregate output, is quite fantastic and contradicts the observable facts.

6. Given  $s$ , we can define  $S^* = sY^*$  as the level of saving corresponding to fully utilized capacity. Hence, if investment happens to be at a level  $I < S^*$ , the resulting GDP would be  $Y = I/s$  and  $Y < Y^*$ .

Given  $Y^* = K/v$  and  $Y = I/s$ , we get for the degree of capacity utilization  $u = Y/Y^*$

$$u = (I/s)/(K/v) = (I/K)/(s/v)$$

but  $v = K/Y^*$ , hence

$$u = (I/s)/(K/v) = I/sY^* \quad (1)$$

In steady-state growth  $u = 1$  (meaning that capacity is fully utilized) when investment  $I$  happens to be equal to full employment saving  $sY^*$ . In a capitalist economy we have as a rule  $u < 1$ ; this is the great weakness of the capitalist economy, because it cannot assure the full utilization of capacity which in normal circumstances it is able to create in abundance. This is also the major source of its strength, because it puts the producers under continuous pressure forcing them to compete for the consumer.

From (1) we get by logarithmic derivation

$$du/u = (dI/I) - (dY^*/Y^*) - (ds/s) \quad (2)$$

hence the degree of capacity utilization increases (decreases) when *ceteris paribus* the saving ratio decreases (increases).

It is worth stressing that the link between the growth rate of investment and the degree of capacity utilization strengthens the cumulative tendency inherent in a capitalist economy. Indeed, when investment starts to decline, so do saving and profits, which leads to a further decline of investment. Now this tendency would be enhanced by the decline of  $u$ , the degree of capacity utilization, because the related deceleration of capital growth would negatively influence profits and profits expectations. The same *mutatis mutandis* could be said with respect to an upward movement of investment.

7. The degree of capacity utilization is related to the employment situation if we assume, as we already did, that at  $u$  near unity there is no other than frictional unemployment – a situation which may be approximated as full employment. Hence, the lower the degree of capacity utilization, the higher the rate of unemployment, and better utilization of capacity becomes an important tool in fighting unemployment. In a closed economy without a Government, the only way to increase  $u$  is to stimulate investment with the intention to bring it as near as possible to  $S^*$ .

If we broaden the model so as to include the Government and the outside world we have

$$OSP = IP + D + E \quad (3)$$

where  $IP$ ,  $D$  and  $E$  denote, as was already said, private investment, budget deficit and trade balance, all three being now offsets to private saving  $OSP$ . By breaking the budget deficit in  $D = IG + CG - T = IG - SG$ , we can write (3) also in the form

$$OSP = IP + IG - SG + E = DI + E - SG \quad (3')$$

where  $IG$ ,  $CG$ ,  $SG$  and  $DI$  denote Government investment, collective consumption, Government saving (the difference between Government net revenue  $T$  and consumption expenditure  $CG$ ) and domestic investment (the sum of  $IP$  and  $IG$ ). Offsets to private saving  $OSP$  may now be confronted with  $SP^*$ , full employment saving, where  $SP^* = sp(Y^*)$  and where  $sp$  denotes the average (and marginal) private propensity to save out of GDP. More specifically, the utilization degree of capacity in the general model is

$$u = OSP/SP^* = (IP/SP^*) + (D + E)/SP^* \quad (4)$$

or, using (3') instead of (3),

$$u = (DI/SP^*) + (E - SG)/SP^*. \quad (4')$$

Formula (4) is a general one. With  $D = E = 0$  we have  $u = IP/SP^*$ , the formula we have used for the simplified model. If it happens that  $IP < SP^*$  and private investment does not respond in a satisfactory way to policy measures intending to stimulate it, there are other possibilities to increase  $u$  and reduce unemployment, namely by increasing deficit spending  $D > 0$  and (or) by increasing the trade balance  $E > 0$ . The goal of these measures is to bring  $OSP$  as near as possible towards  $SP^*$ . If this policy is successful, it will not only bring  $Y$  nearer to  $Y^*$  but at the same time create incentives for acceleration of

private investment growth because better utilization of capacity is a major factor determining investment decisions.

The last possibility to influence the degree of capacity utilization is lowering the propensity to save  $sp$ . Because this saving ratio depends on the distribution of income between wages and profits as well as between high and low incomes, a shift from profits to wages as well as from high to lower incomes should reduce  $sp$  and *ceteris paribus* increase the coefficient  $u$ . Indeed, with given  $Y^*$ , full employment private saving  $SP^*$  decreases when  $sp$  decreases, and with decreasing  $SP^*$  the coefficient  $u$  increases. We have thus four major venues for keeping the degree of capacity utilization relatively high and unemployment relatively low. These four ways are: (1) stimulating private investment; (2) increasing deficit spending; (3) supporting the trade balance; (4) reducing the private saving ratio.

8. It seems not accidental that in his famous paper Kalecki did not deal with the trade balance as a way to full employment. This is probably due to the fact that a trade surplus in one country is necessarily a trade deficit in the rest of the world. Limiting our interest in this place to the developed world only, more employment in one country via trade balance expansion would mean less employment in other countries. Therefore the 'beggar my neighbour' policy cannot be treated as a general way to full employment. Nevertheless, in any separate, especially small, country this policy can be successful and in many cases it was.

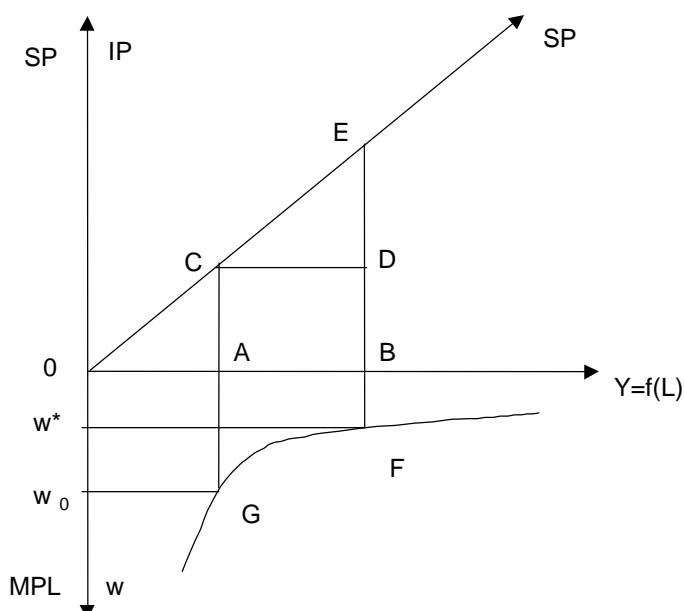
The closed model implied in Kalecki's paper suffers from one basic weakness in modern circumstances. Developed countries are strongly interdependent in their external relations, especially their import intensity is high. Hence any small or even medium-size country starting alone an expansionary policy would very soon be confronted with rising imports and a deteriorating current account because increasing aggregate demand would partly flow out abroad. If foreign currency reserves are used to finance the import surplus, speculation against the domestic currency would start and further weaken it, putting sooner rather than later an end to the expansionary policy in one country alone. In this context the existence and further development of the European Monetary Union may create new opportunities for expansionary policies. Indeed, euro countries together are independent of the outside world to a degree comparable to that of the USA and may one day use these opportunities.

9. All four methods mentioned earlier serve the purpose of better utilization of capacity, but only one the creation of capacity itself. Let us present this problem graphically: In Figure 1, starting from the origin, we draw a line  $SP$  with the slope  $sp$ , the average and marginal private saving ratio. This slope depends mainly on the distribution of income and the propensity to save from wages and profits.  $OB$  is full capacity utilization GDP, denoted  $Y^*$ , which is also the full employment output level. Investment  $IP$  needed to provoke an

aggregate demand equal to  $Y^*$  is the distance  $BE$ , which measures full employment saving  $SP^*$ . If, however, actual investment is  $BD$ , it provokes saving equal to  $AC$  and aggregate demand equal to  $Y = OA < Y^*$ . Hence utilization of capacity is low and equal to  $u = OA/OB$ . In order to get as close as possible to  $Y^*$ , the distance  $DE$  must be filled by stimulating  $IP$ , and if this does not work (or does not work in a satisfactory way) by engineering deficit spending  $D$  or by trying the 'beggar my neighbour' policy  $E > 0$ . The nearer  $OSP$ , offsets to private saving, representing the sum  $IP + D + E$ , to the distance  $BE$ , the nearer  $GDP$  to  $Y^*$ . There exists also the possibility to reduce the slope of the  $SP$  line by influencing  $sp$ . This would shorten the distance  $BE$  and facilitate in this way the policy of full employment.

Figure 1

### Employment according to aggregate demand and profit maximization



It may be emphasized that the distance  $DE$  creates conditions for a policy that helps all participants of the economic process. Indeed, by increasing  $IP$ ,  $D$  or  $E$  it is possible to increase incomes of workers and capitalists at the same time. This is the economic basis for co-operative capitalism in the above sense of the word. However, the redistribution of incomes implied by the turning of the  $SP$  ray is laden with social conflicts.

From the point of view of short-run full employment, there is no basic difference between the four methods presented above, but if we take future growth into account, the role of private investment is unique because it creates future jobs. Therefore stimulation of private investment should be the main instrument for full employment policy, and other methods should be taken into consideration only when this main way does not yield satisfactory results. This is true with but one reservation.

