Philipp Bagus

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THE FATAL PRODUCTIVITY NORM[*]

Abstract:

The productivity norm is a widely accepted and unchallenged concept in Germany, even though high unemployment rates have prevailed over decades. This paper offers a critique of the productivity norm doctrine, which states that wages should be raised along with labor productivity. First, an analysis is made of how the discounted marginal value productivity (DMVP) determines factor prices. This essay will then show that a wage set by the productivity norm is not identical with the DMVP of the workers. This is so because discounting is neglected by the productivity norm. The productivity norm is centrally planned and it uses an average of productivity instead of individual productivity. Next, this critique examines the influence of the monetary realm upon the DMVP and the productivity norm. The relationship between prices and productivity is negative rather than positive. The consequences of applying the productivity norm in the form of involuntary unemployment and real income losses are discussed next. This essay then concludes with the hope that the fatal productivity norm will be dismissed in the future.

JEL: J 24, J 30, J 51, J 60.

Introduction

With more than four million people officially seeking a job, unemployment is one of the most severe problems in Germany. One of the main reasons for this burdensome unemployment is wage agreements that are too high. These wage agreements are primarily legitimated by the "productivity norm theory" that states that wages should be raised according to increases in "labor productivity." Thus, when labor productivity increases, or is expected to increase, say for example, by three percent, real wage rates should also be raised by three percent. At any rate, they can be raised by three percent without wreaking havoc on the smooth operation of the economy. Originally, the productivity norm was "invented" not only to prevent unemployment but also to prevent price inflation. As empirical evidence shows, both ends were not attained.[1] This has led to many hypotheses and extensions of the productivity norm. Yet the core of the productivity norm theory remains to be challenged.[2] This essay challenges the core of the productivity norm theory. First, we will look at how factor prices are determined in the market. Then, we will examine the differences between factor price determination in the market and the productivity norm. This will then bring us to the analysis of the consequences of applying the productivity norm, ending with a conclusion concerning the further treatment of the productivity norm.

The Determination of Factor Prices

In the market process, prices of factor units are set according to the theory of discounted marginal value productivity (DMVP). Hereby, marginal value productivity

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[1] See appendix table 1 and 2.
[2] An exeption is Wahnschaffe, W. (2002). See for other critiques van Suntum, U. (1999), p. 246 or Wansleben, M. (1986), p. 142.

(MVP)[3] is the contribution of a factor unit to the production process. It is expressed in monetary terms.[4] Hence, MVP is determined by two elements: First, it depends on the physical product produced by one unit of a factor (marginal physical productivity) and secondly, on the consumers´ valuation of this product. Marginal physical productivity (MPP) times the price of the product is MVP.

In the market process the entrepreneur tries to estimate *ex ante* the MVP of the factor units by estimating both the MPP and the price of the product. According to his subjective estimation, he contracts the production factors. More importantly, he only contracts an additional factor unit to a price that he thinks the MVP of this unit will compensate him for. If services of production factors are paid before the product is sold, the MVP will be discounted by the pure rate of interest on the market leading to the discounted marginal value productivity (DMVP).

When the product is produced and offered on the market, consumers may value it and pay a price for it. Then it will – *ex post* - become apparent how good the estimation of the entrepreneur in relation to other entrepreneurs actually was. If the entrepreneur overestimates the MPP of the unit factor or the price of the product, bidding and contracting accordingly, he will suffer an entrepreneurial loss. In contrast, if he sees that the factors' prices are lower than their potential DMVPs, he would be able to use them in a production process of higher DMVPs by bidding for and hiring these factors. In this case the entrepreneur will receive an entrepreneurial profit.

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[3] Rather, it should be called marginal monetary productivity, since the concept does not deal with subjective value of the marginal product.

[4] In Rothbard´s words: "[MVP] is the amount of revenue intake attributable to a unit of a factor." See Rothbard, M. (2001), p. 399.