There exists a level of private investment which is necessary and sufficient to continuously recreate conditions for full employment, assuming that these conditions have existed already in the initial situation. In order to clarify this point, let us assume that the growth rate of labour productivity  $m$  is constant and determined by technical progress, the capital/output ratio over time remaining constant. This corresponds to the neutral type of technical progress as defined by Harrod and Kalecki. Let the growth rate of employment  $n$  be a constant, too. Thus the rate of growth of GDP is  $g = m + n$  and represents the trend beyond the cyclical fluctuations of output. If we further assume, for the sake of simplicity, that the labour force (given the participation rate) also grows at the rate  $n$ , then full employment would continue over time.

The growth of GDP recreating continuously full employment implies, however, a corresponding growth of capital and capacity. Let us denote private capital by  $KP$  and potential output by  $Y^* = KP/v$ . Let  $Y^*$  be full capacity utilization GDP in the initial situation assuming at the same time full employment. Under these conditions the volume of investment required to uphold the proper relation between capacity and national income at full employment must ensure a growth rate of private capital equal to  $g$ . With an assumed constant capital/output ratio, the capacity would then also grow at the rate  $g$ . Hence the degree of capacity utilization would remain constant because both GDP and capacity would grow at the same rate. We shall call this investment volume 'capacity-adjusted investment' and denote it in the initial situation by  $IP^*$  where  $IP^* = g(KP)$ .

There is no guarantee that  $IP^*$ , determined by the needs of future growth, is equal to  $SP^*$ , determined by the requirement of full employment. In terms of Figure 1 this means that  $IP^*$  can be smaller or larger than the distance  $BE$ . In developed capitalist countries we have most probably  $IP^* < SP^*$ , hence if  $IP^* = BD$ , point  $D$  would lie below point  $E$ .<sup>2</sup> In this situation the difference between investment as a tool to create capacity and as a tool to create the aggregate demand necessary and sufficient to achieve full employment, becomes obvious. The conclusion we should draw from this reasoning is that stimulation of private investment has priority over other methods of aggregate demand management below and up to  $IP^*$ -level. Indeed,  $IP > IP^*$  would be partly wasted because part of capacity created in this way could not be fully utilized under the conditions. If  $IP = IP^*$  and the gap between points  $D$  and  $E$  still exists, it should be filled by deficit spending and trade surplus or by reducing  $sp^*$ .

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<sup>2</sup> It is quite possible that in developing countries we have  $IP^* > SP^*$ , hence the existing saving ratio  $sp$  should be raised. But even in these countries actual  $IP$  would be smaller than  $SP^*$  because less than full utilization of capacity is an essential feature of a market economy. This means that even developing countries suffering from capacity insufficient to offer jobs for the whole labour force may and would suffer at the same time from not fully utilized capacity if aggregate demand is not satisfactory. Also the policy of increasing the saving ratio must be followed very carefully if aggregate demand is not to suffer from increasing propensity to save without a parallel increase of the propensity to invest.

10. Before we move to the empirical part of the study, we would like to remind the reader how mainstream economics deals with the problem of unemployment. In the lower part of Figure 1, we have drawn on the abscissa the marginal product of labour (MPL) corresponding to each level of employment related to Y. According to the concept of the production function  $Y = f(L)$  where, given the capital, labour L is the only variable factor of production, we have  $f' > 0$  and  $f'' < 0$ . Hence the marginal product of labour,  $MPL = dY/dL$ , is positive but declining with increasing L and Y. If now the firms make decisions about the quantity produced according to the strict rule of profit maximization under perfect competition, they would expand output up to the point at which their marginal costs MC would equal the price given by the market P

$$MC = P.$$

But marginal costs MC represent nothing but the product  $wn(dL/dY)$ , where  $wn$  and  $dL/dY$  denote the nominal wage rate and the marginal increase of labour L necessary to increase output Y by one unit, respectively; hence we have

$$wn(dL/dY) = P$$

$$wn/P = dY/dL \text{ and}$$

$$w = MPL$$

where  $w$  denotes the real wage rate  $wn/P$ . Hence aggregate output, given the production function, is determined by the level of the real wage. In order to have output at the full employment level OB, the real wage  $w^* = BF$  is required. If the real wage is higher than  $w^*$ , unemployment is unavoidable. With the real wage  $w_0 = AG$ , aggregate output would be  $Y_0 = OA$ . According to mainstream economics this is the real cause of unemployment, while the propensities to save and to invest have nothing to do with the problem. In order to fight unemployment, the real wage  $w$  must be reduced to the level of BF. At this real wage rate, potential output would be reached and distributed between consumption and saving according to the time preference of the private households with respect to present and future consumption.

Sometimes elements of effective demand are being intertwined with the profit maximization rule. Keynes himself did not reject the profit maximization rule, but he assumed that effective demand determines the level of aggregate output and employment and that, only after this level of employment has been determined, real wages are being adjusted to the marginal product of labour. In the modern presentation of Keynesian economics, this sequence of events is as a rule reversed. Firms are assumed to produce according to the strict profit maximization rule but the size of the market depends on aggregate demand. This is done in most cases by confronting an aggregate demand (AD) curve with an aggregate supply (AS) curve in a price (P) - output (Y) diagram. Further it is assumed that the AD curve is declining while the AS curve (given the money wage level  $wn$ ) is



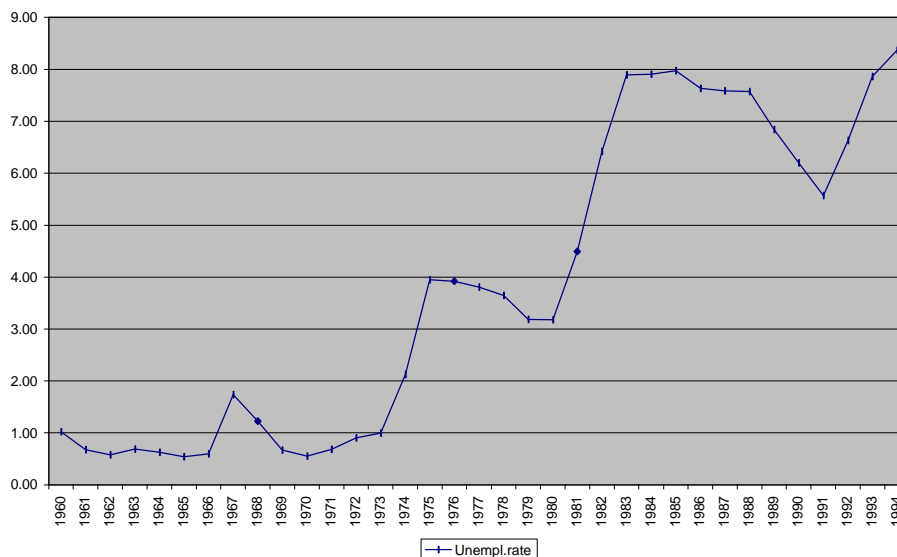
increasing. This construction is inconsistent because outside the equilibrium point, where both curves intersect, it assumes that employment according to AD and according to AS is different. Sometimes another construction is offered, according to which the AD curve is derived directly from the AS curve and is rather an increasing curve. But even in this case, although the previously stressed inconsistency does not arise, still the role of aggregate demand is a secondary one while the driving force of the dynamic process is the profit maximization rule. Hence it is the level of the real wage (or of the price level given the nominal wage rate) and not of aggregate demand which directly determines the level of employment. This contradicts – as was already stressed – the position of Keynes on the relation between employment, aggregate demand and real wage. Kalecki in his theory does not assume profit maximization by firms at all. Prices, according to Kalecki, are determined by unit prime costs plus a mark-up, and the real wage rate in the short run is mostly given, which means that the price level changes more or less *pari passu* with unit prime costs.<sup>3</sup>

## II. Unemployment in Germany and aggregate demand

1. There are two distinct periods in the post-WWII economic development in Germany and in OECD-Europe: the first one until the oil crises and the second one thereafter. The first period is characterized by low, the second by high unemployment. In Germany, where the employment record is better than in most other European countries, unemployment

Figure 2

**Unemployment rate in Germany in 1960-96**



<sup>3</sup> For a detailed treatment of this topic see Bhaduri, Laski and Riese (1999).

reached the 3-4 per cent level in the second half of the 1970s. Prior to these years unemployment was always below, thereafter always above this mark.

We have taken the year 1979 as the borderline between the two periods. The second period has to be subdivided again, because of the German unification, into the 1980-90 segment covering only western Germany and the 1991-96 segment covering unified Germany. Using this division, we get an average unemployment rate of 1.61 per cent for 1960-79 and of 7.0 per cent for 1980-96.

2. GDP is by definition the product of employment  $L$  and labour productivity  $y$  ( $GDP = Ly$ ). By taking the logarithmic derivatives after time, we get a rate of growth of GDG [ $g(GDP)$ ] as the sum of the growth rates of  $L$  and  $y$  [ $g(L)$  and  $g(y)$ ], respectively. The rate of growth of employment is the difference between  $g(GDP)$  and  $g(y)$ . In Table 1 we present data for Germany for 1961-96. Over the whole period employment grew more slowly than the labour force.<sup>4</sup>

Table 1

**GDP (in constant prices 1990) and labour in Germany 1961-96**

	1961-79 per cent	1980-90 per cent	1992-96 per cent	1980-96 per cent	Difference (4)-(1) in percentage points	1961-96
	(1)	(2)	(3)	(4)		
<b>g(GDP)</b>	3.71	2.13	1.40	1.85	-1.86	2.86
<b>g(y)</b>	3.63	1.52	2.18	1.63	-2.0	2.71
<b>g(L)</b>	0.08	0.61	-0.76	0.22	0.14	0.14
<b>g(LF)</b>	0.20	0.90	0.01	0.63	0.43	0.39

The reference point of our analysis is the first period, 1960-79, characterized by practically full employment and even large immigration of foreign workers from other countries. In the second period, 1980-96, demand for labour measured by  $g(L)$  increased by  $0.22 - 0.08 = 0.14$  percentage points while labour supply measured by  $g(LF)$  increased by 0.43 percentage points. This difference resulted in a surge in the average unemployment rate from 1.61 per cent in the first period to 7.0 per cent in the second one.

The second period is, however, not homogeneous. In the first segment of this period, the demand for labour increased by 0.53 percentage points and the supply of labour by 0.70 percentage points compared with 1960-79, while in the second segment by -0.84 percentage points and by -0.19 percentage points, respectively. In other words, in the

<sup>4</sup> We have calculated the growth rate of the labour force  $g(LF)$  as the sum of the growth rates of employment and unemployment

second segment the supply of labour remained practically constant and employment decreased by about 0.8 per cent per year. The resulting average unemployment rates were 6.7 per cent and 7.5 per cent in both segments, respectively.

The demand for labour measured by  $g(L)$  depends both on the rate of growth of GDP and on the rate of growth of labour productivity  $g(y)$ . If we divide  $g(L)$  by  $g(GDP)$ , we get a number which we can call the employment intensity of GDP growth; it measures the per cent by which employment increases when GDP increases by 1 per cent. The relation  $g(L)/g(GDP)$  amounted to  $0.08/3.71 = 0.022$  and  $0.22/1.85 = 0.119$  in 1961-79 and in 1980-96, respectively. This means that the employment intensity of GDP growth in Germany in the second period increased as compared to the first one. If the growth rate of GDP in 1980-96 had been the same as in 1961-79 (i.e. 3.71 per cent), then employment would have increased with the actual employment intensity of growth (0.119) by 0.44 per cent instead of 0.22 per cent. On the other hand, with the actual growth rate of GDP of 1.85 per cent in 1980-96 and with the former employment intensity of growth (0.022), employment would have increased by 0.04 per cent instead of 0.22 per cent. Of course we do not know whether the employment intensity of GDP growth would have remained the same if the growth rate of GDP had changed.

We have analysed this problem because some German economists argue that unemployment increased because labour productivity was rising too strongly in relation to GDP growth, substituting capital for labour. Schulmeister (1998, pp. 1-4) criticizes this approach. He finds that capital intensity (capital-labour ratio) and labour productivity have grown in Germany in 1960-95 approximately at the same rate, leaving as a consequence the capital coefficient (capital-output ratio) approximately constant. He comes to the conclusion that the continuous increase in the capital-labour ratio, interpreted as a shift towards more capital-intensive production methods, seems to be an irreversible consequence of technical progress and is quite independent of shifts in the factor price ratio. 'Not even the explosive increase in the cost of capital relative to labour towards the end of the 1970s' – Schulmeister says – 'effected a slowdown in the growth of capital intensity' (p. 4). He as well as Flassbeck (1998) come to the conclusion that the main cause of high unemployment in Germany was not high labour productivity, but the slowing down of GDP growth, the topic we are going to investigate now.

3. Before we move to this question, let us take a look at the labour situation in the USA. The unemployment situation between 1961-79 and 1980-96 did not change substantially, although the average unemployment rate slightly increased from 5.5 per cent to 6.8 per cent. Here also GDP growth decelerated from 3.5 per cent to 2.3 per cent. As far as the employment intensity of GDP growth is concerned, it changed from  $2.2/3.5 = 0.63$  in the first period to  $1.4/2.3 = 0.61$  in the second one. Thus, as opposed to the German case, the employment intensity of GDP growth even slightly decreased while in Germany it

increased. Of course, labour productivity has always increased much more in Germany than in the USA, but it has not prevented Germany from keeping unemployment for dozens of years at a level much lower than in the USA, and it is not clear why it should now be made responsible for the rise of unemployment, which has completely different causes.

Table 2

**GDP (in constant prices 1990) and labour in the USA, 1961-96**

	1961-79	1980-96	Difference (2)-(1)	1961-96
	(1)	(2)	(3)	(4)
<b>g(GDP)</b>	3.5	2.3	-1.2	3.0
<b>g(y)</b>	1.3	0.9	-0.4	1.1
<b>g(L)</b>	2.2	1.4	-0.8	1.8
<b>g(LF)</b>	2.2	1.4	-0.8	1.8

4. Growth of GDP is caused by multiple factors, many of which are independent of the economic policies pursued. In particular, there are no spontaneous forces that in a market economy would assure – disregarding even cyclical fluctuations – an adjustment of GDP growth, and the derived demand for labour, to labour supply in such a way that the resulting unemployment remains constant. Given these conditions, the kind of policies pursued may, however, strengthen or weaken a spontaneous economic process. We shall try to show that these policies were in many cases responsible for the slowing down of growth and the surge in unemployment in Germany. In many instances they were in contrast to those advocated by Kalecki both in the sense of not doing what was required as well as of doing what should have been avoided.

We start by presenting the growth data for Germany in 1960-96 (see Table 3). In this table the first two columns present the shares in GDP of OSP (as well as elements of OSP) and of C (as well as elements of C). In order to get the whole of GDP, the share of SG, Government sector saving, is also taken account of. The third column gives the changes in the ratios in percentage points. Column (4) presents growth rates of different elements of GDP while the last column measures the influence of the growth of a separate element upon the growth rate of GDP. This can be illustrated by the following example: IP, private investment, increased 1960-79 by an average of 2.69 per cent. If all other parts of GDP were to remain at the initial level, then the resulting growth rate of GDP would amount to an average of 0.6 per cent. When looking at Table 3, we should keep in mind that the growth of GDP depends both on the growth of OTS and sp. From the definition of the private saving ratio  $sp = OSP/GDP$ , by taking the logarithmic derivatives after time, we get

$$g(GDP) = g(OSP) - g(sp) \tag{5}$$

where  $g(i)$  denotes the growth rate of  $i$ ,  $i = \text{GDP, OSP, sp}$ . Hence the growth rate of GDP is equal to the growth rate of offsets to private saving OSP – minus the growth rate of the private saving ratio sp. In Table 3 the data for sp are identical with those for OSP and can be found in the first three columns of the OSP row. The data for  $g(\text{sp})$  are presented in a special 'sp' row. We have calculated data for sp at the beginning and the end of the period as a three-year average in most cases, in order to prevent random numbers in the border year.

The period 1960-79 is our point of reference (see Table 3, Part A). The average growth rate of GDP in this period was 3.7 per cent. It was supported mostly by a 3.4 per cent growth rate of OSP and a very small decline of the private saving ratio sp by almost 0.2 per cent. Although sp declined over the whole period 1961-79 by only 0.6 percentage points, the internal structure of it changed quite remarkably. In particular, the share of IP declined and that of the budget surplus declined by approximately the same amount of percentage points. By far the greatest part of GDP is consumption C. Its share in GDP increased by 5.7 percentage points and correspondingly its rate of growth, 4.1 per cent, was clearly ahead of those for OSP and GDP. This was possible at a more or less constant sp because the share of Government saving SG in GDP declined by approximately the same amount of percentage points by which the share of consumption increased. Government saving is the difference between Government revenue net of transfers T and Government expenditure for collective consumption CG. Hence, a decrease of Government saving means either a decrease of T (leading in turn to an increase of private consumption CP) or an increase of CG. By looking at the data in Table 3, we find that the reduction of Government saving went hand in hand with the expansion of collective consumption. The share of the latter in GDP increased from about 14 per cent in 1960 to almost 20 per cent in 1979, i.e. by about 6 percentage points. This strong increase of collective consumption has been a characteristic feature of the 'social market economy' (*soziale Marktwirtschaft*) in Germany. On the other hand, the share of private consumption CP in GDP remained more or less stable (about 57 per cent), meaning that CP and OSP moved *pari passu* as expected by the quite stable private saving ratio. Taking this phenomenon into account, we can say that the average private consumption multiplier in 1960-79 – corresponding to the relation between CP and OTS ( $0.57/0.21$ ) – was almost constant at the level of about 2.7.