The entrepreneurial process oriented by profit and loss leads to the result that each non-specific factor in the free market tends to earn its discounted monetary contribution to the final product. For the factor of labor that means "each man is paid what he is worth in producing for consumers."[5] Or in other words, there exist forces that limit the deviation of the wage from its DMVP.[6]

How do these forces work exactly? Let us imagine that if entrepreneur E contracts one labor hour from worker W to produce P, the production of P (MPP) increases one unit and can be sold in one year for 100 monetary units (MVP). The interest rate is ten percent per year. E estimates, therefore, the DMVP of W as 90 monetary units (m.u.). What would happen if W would be paid less than 90 m.u ., perhaps 50 m.u.? E would make respectable profits. He and other entrepreneurs would have an incentive to ask for more services from W in order to produce more P. Therefore W´s wage would increase while at the same time the supply of P increases, driving the price of P down. This process tends to equalize W´s wage with his DMVP. The process is the opposite if W receives a wage higher than his DMVP.

Money and Wages

Let us now look at the case of a change in the MPP of a worker. Let us first consider that the MPP of one (some) worker(s) rises. This increase in marginal physical productivity means an increase in the physical production that results in a lower product price than there would have been without the production increase. Hence, there are two opposing forces affecting the MVP. By the increase in the physical production, the MVP will be higher than without this increase. And due to the lower product price, the MVP will be lower than without the price drop. Therefore, the development of the worker`s MVP following an increase in the marginal physical productivity is undetermined. Hence, with in an increase in the MPP of one worker,

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[5] See Rothbard, M. (2001), p. 520
[6] See Böhm-Bawerk, E. von (1914) in Weiss, F. (1968), pp. 230.

his MVP and DMVP as well as his nominal wages might rise or fall or remain constant. Let us consider the case in which the MPP of all workers rises. If the MPP of all workers rises there will be a larger physical output. As in the case before, this increased production will result in lower prices than without the production increase. The MVP of individual workers, analogous to the argument above, might rise, fall, or remain constant.

However, it is impossible for the MVP of all workers to rise (fall), if the money supply, cash balance demand and MVP of other factors of production remain constant. This is so because the same amount of money is spent and therefore total nominal production remains constant. The MVP of all workers can only rise if there is an increase in the supply of money or a decrease in the reservation demand for money. Then MVP is raised because there will be a tendency towards higher consumer goods prices.

Capital Accumulation and Money Wages

Let us now consider the evolution of money wages and real wages in a progressing economy. In a progressing economy there is a constant increase of capital goods per person. The increase of capital goods is made possible through additional savings which are manifested in a lower interest rate. The additional capital goods allow an increase in the number of consumer goods. If the money supply remains constant, the increase in the number of goods leads to a fall in prices.

However, the prices of consumer goods always fall relatively more than money wages which leads to an increase in real wages, as Rothbard has demonstrated.[7] As we know, the price of a factor unit (fp) tends towards its DMVP, that is marginal physical productivity

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[7] See Rothbard, M. (2001), pp. 478.

(MPP) times the price of the product (P) divided by a discount factor (d) which is determined by the interest rate.

$$fp = \frac{MPP * P}{d}$$

Then if we assume that the worker would only buy the product with the price P[8], the real factor price (rfp) is:

$$rfp = \frac{MPP * P}{d * P} = \frac{MPP}{d}$$

As Rothbard explains:

> "Now the progressing economy consists of two leading features: an increase in the MPP of original factors resulting from more productive and longer production processes, and a fall in the discount or interest rate concomitant with falling time preferences and increasing gross investment. Both elements – the increase in MPP and the fall in d – impel an increase in real prices of factor services."[9]

Therefore, in the unhampered market with an ever greater amount of capital accumulation, workers automatically profit from an increase in their real wages due to increases in their "real" DMVPs, even though some money wages might fall.

We have now examined the perspective of the entrepreneur that manifests itself in actions in the market and why nominal and real wages change in a market economy. Now we are able to turn to the productivity norm to see if it is identical with the DMVP theory.