The development in 1980-90 (see Table 3, Part B) differed from that in the preceding period at least in three respects. First, growth of OSP accelerated from 3.4 to an average 4.2 per cent. Second, the most variable element in OSP was the export surplus, which increased its share by 4.8 percentage points, while other shares remained more or less constant. Third, and most importantly, the private propensity to save sp, which was relatively stable in the preceding period, increased from 21.0 per cent in 1979 to 25.1 per cent in 1990, that is by 4.1 percentage points. The mixture of acceleration of OSP growth

Table 3

**GDP: Growth and structure, Germany 1960-96, in constant prices****Part A: Western Germany 1960-79**

	1961 <sup>1)3)</sup>	1979 <sup>2)3)</sup>	(2)-(1) in percentage points	growth rates <sup>4)</sup> p.a. in per cent	(4)x(1)/100 <sup>2</sup>
	(1)	(2)	(3)	(4)	(5)
IP	23.89	19.36	-4.53	2.69	0.6
D	-4.25	0.74	4.99	.	.
E	2.01	0.91	-1.10	-3.28	-0.06
<b>OSP</b>	<b>21.65</b>	<b>21.01</b>	<b>-0.64</b>	<b>3.44</b>	<b>0.7</b>
<b>sp</b>				<b>-0.18</b>	
SG	7.64	2.52	-5.12	-2.68	-0.21
<b>C</b>	<b>70.70</b>	<b>76.45</b>	<b>5.75</b>	<b>4.15</b>	<b>2.9</b>
CG	13.94	19.89	5.95	5.85	0.82
CP	56.77	56.56	-0.21	3.66	2.08
<b>GDP</b>	<b>100</b>	<b>100</b>		<b>3.71</b>	

Notes: 1) Average 1960-62. - 2) Average 1978-80. - 3) In per cent of GDP. - 4) 1961-79.

**Part B: Western Germany 1979-90**

	1979 <sup>1)3)</sup>	1990 <sup>2)3)</sup>	(2)-(1) in percentage points	growth rates <sup>4)</sup> p.a. in per cent	(4)x(1)/100 <sup>2</sup>
	(1)	(2)	(3)	(4)	(5)
IP	19.36	19.18	-0.18	2.23	0.43
D	0.74	0.27	-0.47	-0.05	
E	0.91	5.67	4.76	24.38	0.20
<b>OSP</b>	<b>21.01</b>	<b>25.12</b>	<b>4.11</b>	<b>4.25</b>	<b>0.89</b>
<b>sp</b>				<b>1.64</b>	
SG	2.52	1.98	-0.54	-4.9	-0.12
<b>C</b>	<b>76.45</b>	<b>72.91</b>	<b>-3.54</b>	<b>1.95</b>	<b>1.49</b>
CG	19.89	18.26	-1.63	1.44	0.29
CP	56.56	54.66	-1.90	2.12	1.20
<b>GDP</b>	<b>100</b>	<b>100</b>		<b>2.37</b>	

Notes: 1) Average 1978-80. - 2) Average 1989-91. - 3) In per cent of GDP. - 4) 1980-90.

**Part C: Unified Germany 1991-96**

	1991 <sup>1)</sup>	1996 <sup>1)</sup>	(2)-(1) in percentage points	growth rates <sup>2)</sup> p.a. in per cent	(4)x(1)/100 <sup>2</sup>
	(1)	(2)	(3)	(4)	(5)
IP	20.88	19.14	-1.74	-0.67	-0.15
D	1.29	2.72	1.43	17.45	0.22
E	-0.08	1.22	1.30	.	.
<b>OSP</b>	<b>22.09</b>	<b>23.08</b>	<b>1.01</b>	<b>1.98</b>	<b>0.44</b>
<b>sp</b>				<b>0.88</b>	
SG	1.26	-0.52	-1.78	.	.
<b>C</b>	<b>76.64</b>	<b>77.60</b>	<b>0.96</b>	<b>1.49</b>	<b>1.14</b>
CG	19.51	19.84	0.33	1.58	0.31
CP	57.13	57.76	0.63	1.46	0.83
<b>GDP</b>	<b>100</b>	<b>100</b>		<b>1.24</b>	

Note: 1) In per cent of GDP. - 2) 1992-96.

For details see Annex A and B.

and of the rise of  $sp$  resulted in a growth deceleration of GDP from 3.7 to 2.4 per cent in 1979-90. Indeed a rise of  $sp$  means tautologically a fall of the private propensity to consume. Consumption, mainly private consumption, increased by an average 1.9 per cent compared with 4.1 per cent in the preceding period. The role of this factor can be seen from the last columns of Parts A and B of Table 3. The consumption growth alone was responsible for 2.9 per cent and 1.5 per cent of GDP growth in 1961-79 and 1980-90, respectively. The resulting difference of about 1.6 percentage points between the growth rates of consumption corresponds approximately to the difference in percentage points between the growth rates of GDP over the same time periods.

Between 1991 and 1996 (see Table 3, Part C, covering unified Germany) the  $sp$  ratio continued to increase, if only slightly, by 0.7 per cent per year. Its share in GDP increased by 1.0 percentage points. Over the same period, yearly  $g(OSP)$  diminished from 4.2 per cent in 1980-91 to only 2.0 per cent after 1991. The combined result of these two factors was a further slowdown of GDP growth to a yearly average of 1.2 per cent. Even this meagre result was not due to private investment (which even decreased by an average 0.7 per cent) but to the expansion of the export surplus and of the deficit of the public sector. The share of Government saving in GDP continued to decrease (by 1.8 percentage points) and at the end of the period  $SG$  became negative. Private consumption growth with an average 1.5 per cent was lower than in the preceding period.

Taking 1960-96 as a whole, we get the following general picture. The growth rate of GDP – averaging 2.9 per cent – declined continuously, from 3.7 per cent in 1961-79, to 2.4 per cent in 1980-90, to 1.2 per cent in 1992-96. The same pattern prevailed in the case of  $IP$ ; its growth rate – averaging 2.1 per cent – declined continuously, from 2.7 per cent in the first period to 2.2 per cent in the second period, and with -0.7 per cent became even negative in the last period. In the first period the GDP growth was caused mainly by the growth of  $OSP$  (which in turn was based mainly on  $IP$  growth and the budget surplus decline), slightly supported by a decrease of  $sp$ . In the period 1980-96 the influence of  $OSP$  growth upon GDP growth was strongly weakened by an increase of  $sp$ . This pattern was especially strong in the first segment (1980-90) but continued, though with a lower intensity, in the second one (1992-96) as well. In addition, in both segments the share of private investment in GDP and in  $OSP$  diminished (especially in 1991-96) while that of the export surplus and of deficit spending (1991-96) increased.

5. It is worth confronting the development in Germany with that in the USA to find out whether there existed some general trends in the world economy that may have influenced also Germany's record. Table 4 is constructed in a similar way as the one for Germany. We are going to stress some phenomena in the USA that may be useful for later comparisons with Germany. Growth in the USA in 1961-96 was rather steady: GDP,  $OSP$ ,

Table 4

**GDP: Growth and structure, USA 1960-96, in constant prices****Part A: 1960-79**

	1961 <sup>1)3)</sup>	1979 <sup>2)3)</sup>	(2)-(1) in percentage points	growth rates <sup>4)</sup> p.a. in per cent	(4)x(1)/100 <sup>2</sup>
	(1)	(2)	(3)	(4)	(5)
IP	15.95	19.49	3.54	4.76	0.77
D	0.7	1.05	0.35	2.3	0.016
E	0.77	-0.96	-1.73	.	
<b>OSP</b>	<b>17.41</b>	<b>19.58</b>	<b>2.17</b>	<b>4.35</b>	<b>0.77</b>
<b>sp</b>				<b>0.65</b>	
SG	1.79	0.77	-1.02	0.26	
<b>C</b>	<b>80.79</b>	<b>79.65</b>	<b>-1.14</b>	<b>3.43</b>	<b>2.77</b>
CG	17.15	16.74	-0.41	3.50	0.60
CP	63.64	62.92	-0.72	3.41	2.17
<b>GDP</b>	<b>100</b>	<b>100</b>		<b>3.53</b>	

Notes: 1) Three-year average 1960-62. - 2) Three-year average 1978-80. - 3) In per cent of GDP. - 4) 1961-79.

**Part B: 1979-96**

	1979 <sup>1)2)</sup>	1996 <sup>2)</sup>	(2)-(1) in percentage points	growth rates <sup>3)</sup> p.a. in per cent	(4)x(1)/100 <sup>2</sup>
	(1)	(2)	(3)	(4)	(5)
IP	19.49	15.78	-3.71	0.85	-0.16
D	1.05	2.24	1.09	13.40	0.14
E	-0.96	-1.48		.	
<b>OSP</b>	<b>19.58</b>	<b>16.53</b>	<b>-3.05</b>	<b>1.32</b>	<b>0.26</b>
<b>sp</b>				<b>-0.79</b>	
SG	0.77	-0.50	-1.27		
<b>C</b>	<b>79.65</b>	<b>83.97</b>	<b>4.32</b>	<b>2.68</b>	<b>2.13</b>
CG	16.74	15.74	-1.00	2.04	0.34
CP	62.92	68.24	5.32	2.84	1.79
<b>GDP</b>	<b>100</b>	<b>100</b>		<b>2.32</b>	

Notes: 1) Three-year average 1978-80. - 2) In per cent of GDP. - 3) 1980-96.

For details see Annex A and B.

IP and C increased at a similar rate: 3.0, 2.9, 2.9 and 3.1 per cent, respectively. However, in the first period, 1961-79, GDP growth was faster than in the second one, 1980-96. In addition, growth was not steady within both periods: in the first period OSP and IP increased faster than GDP (by 4.3 and 4.8 per cent, respectively, against 3.5 per cent) while in the second one the opposite was true (1.3 and 0.8 per cent, respectively, against 2.3 per cent). This was possible because the private saving ratio sp increased by 2.2 percentage points in the first period and declined by 3 percentage points in the second one. Hence over 1979-96 the sp ratio declined by 0.8 per cent annually. Under these



conditions consumption increased slower than GDP in the first period and faster than GDP in the second one.

From the mid-1970s the USA registered an import surplus mostly in the range of 1 to 3 per cent of GDP. On the other hand, in 1960-96, the General Government sector in the USA recorded, with the exception of just two years, rather large deficits in the range of 2 to 5 per cent of GDP, especially in the 1980s.

6. We have now collected the most important facts to formulate an initial hypothesis concerning the causes of unemployment in Germany. Following Kalecki, we will discuss the problem of private investment, of budget deficit and of the distribution of income in this order. We start with private investment because it is, as was already said, by its very size the most important part of offsets to private saving – and also because it is the only factor that does not only influence capacity utilization but the capacity volume itself. Private investment expansion in western Germany was strong until the end of the 1970s. In the 1980s the situation changed. In 1980-87 private investment stagnated and only in 1988-91 – probably provoked by the approaching unification with Germany East – it increased by an average 8 per cent per year. The development in the 1990s was similar to that in the 1980s; the average annual IP rate of growth in 1980-96 was a meagre 1.4 per cent. A detailed investigation of the question why investment grew so slowly in Germany – and not only there – is not possible here. We can only advance some possible reasons. One of them was the highly restrictive monetary policy of the Bundesbank oriented almost exclusively towards fighting inflation with complete neglect of its consequences for the employment situation. 'In the past 15 years' – we read in *DIW-Wochenbericht* (1997, p. 489) – 'the German Bundesbank has, with the exception of few years, followed a policy that prevented a sufficient investment dynamics . . . in the 1950s and 1960s the short-term and the longer-term real interest rates in West Germany were significantly below the real growth rate (of GDP – my remark, K.L.). From the end of the 1970s onwards, the short-term interest rate was about as high as the growth rate, and since the mid-1970s the longer-term real interest rate has been significantly above the income growth. In other words: Exactly since the start of the period that marked the beginning of the significant rise of interest rates in relation to growth, there has been unemployment.' The same point is stressed by Flassbeck (Flassbeck et al., 1997, pp. 421-22), in which the spread between the short- and long-term rates of interest is being used as a measure of monetary policy restrictiveness.

The above-described highly restrictive monetary policy was simply contrary to that advocated by Kalecki under similar conditions and requiring private investment stimulation, first of all by 'cheap' money. Another possible reason of the IP slowdown is the financial position of the non-financial-enterprise (NFE) sector in comparison with the financial-enterprise (FE) sector and the private household (HH) sector. As can be seen from

Table 5, the share of saving of the non-financial-enterprise sector S(NFE) in total (national) private saving (N)SP diminished from about 57 per cent to about 53 per cent.<sup>5</sup> Characteristic is the increase of the share of saving of the financial-enterprise sector S(FE) by about 3 percentage points because this is a rentier sector par excellence with a low propensity to invest in comparison with the (NFE) sector, which is the main real investor. Also the saving of the HH sector S(HH) increased its share by about 4 percentage points. The propensity to use saving for investment is in the HH sector higher than in the FE sector (because of household investment in dwellings), but to a large degree these savings should be classified as rentier savings as well. The investment decisions, as already stressed, depend very much on capital owned by investing firms, hence the shift of savings from those who make investment decisions towards those who save but do not invest could not but weaken the investment drive both by limiting the capital owned by the investors and by limiting their access to the capital market.

Table 5

**Components of (national) private saving (N)SP  
Germany 1960-96 (in per cent)**

	(N)SP	S(NFE)	S(FE)	S(HH)	S(FE)+S(HH)
1960-79 (average)	100	57.10	5.40	34.75	42.84
1980-90 (average)	100	52.63	8.68	38.69	47.37
1991-96 (average)	100	52.85	8.65	38.50	47.15

For details see Annex F.

Steindl (1990, p. 208) argues that business aims at keeping its indebtedness within certain limits, hence the proportion of borrowing in financing investment in the NFE sector cannot grow continuously. However, this proportion is related to the relation between business and household saving. If we take into account also saving of the financial sector, we see from Table 5 that the relation  $[S(HH) + S(FE)]/S(NFE)$  increased from about 75 per cent in 1960-79 to about 90 per cent in 1991-96. If the related degree of indebtedness of business goes beyond the limit considered safe by firms, investment of the non-financial sector may suffer.

By concentrating our analysis on the rate of interest and the share of borrowing in financing investment, the impression may arise that the investment drive of firms is always present and limited by financial considerations only. This is of course not true. The 'animal spirit' behind real investment has weakened since the oil crisis and the interest in take-overs and financial manipulations has increased in Germany as everywhere. Schulmeister (1996,

<sup>5</sup> The difference between (national) private saving (N)SP and private saving SP is explained in Annex E.

p. 4) points out that the business sector in Germany limited the growth of real investment after 1980 to an even larger extent than would have been necessary to stabilize its debt in proportion to GDP. He sees the cause of this development in the higher profitability of financial investment and greater chances to make quick gains from short-term speculative transactions in financial markets, especially for futures and options. Last but not least, investment creates (or replaces) capacity, hence it depends on the utilization of capacity. According to equation (2), the degree of capacity utilization changes with the growth rates of capital and – given the capital output ratio  $v$  – of the saving ratio. The dynamics of capital in the long run can be approximated by the rate of growth of investment. Using this measure, capital grew in Germany by about 2.7 per cent in 1961-79 but only by 2.2 per cent in 1980-90. Over the same period of time the saving ratio increased. The slowdown of capital growth and the rise of the saving ratio after 1980 as compared to the preceding period means, in terms of equation (2), that the degree of capacity utilization must have declined. The resulting deceleration of investment growth could have started a cumulative process going in the same direction.

7. Kalecki required deficit spending whenever private investment did not fill to a satisfactory degree the deflationary gap between  $SP^*$  and actual  $SP$  as a main instrument for better utilization of capacity and higher employment. The data for Germany prove that the actual development has gone rather in the opposite direction. We have already mentioned that in 1980-87 private investment in Germany West practically stagnated. At about the same time the General Government sector turned from a slight deficit into a slight surplus in 1985-86. This means that the negative influence of low private investment was further strengthened by the results of the restrictive fiscal policy. If we take 1979-90 as a whole, we find that the  $IP/GDP$  and the  $D/GDP$  ratios amounted to 19.4 and 0.7 per cent at the beginning and to 19.2 and 0.3 per cent at the end of this segment, respectively. Thus the loss of 0.2 percentage points in the private investment ratio was still strengthened by a loss of 0.4 percentage points in the deficit ratio.

It is interesting to note that the development in the USA in this period differed substantially from that in Germany West. Under the guise of 'supply side' economics, the Reagan administration engineered a deficit of the General Government unique in peace times. Between 1979 and 1990, as a result of slightly declining private investment, its share in GDP decreased from 19.5 to 15.0 per cent, i.e. by 4.5 percentage points. At the same time, as a result of the exploding deficit, its ratio in GDP increased from 1.0 to 3.8 per cent, i.e. by 2.8 percentage points. Thus the loss of 4.5 percentage points in the private investment ratio was partly compensated by a 2.8 percentage points increase in the deficit ratio.

In the segment 1991-96, in unified Germany the situation changed in so far as the continuing private investment weakness was now counterbalanced by rising public deficits.

Indeed, their share in GDP rose from 1.3 per cent in 1991 to 2.7 per cent in 1996, i.e. by 1.4 percentage points. However, the share of private investment in GDP declined in the same period from 20.9 to 18.9 per cent, i.e. by 2 percentage points. This means that the combined result of these two factors was in the end deflationary and was partly responsible for the further slowdown of GDP growth in this period.

However, the rising budget deficits, provoked by unexpectedly high unification costs, were not treated as a useful addition to the anyway insufficient aggregate demand but rather as a direct threat to price stability. Therefore, efforts have been made (without great success) to cut these deficits, but the restrictive fiscal policy could not but further aggravate the unemployment situation. These remarks apply also to the period after 1996, not covered by our analysis, in which the Maastricht criteria have become the only goal of fiscal policy in Germany.

8. We have come to the last, perhaps most important factor in our analysis of the causes of high unemployment in Germany, as seen from the tool box of Kalecki. What we have in mind is the distribution of income between consumption and saving. In a situation in which offsets to private saving  $OSP$  do not reach the level necessary to achieve high employment at given  $sp$ , Kalecki requires a redistribution of income from wages to profits in order to reduce the private propensity to save. However, mainstream economics explains unemployment by excessive real wages and requires their reduction in these circumstances. According to the prevailing opinion, if only real wages were lower, employment could increase to the point where the decreasing real marginal product of labour would meet this lower real wage rate. Hence a restrictive nominal and real wage policy has been advised and for quite some time realized in Germany. The average real wage increased in 1961-79 by 3.9 per cent while labour productivity increased by 2.9 per cent. But in 1980-90 the average wage increased by 0.9 per cent while labour productivity increased by 1.3 per cent. Hence, the wage share (compensation of employee/GDP) increased until the early 1970s, remained more or less constant until the 1980s and declined thereafter.