The Productivity Norm

The concept of the productivity norm, also called "productivity oriented wage policy", has endured some changes in its history.[10] Its most basic form states that real wage rates

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[8] This is of course not a realistic assumption. However, in a progressing economy the prices of other goods will fall as well. In order to make just qualitative statements the canceling of P might approximately be justified.
[9] See Rothbard. M. (2001), p. 478.
[10] For a detailed overview of the variants of the productivity norm see Wansleben, M. (1985), pp. 48-72 and Lesch, H. (2002), pp. 8-13.

should be raised in accordance to "labor productivity," while "labor productivity" is defined as real production divided by working hours.[11] In practice, the monetary value of production is divided by the number of working hours. When the productivity of one year is compared to the next, any increase is then corrected by the price inflation rate.[12]

Let us now have a look at the differences between the productivity norm and the DMVP theory. First, and most obvious, the productivity norm is a norm and not a theory. The DMVP theory as applied to wages explains that on the free market each worker tends to receive the equivalent of what he contributes to the production process. If the free market is not interfered with, the decisions of voluntarily interacting individuals determine wages. The productivity norm, however, demands deviations from the free market result. It argues that calculations of macroeconomic variables should determine wages. The implicit moral idea behind the productivity norm is that all increases in productivity somehow belong exclusively to workers and not to entrepreneurs or capitalists. There is also the implicit egalitarian idea involved that the increases in productivity should be spread equally to all workers. Consequently, increases in productivity are to be used to increase wages equally.[13]

Second, the productivity norm does not account for the interest rate. Yet, while the productivity norm set wage is not affected by changes in the interest rate, changes in the market interest rate will alter the DMVP of the worker and accordingly his free market

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[11] See Lesch, H. (2002), p. 6 or Bertling, H./Luzius, F. (2000), p. 245.

[12] Based on this norm there are several elaborations. Assuming that a full labor productivity oriented wage increase would not hamper employment, the Sachverständigenrat (German Council of Economic Experts), for example, argues that the full scope of labor productivity increase should not be used totally in order to raise employment. See Sachverständigenrat (1995), figure 374 or idem (1981), figure 337.

[13] These considerations concerning the implicit ethical theory behind the productivity norm are in response to comments by an anonymous referee.

wage.[14] Moreover, jobs exist at different places in the production process. Some jobs might be paid for rather near to the moment when the final product is sold, while others are paid for long before the final product is sold. For the latter the discount must be higher than for the first. Therefore DMVPs of workers are affected differently by changes in the market interest rate. This important detail is also neglected by the productivity norm theory.

Third, it must be made clear that with past productivity increases that are calculated, computations are lagging behind. For past periods wages have already been paid out. However, the productivity norm is used for the settling of future wages. Indeed human action, and hence the entrepreneurial process, aims necessarily to the future. Calculations regarding productivity norms should be based upon estimates of future changes in productivity and not past ones. There is no guarantee that past productivity will be accomplished in the future. The same is true for an econometrically calculated trend of labor productivity, since there is no need that this past trend will hold in the future.[15] There always remains an ineradicable uncertainty towards the future productivity since consumer valuation can change. Hence, there can only be estimations but no measure of future productivity increases. These estimations are a vital element of the entrepreneurial process since entrepreneurs compete in anticipating the DMVPs of the factors correctly.

Fourth, there are terminological and methodological problems involved in the productivity norm. It simply does not make much sense to aggregate heterogeneous units as working hours. Every human being is different and has a different work quality.[16] There are very different types of labor in a production process, each one different from the other. Hence,

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[14] In fact, one of the variants of the productivity norm, the "cost oriented wage policy " takes changes of "capital costs" into account. See Sachverständigenrat (1964), figure 248. Yet, in world of central banking and fiat inflation the "capital costs" do not have to coincide with the pure rate of interest. See Rothbard (2001), p. 853.
[15] For an example of an argument for the "trend" of change in productivity, see Lehment, H. (1999), p. 80 and Sachverständigenrat (2001) figure 400.
[16] See Mises, L. von (1998a), p. 590.

it makes make even less sense to divide something by an aggregate of heterogeneous units. Macroeconomic aggregates like the sum of working hours are irrelevant for human action and decision-making which are based on marginal units and marginal utility.

Related to this problem are the statistical problems of the correct determination of working hours and real production. It is not only difficult and costly to get the correct data,[17] but it is also problematic to get the "real" output by deflating the nominal aggregated output.