The profit share (profit/GDP) developed in an opposite direction. It declined until the late 1970s and from that time on increased quite steeply. The fact that the private saving ratio moved at a similar pace as the profit ratio is not extraordinary as the propensity to save out of profit is much higher than out of wages. This conclusion is supported by Figure 3 as well as by Table 6.

The parallel movement of the profit and private saving share is not accidental. But the combination of increasing shares in GDP of private profits and savings on the one hand, and stagnating private investment on the other, is a dangerous mixture as far as the

employment situation in Germany is concerned. This is exactly the opposite of what Kalecki required in his 'third' way to full employment.

Figure 3

**Profit ratio and private saving ratio  
Germany, 1960-91 and 1991-96**

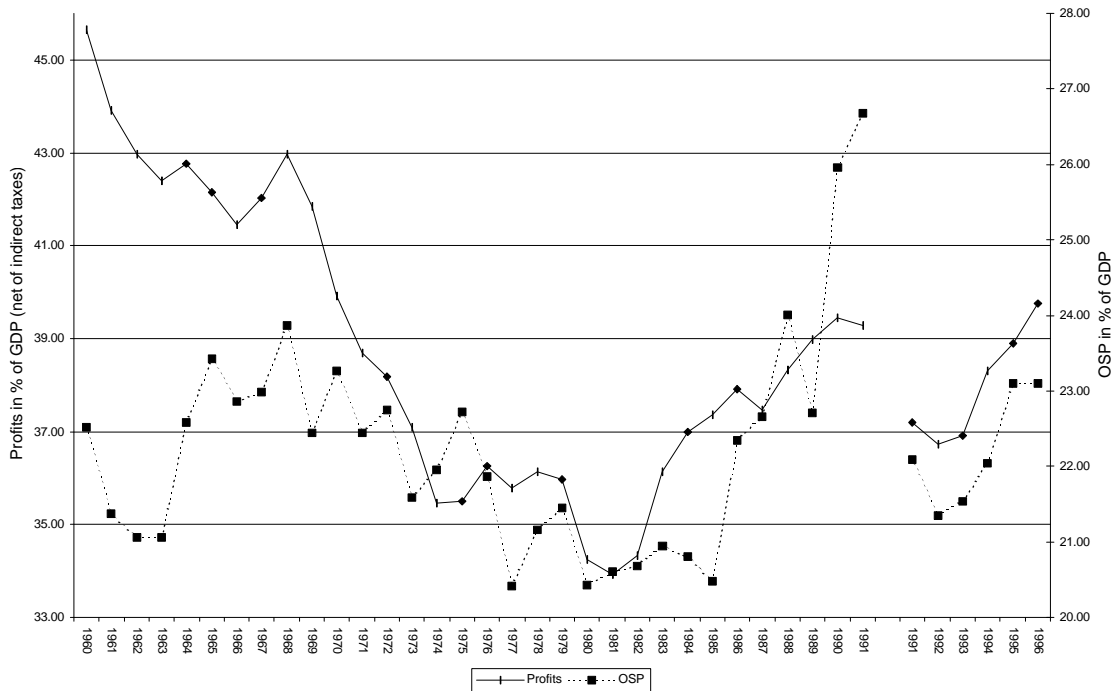


Table 6

**Distribution of GDP and private saving ratios  
Germany 1960-96 (per cent)**

	Wages/GDP <sup>1)</sup> ratio	Profits/GDP <sup>1)</sup> ratio	Private saving ratio
1961 <sup>2)</sup>	55.8	44.2	21.7
1979 <sup>3)</sup>	64.6	35.5	21.0
1990 <sup>4)</sup>	60.9	39.1	25.1
1991	62.8	37.2	22.1
1996	60.2	39.8	23.1

Notes: 1) GDP minus indirect taxes. - 2) Three-year average 1960-62. - 3) Three-year average 1978-80. 4) Three-year average 1989-91

9. Does the existence of foreign trade change the conclusions we arrived at? Not really, although it implies some special developments. In 1979-90, in contrast to other periods, GDP growth in Germany differed significantly from the growth of offsets to private saving,

OSP. We know already that neither the growth of private investment nor that of the budget deficit was responsible for the acceleration of OSP growth in 1980-91. The only item of OSP which increased quite spectacularly in this period was the export surplus E with an annual growth rate of 22.5 per cent. On the other hand, due to the increasing private saving ratio the main part of GDP, consumption C, increased only 1.9 per cent annually in the same period.

Are these two developments – the acceleration of the export surplus growth and the deceleration of consumption growth, caused by increasing  $s_p$  – independent of each other? The surge in the volume of the export surplus *per se* must not necessarily be related to an increase in the private saving ratio  $s_p$ . If, for instance, this surge had followed an increase in foreign demand for German goods due to an acceleration of economic growth in German trading partners, the saving ratio could have remained the same and the result would have been an acceleration of growth of E as well as of C in Germany. The export expansion under consideration had, however, other causes. Unit labour costs in Germany and prices in Germany decreased relatively to other countries although an appreciation of the DEM took place at the same time. This increased competitiveness made the export surplus expansion possible. Real wages remaining strongly behind labour productivity and causing a competitive advantage for German exports, could not but restrict at the same time the demand for consumer goods on the internal market.

Consumption increased 1980-91 by an average of only 1.9 per cent annually compared to 4.1 per cent 1961-79. It is strange to assume that this drop was caused by supply difficulties in production for home goods but not for export goods. It is, however, easy to understand that exactly the same factors that provoked the export expansion limited internal consumption. The slow expansion of the internal market together with the restrictive monetary policy may have also influenced the low growth rate of investment in the period under consideration. The beggar-my-neighbour policy is often criticized by the losses it causes in countries with increasing import surpluses. It turns out that this policy while harming the neighbours may bring losses also to the very country starting this policy. Kalecki stressed in his early writings that an export surplus achieved through lowering domestic wages and prices in relation to foreign wages and prices may at the same time limit growth of internal consumption (Kalecki [1939] 1991, pp. 36-38). This seems to have happened in Germany 1980-91 and also thereafter.

10. Before we stop, let us mention yet a different way of facing low investment activity. In the USA 1979-91 private investment decreased by an average 1.3 per cent while in 1960-79 it increased by an average 4.8 per cent. This dramatic slowing down of investment growth was to a certain degree compensated by an increase in the deficit of the public sector, but together offsets to private saving OSP increased in the period discussed by an average of 1.2 per cent only versus 4.3 per cent in 1960-79.

Nevertheless, GDP grew by an average of 2.0 per cent, i.e. by 0.8 percentage points faster than OSP. This was possible because consumption continued to increase in 1979-91 by an average of 2.7 per cent ahead of GDP growth. Of course, the private saving ratio could not remain constant in these circumstances. It was cut from 19.6 per cent in 1979 to 17.7 per cent in 1990, i.e. by 1.9 percentage points. This pattern prevailed to some degree also in 1991-96. The development in the USA provides thus an example of how to adjust the private saving ratio to a weak expansion of OSP, especially of private investment, although there is no trace whatsoever of a conscious policy behind this development. On the other hand, the better utilization of capacity in a dynamic context implies an increase of capacity itself in time. Indeed, private investment in the USA which decreased 1980-91 by 0.3 per cent p.a. increased 1992-96 already by 3.1 per cent p.a. As a consequence the share of private investment in GDP which contracted in the first segment (till 13.6 per cent of GDP 1991) started to increase anew in 1992-96.

In the USA context, the already mentioned decrease of the private propensity to save 1980-96 by 3.0 percentage points cannot be explained by a shift in distribution of GDP between wages and profits as was the case in Germany. In the USA it is rather the change in the propensity to save of the private household sector which stays behind this development. The net savings of the HH sector amounted to more than 7 per cent in 1961 and 1979 but dropped to 5.8 and 4.8 per cent in 1990 and 1996, respectively. Hence these ratios declined 1961-96 by 2.4 percentage points. This difference corresponds approximately to the cut in the private propensity to save over the same time period. Most probably the spectacular change in the saving attitude of the private household sector in the USA was provoked by large gains in this time in securities held by private households. If this is true, they may disappear in the future as soon as they have appeared in the past, and influence the private propensity to save in the opposite direction.

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Table 7

**Net saving ratios of the private household sector  
USA, 1990-96 (current prices; per cent)**

1961 <sup>1)</sup>	7.26
1979 <sup>2)</sup>	7.67
1990 <sup>3)</sup>	5.80
1996 <sup>4)</sup>	4.83

*Notes:* 1) Three-year average 1960-62. - 2) Three-year average 1978-80. - 3) Three-year average 1989-91. - 4) Three-year average 1994-96.

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Steindl (1990, p. 183) argues that in modern industrial economy the question of inequality of personal income is more relevant for the saving ratio of private households than the functional distribution of income between wages and profits. From this point of view the

increasing share of low wages in the total wage bill, recorded in USA, seems to be quite interesting.<sup>6</sup> If employment increases in lines of activities characterized by low value added and if this value added is distributed between workers and capitalists according to the existing pattern, the private saving ratio out of GDP would drop without any shift in the distribution of income between wages and profits. But the private household sector includes also private households of unemployed people. In order to make this hypothesis work the situation of the employed poor must have deteriorated in comparison with their previous situation as unemployed poor. The question whether this has happened indeed cannot be answered here.

## Conclusions

11. The 1997 victory of the Social Democrats in Germany and the strategy advocated by Mr. Lafontaine and his colleagues had aroused hopes that at long last the aggregate demand approach would be taken seriously and Kalecki's recommendations would late but in the end prevail. This hope has not materialized. We now see the government in Germany following with even greater zeal the old policy of curing unemployment by thrift and by disregarding the difference between the rehabilitation of an individual firm and the recovery of a national economy, the biggest in the EU. Probably the time is not yet ripe for a change. The situation must obviously become still worse before – perhaps – it starts to get better.

In a speech held on the occasion of his 65th birthday, Kalecki told us that, with few exceptions, he avoided teaching all his life and saw his role rather as an economic advisor. With one exception his advice was simply ignored and found its lasting use in papers which have remained and constitute until today a rich source of inspiration for those who wish to learn. In only one case – Kalecki said – his advice was not ignored but taken account of. This happened in Israel at the very beginning of its independence. Instead of simply ignoring Kalecki's advice, the Israeli Government did exactly the opposite. It is probably the fate of his remedies that we can repeat his sarcastic remark half a century later in the German context, and not only in that one.

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<sup>6</sup> I owe this suggestion to Amitava Krishna Dutt during a discussion on the present paper in Sao Paolo.



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## Annex A

### GDP in constant prices 1990 Germany, 1961-96 (growth indices)

Year	GDP	OSP	C	IP	E	Period	GDP	OSP	C	IP	E
<b>1960</b>											
<b>1961</b>	1.046	0.993	1.053	1.030	0.930						
<b>1962</b>	1.047	1.031	1.059	1.033	0.592						
<b>1963</b>	1.028	1.028	1.040	0.958	1.245						
<b>1964</b>	1.067	1.144	1.039	1.134	1.070						
<b>1965</b>	1.054	1.093	1.067	1.088	0.193						
<b>1966</b>	1.028	1.003	1.035	0.953	6.135						
<b>1967</b>	0.997	1.002	1.019	0.866	2.147						
<b>1968</b>	1.055	1.095	1.034	1.130	1.050						
<b>1969</b>	1.075	1.011	1.062	1.157	0.831						
<b>1970</b>	1.050	1.089	1.041	1.086	0.762						
<b>1971</b>	1.031	0.994	1.046	1.000	0.908						
<b>1972</b>	1.043	1.056	1.051	1.023	1.177						
<b>1973</b>	1.048	0.994	1.044	1.029	1.521						
<b>1974</b>	1.002	1.019	1.026	0.841	1.518						
<b>1975</b>	0.987	1.022	1.038	0.874	0.650						
<b>1976</b>	1.053	1.014	1.038	1.194	0.817						
<b>1977</b>	1.028	0.960	1.036	1.002	1.084						
<b>1978</b>	1.030	1.068	1.024	1.048	1.086						
<b>1979</b>	1.042	1.056	1.038	1.160	0.277	<b>1961-79</b>	1.0371	1.0344	1.0415	1.0269	0.9672
<b>1980</b>	1.010	0.962	1.025	1.001	-0.702						
<b>1981</b>	1.001	1.009	1.017	0.894	-1.727						
<b>1982</b>	0.991	0.995	0.990	0.925	2.964						
<b>1983</b>	1.018	1.031	1.010	1.096	0.851						
<b>1984</b>	1.028	1.021	1.022	1.034	1.265						
<b>1985</b>	1.020	1.004	1.017	0.982	1.447						
<b>1986</b>	1.023	1.117	1.001	1.015	1.516						
<b>1987</b>	1.015	1.029	1.020	1.006	0.982						
<b>1988</b>	1.037	1.099	1.025	1.082	1.081						
<b>1989</b>	1.036	0.980	1.022	1.083	1.069						
<b>1990</b>	1.057	1.208	1.043	1.090	1.145						
<b>1991</b>	1.051	1.080	1.044	1.084	1.034	<b>1980-91</b>	1.0237	1.0425	1.0195	1.0223	1.2248
<b>1991</b>											
<b>1992</b>	1.022	0.993	1.027	0.989	0.376						
<b>1993</b>	0.988	0.992	0.999	0.921	.						
<b>1994</b>	1.027	1.047	1.016	1.075	1.155						
<b>1995</b>	1.012	1.059	1.012	1.014	1.257						
<b>1996</b>	1.013	1.010	1.020	0.973	1.569	<b>1992-96</b>	1.0124	1.0198	1.0149	0.9933	.
						<b>1980-96</b>	1.0204	1.0358	1.0181	1.0137	.
						<b>1960-96</b>	1.0292	1.0351	1.0304	1.0207	.

## Annex B

### OSP/GDP and related ratios Germany, 1960-96

Year	OSP	IP	E	D GG (lg-Sg)	C	Periods	OSP	IP	E	DG(lg-Sg)
1960	22.52	24.24	2.52	-4.24	70.13					
1961	21.38	23.87	2.24	-4.74	70.58	1961 <sup>1)</sup>	21.65	23.89	2.01	-4.25
1962	21.06	23.56	1.27	-3.77	71.41					
1963	21.05	21.96	1.54	-2.44	72.23					
1964	22.58	23.35	1.54	-2.31	70.35					
1965	23.43	24.12	0.28	-0.97	71.27					
1966	22.86	22.35	1.69	-1.18	71.79					
1967	22.98	19.41	3.64	-0.06	73.37					
1968	23.86	20.80	3.62	-0.56	71.91					
1969	22.44	22.40	2.80	-2.76	71.03					
1970	23.26	23.15	2.03	-1.92	70.39					
1971	22.44	22.45	1.79	-1.80	71.46					
1972	22.74	22.03	2.02	-1.31	72.04					
1973	21.58	21.64	2.94	-2.99	71.81					
1974	21.95	18.17	4.45	-0.66	73.56					
1975	22.72	16.08	2.93	3.71	77.29					
1976	21.86	18.22	2.27	1.38	76.19					
1977	20.42	17.75	2.39	0.27	76.74					
1978	21.16	18.07	2.52	0.57	76.28					
1979	21.44	20.10	0.67	0.67	75.97	1979 <sup>2)</sup>	21.01	19.36	0.91	0.74
1980	20.43	19.93	-0.47	0.97	77.11		-0.0018 <sup>4)</sup>			
1981	20.60	17.80	0.80	2.00	78.30					
1982	20.69	16.62	2.40	1.66	78.24					
1983	20.95	17.91	2.01	1.03	77.66					
1984	20.81	18.02	2.47	0.32	77.20					
1985	20.48	17.33	3.50	-0.36	76.91					
1986	22.35	17.20	5.19	-0.04	75.26					
1987	22.66	17.04	5.02	0.60	75.62					
1988	24.01	17.78	5.23	0.99	74.72					
1989	22.71	18.59	5.40	-1.28	73.72					
1990	25.96	19.17	5.85	0.93	72.74	1990 <sup>3)</sup>	25.11	19.18	5.67	0.27
1991	26.67	19.77	5.76	1.14	72.28		0.018 <sup>5)</sup>			
1991	22.09	20.88	-0.08	1.29	76.64	1991	22.09	20.88	-0.08	1.29
1992	21.48	20.22	-0.03	1.29	77.04					
1993	21.57	18.85	0.56	2.16	77.89					
1994	21.98	19.72	0.63	1.63	77.06					
1995	22.99	19.76	0.78	2.45	77.05					
1996	22.92	18.99	1.22	2.72	77.60	1996	22.92	18.99	1.22	2.72
							0.0074 <sup>6)</sup>			

Notes: 1) Three-year average 1960-62. - 2) Three-year average 1978-80. - 3) Three-year average 1989-91. 4) g(sp) p.a. for 1961-79. - 5) g(sp) p.a. for 1980-90. - 6) g(sp) p.a. for 1992-96.