These problems are inherent in any attempts to measure the purchasing power of money and the aggregation of heterogeneous units.[18] How, for example, would someone calculate the productivity increase, if *ceteris paribus* the production of good x rises by two units and the production of good y falls by one unit?

Furthermore, the intent to centrally determine the correct price for labor by mathematical methods, as proposed by the productivity norm, might be called pretence of knowledge.[19] And terminologically speaking, it is questionable if not at the least misleading to divide real output by the number of working hours and to name the result "labor productivity."[20] This terminology seems to imply that increases in "labor productivity" are always due to increased efforts of the workers. Yet, normally these increases are due to capital improvements. Analogically, we might define the division of real output by number of pencils used in a firm as "pencil productivity." However,

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[17] See Morgenstern, O. (1965), pp. 11; Fürst, G. (1957) in Dräger, H. (1961), pp. 295; van Suntum, U. (1989), pp. 138 or Grömling, M./Lichtblau, K. (1997), p. 8.
[18] See Mises, L. von (1998a), pp. 221.
[19] For the problems of using the mathematical accuracy of the natural science in economics, i. e. scientism, see Hayek, A. von (1968), in Leube, K./Nishiyama, C. (1984), S. 254 pp. For the impossibility of calculating correct market prices, see Huerta de Soto, J. (2001), p. 100 or the old representatives of the school of Salamanca, Juan de Salas (1617), p. 9 and Juan de Lugo (1642), p. 312.
[20] See Fürst, G./Gabriel, S. (1956) p. 231, Kullmer, H. (1965), p. 6, or Lesch, H. (2002), pp. 25.

no one would think that prices of pencils should be set according to changes in "pencil productivity" or that increases in "pencil productivity" are due to the fact that pencils have become more productive.

Fifth and most importantly, the absolute productivity of a factor is always zero, since other factors must intervene to produce the product. As Rothbard points out:

> "It is, then, clearly impossible to impute absolute "productivity" to any productive factor or class of factors. In the absolute sense, it is meaningless to try to impute productivity to any factor, since all the factors are necessary to the product. We can discuss productivity only in *marginal terms*, in terms of the productive contribution of a single unit of a factor, given the existence of other factors. This is precisely what entrepreneurs do on the market, adding and subtracting units of factors in an attempt to achieve the most profitable course of action."[21]

Hence an "average productivity" like "labor productivity" is not important for the entrepreneur; he tends to think in marginal terms.[22] He thinks of employing (or dismissing) one or more additional workers. Their contribution to final product (DMVP) is important for him. The average provided by dividing by all working hours is economically irrelevant. As Mises puts it:

> "The concept of the productivity of labor in general is no less empty than all other universal concepts of this kind, e.g., the concept of the value of iron or gold in general. To speak of the productivity of labor in a sense other than that of the marginal productivity is meaningless."[23]

Most importantly, "average" productivity and marginal productivity of an individual are not the same. There is no reason why the average productivity should always coincide with the DMVP of a single worker. Actually, DMVP and average labor productivity must not even move in the same direction. This is due to firings, hirings, price changes, variations in the use of machines, new technologies, individually different efforts, aging, education, or substitution of unqualified by relatively more qualified workers. Every change in the data of

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[21] Ibidem.

[22] It is of course true, that an entrepreneur might use the average labor productivity of his employers as an approximation for wage settling. However, if the deviation from DMVP becomes too high he will suffer losses and there will be profit opportunities for other entrepreneurs. The higher the aggregation to calculate the average labor productivity becomes, the greater will be the deviation from DMVP.

[23] Mises, L. von (1998a), p. 605.

the economy may change both DMVP and "labor productivity," but not to the same amount and not necessarily in the same direction. Take for example the average labor productivity of a firm. It increases when more productive machines are used. Yet, at the same time, the DMVP of an individual worker might fall if he handled one of the old substituted machines and is not able to control the new ones. If all wages are raised equally according to "labor productivity increase" the worker would be paid a wage higher than the one he would be paid according to his fallen DMVP. To keep employing the worker means a monetary loss for the entrepreneur.