## Annex C

### GDP in constant prices 1990 USA, 1961-96 (growth indices)

Year	GDP	OSP	C	IP	E	Period	GDP	OSP	C	IP	E
<b>1960</b>											
<b>1961</b>	1.025	1.066	1.032	0.986	1.139						
<b>1962</b>	1.052	1.078	1.043	1.099	0.786						
<b>1963</b>	1.040	1.015	1.036	1.045	1.252						
<b>1964</b>	1.056	1.118	1.049	1.076	1.380						
<b>1965</b>	1.056	1.074	1.044	1.122	0.766						
<b>1966</b>	1.059	1.066	1.064	1.066	0.632						
<b>1967</b>	1.027	1.044	1.043	0.959	0.886						
<b>1968</b>	1.042	0.963	1.045	1.046	0.246						
<b>1969</b>	1.027	0.962	1.024	1.050	1.070						
<b>1970</b>	1.002	1.070	1.018	0.926	3.490						
<b>1971</b>	1.029	1.116	1.019	1.101	0.000						
<b>1972</b>	1.051	1.016	1.045	1.114	.						
<b>1973</b>	1.052	1.079	1.034	1.108	-0.574						
<b>1974</b>	0.996	0.958	1.012	0.940	-0.958						
<b>1975</b>	0.996	1.119	1.014	0.848	-5.035						
<b>1976</b>	1.049	1.004	1.041	1.185	-0.217						
<b>1977</b>	1.043	1.019	1.036	1.154	7.060						
<b>1978</b>	1.050	1.065	1.032	1.125	1.034						
<b>1979</b>	1.025	1.019	1.022	1.025	0.852	<b>1961-79</b>	1.0353	1.0435	1.0343	1.0476	.
<b>1980</b>	0.994	0.995	1.014	0.893	0.586						
<b>1981</b>	1.017	1.060	1.004	1.076	0.917						
<b>1982</b>	0.980	0.983	1.014	0.853	1.293						
<b>1983</b>	1.034	1.034	1.044	1.040	2.328						
<b>1984</b>	1.060	1.083	1.041	1.240	1.833						
<b>1985</b>	1.033	0.981	1.048	0.969	1.087						
<b>1986</b>	1.029	0.995	1.040	0.989	1.121						
<b>1987</b>	1.027	0.948	1.035	1.002	1.053						
<b>1988</b>	1.038	1.026	1.036	0.996	0.734						
<b>1989</b>	1.033	1.043	1.025	1.024	0.743						
<b>1990</b>	1.012	1.008	1.024	0.930	0.868						
<b>1991</b>	0.990	0.998	0.997	0.890	0.360	<b>1980-91</b>	1.0203	1.0122	1.0266	0.9873	0.9647
<b>1992</b>	1.028	1.097	1.027	1.048	1.278						
<b>1993</b>	1.024	0.986	1.023	1.073	1.762						
<b>1994</b>	1.037	1.002	1.029	1.117	1.417						
<b>1995</b>	1.026	0.999	1.027	1.012	0.949						
<b>1996</b>	1.036	0.997	1.032	1.059	1.078	<b>1992-96</b>	1.0301	1.0156	1.0273	1.0614	1.2672
						<b>1980-96</b>	1.0232	1.0132	1.0268	1.0085	1.0453
						<b>1961-96</b>	1.0296	1.0291	1.0307	1.0290	.

## Annex D

### OSP/GDP and related ratios USA, 1960-96

Year	OSP	IP	E	D GG (lg-Sg)	C	Period	OSP	IP	E	D GG (lg-Sg)
1960	16.81	16.12	0.78	-0.10	80.65					
1961	17.49	15.51	0.87	1.11	81.21	<b>1961<sup>1)</sup></b>	17.41	15.95	0.77	0.70
1962	17.93	16.21	0.65	1.07	80.53					
1963	17.49	16.29	0.78	0.42	80.21					
1964	18.52	16.60	1.02	0.90	79.71					
1965	18.83	17.63	0.74	0.46	78.84					
1966	18.95	17.74	0.44	0.77	79.14					
1967	19.26	16.55	0.38	2.33	80.36					
1968	17.81	16.61	0.09	1.10	80.58					
1969	16.69	16.98	0.09	-0.39	80.35					
1970	17.81	15.69	0.33	1.79	81.64					
1971	19.31	16.80	0.00	2.52	80.90					
1972	18.67	17.81	-0.34	1.20	80.42					
1973	19.15	18.75	0.19	0.22	79.06					
1974	18.43	17.69	-0.18	0.91	80.30					
1975	20.71	15.06	0.90	4.75	81.75					
1976	19.83	17.01	-0.19	3.00	81.16					
1977	19.37	18.83	-1.26	1.81	80.65					
1978	19.65	20.17	-1.24	0.72	79.28					
1979	19.53	20.17	-1.03	0.39	79.07	<b>1979<sup>2)</sup></b>	19.58	19.49	-0.96	1.05
1980	19.55	18.11	-0.61	2.04	80.61		0.0065 <sup>4)</sup>			
1981	20.37	19.17	-0.55	1.76	79.60					
1982	20.45	16.69	-0.72	4.48	82.38					
1983	20.44	16.78	-1.63	5.29	83.18					
1984	20.87	19.62	-2.82	4.07	81.63					
1985	19.83	18.42	-2.97	4.38	82.83					
1986	19.18	17.69	-3.24	4.73	83.68					
1987	17.70	17.26	-3.32	3.76	84.32					
1988	17.51	16.58	-2.35	3.28	84.19					
1989	17.67	16.44	-1.69	2.92	83.52					
1990	17.61	15.11	-1.45	3.95	84.54	<b>1990<sup>3)</sup></b>	17.68	15.05	-1.22	3.85
1991	17.75	13.59	-0.53	4.68	85.12					
1992	18.94	13.85	-0.66	5.74	84.99					
1993	18.24	14.51	-1.13	4.86	84.85					
1994	17.63	15.63	-1.54	3.54	84.18					
1995	17.17	15.42	-1.43	3.17	84.27	<b>1995</b>	17.11	15.61	-1.48	2.98
1996	16.53	15.78	-1.48	2.24	83.97	<b>(94-96)</b>	-0.0079 <sup>5)</sup>			

Notes: 1) Three-year average 1960-62. - 2) Three-year average 1978-80. - 3) Three-year average 1989-91. - 4) g(sp) p.a. for 1961-79. - 5) g(sp) p.a. for 1980-1996.

## Annex E

### Statistical data on SP and (N)SP

From

$$GDP = C + IP + IG + E$$

we get with the help of

$$IG = D + SG$$

the formula

$$GDP = C + IP + D + SG + E = C + SP + SG \quad (1)$$

because

$$SP = IP + D + E.$$

Both SP and SG are domestic concepts. We shall denote by (N)SP and (N)SG national private saving and national General Government saving. They are calculated from GNP after adding to GNP net transfers income from the rest of the world NTI. Therefore we have

$$GNP = C + (N)SP + (N)SG - NTI. \quad (2)$$

Because

$$GDP = GNP - NFI$$

where NFI denotes net factor incomes from the rest of the world, we get from (2)

$$GDP = GNP - NFI = C + (N)SP + (N)SG - NTI - NFI. \quad (2')$$

From (1) and (2') we get

$$C + SP + SG = C + (N)SP + (N)SG - NTI - NFI$$

and because we have used N(SG) as a proxy for SG, we have

$$SP = (N)SP - (NTI + NFI).$$

Hence

$$SP + (NTI + NFI) = (N)SP \quad (3)$$

or

$$IP + D + E(CA) = (N)SP. \quad (3')$$

According to (3), (N)SP is larger than SP because it comprises also the sum (NTI + NFI). Hence according to (3'), (N)SP consists of (IP + D) plus E(CA), the trade balance in the current account sense, where  $E(CA) = E + (NTI + NFI)$ .

## Annex F

**Components of (National) Private Savings  
Germany (in per cent of (N)SP)**

Year	(N)SP	S (E.) <sup>1)</sup>	S(FE)	S (NFE)	S(HH)	Periods	S(E).	S(FE)	S(NFE)	S(HH)
1960	100	75.31	3.11	72.20	24.69					
1961	100	71.89	3.12	68.77	28.11					
1962	100	72.86	3.43	69.44	27.14					
1963	100	68.45	3.54	64.91	31.55					
1964	100	66.70	3.67	63.03	33.30					
1965	100	64.33	4.14	60.19	35.67					
1966	100	65.51	4.57	60.94	34.49					
1967	100	66.68	3.94	62.74	33.32					
1968	100	64.12	3.35	60.77	35.88					
1969	100	59.73	4.81	54.91	40.27					
1970	100	59.88	4.66	55.22	40.12					
1971	100	59.53	5.10	54.43	40.47					
1972	100	56.62	6.01	50.61	43.38					
1973	100	56.71	6.65	50.06	43.29					
1974	100	54.34	8.42	45.92	45.66					
1975	100	51.87	8.02	43.86	48.13					
1976	100	57.68	7.10	50.57	42.32					
1977	100	58.00	7.79	50.21	42.00					
1978	100	61.27	7.98	53.29	38.73					
1979	100	59.60	8.53	51.07	40.40	1960-79	62.55	5.40	57.16	37.45
1980	100	56.45	9.52	46.93	43.55					
1981	100	52.90	10.56	42.34	47.10					
1982	100	55.97	10.12	45.85	44.03					
1983	100	64.47	10.01	54.46	35.53					
1984	100	62.75	9.69	53.06	37.25					
1985	100	62.21	8.83	53.38	37.79					
1986	100	63.82	6.99	56.83	36.18					
1987	100	63.19	7.32	55.87	36.81					
1988	100	64.89	8.51	56.38	35.11					
1989	100	64.78	7.49	57.29	35.22					
1990	100	62.98	6.48	56.51	37.02	1980-90	61.31	8.68	52.63	38.69
1991	100	59.80	8.73	51.07	40.20					
1992	100	58.83	7.87	50.95	41.17					
1993	100	59.56	8.58	50.98	40.44					
1994	100	62.14	8.96	53.18	37.86					
1995	100	64.93	8.85	56.08	35.07					
1996	100	63.77	8.90	54.87	36.23	1991-96	61.50	8.65	52.85	38.50
						1960-96	62.01	6.90	55.11	37.99

Note: 1) S(E) = S(FE) + S (NFE).

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