Sixth, a very prominent and major source of changes in the data of the economy is change in the money supply. Alterations of the money supply also influence both the labor productivity and DMVP in several ways. Yet, these influences are not necessarily the same, which leads us to another reason why DMVP theory and the productivity norm do not coincide, in either practical or theoretical terms. Again, the crucial factor is that the productivity norm is an average-based concept while DMVP theory is a marginal concept. If the money supply increases (decreases) the nominal value of production tends to increase (decrease) as well. As we know, these increases (decreases) are now corrected by the statistical computed price inflation rate. If wage rates are set according to this "real labor productivity" change, they will vary in the same way for all workers. Yet individual workers' DMVPs might have varied tremendously.

Let us look at the empirically more relevant case of inflation to illustrate this statement. In practice, new money is not injected into the economy at all places at the same time, but rather in specific spots distributing and working its effects through the whole economy in the course of time. When individuals receive new money and spend it on certain goods, prices tend to rise higher in this area of the economy. Hence, DMVPs of factors also

rise in these industries. However, in other parts of the economy, prices have not yet risen. Therefore, the DMVP in these industries do not change, even though average labor productivity of the economy may have changed. If in this case the productivity norm is applied, and "labor productivity" has risen, all wages in this economy rise equally. Since they rise higher than the DMVP in the areas of the economy still not affected the result will be unemployment.

Furthermore, there is another relevant effect of inflation. All changes in the money supply induce further changes in the economy.[24] The first receivers of the new money benefit from the inflation since their income rises before their buying prices rise. Accordingly, the individuals whose buying prices rise before their selling prices rise, lose.[25] Hence, a new distribution of wealth ensues. And if the people have different personal preferences, the whole price structure and structure of production will change. New enterprises become profitable while others perish. Due to the revolution of the price structure there will be additional changes in the DMVP of the factors of production. Some will increase relatively and others will decrease relatively. Now, if wages are raised according to the change of average "labor productivity" this practice of setting wages falls short of the structural changes in the economy. Some will be paid less than their DMVP´s increase while other will be paid more than their changed DMVP´s. Hence, income redistribution and subsequent relative price changes are another reason why in a time of continuous inflation the average productivity norm wage deviates from what the DMVP theory predicts.

Applying the Productivity Norm

If the "productivity norm" is applied to wages, a homogenous wage for different workers is set, and workers are affected differently. There can be three groups:

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[24] See Mises, L. von (1998a), p. 415.
[25] See Rothbard, M. (2001), p. 851.

The first group of workers has a DMVP which is higher than the "productivity norm" wage. They are harmed by the productivity norm wage since they would earn more in the free market.

There might also be another group of workers (group two) whose DMVP coincides with the productivity norm wage. These workers earn the same wage they would earn on the free market. For them the application of the productivity norm is without any direct effects. Yet, they are affected by the indirect effects we will discuss below. Last, but not least, there will be a third group whose DMVP is lower than the productivity norm wage. To employ them means to pay more for their work than it is worth in the eyes of consumers. They will be fired and unemployed sooner or later, since no one can afford to incur losses for ever.

Moreover, there are several indirect effects of the productivity norm doctrine. The acceptance of the "productivity norm" gives rise to a "legitimacy" of the union practice of coercively raising wages. Because the "productivity norm" is only coincidently fulfilled in the free market, unions find a noble task fighting for the "oppressed" workers and resorting to the coercion they can exercise thanks to government privileges. Hence, due to the productivity norm doctrine and its ideological justification of union practice,[26] the process of capital accumulation can be disturbed. Thereby, labor unions harm the workers they are supposed to defend.

There are also distributional effects among the workers if the productivity norm is applied. Two main distributional effects are important to note here. First, the workers from the first group will become employed for a wage that is lower than their DMVP. That leads to a profit for entrepreneurs at the cost of the workers of group one. The opposite is true for

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[26] See Mises, L. von (1998a), p. 605.

workers of group three. They become employed for a wage higher than their DMVP gaining at the cost of the entrepreneur. But this is only possible for an extended period of time if the productivity norm is strictly imposed, which means in this case, that it is forbidden to bid up wages to their DMVP or to fire workers. Therefore, we see in harmony with Mises theory of interventionism[27] that the productivity norm could lead to more interventions in order to prevent unemployment to the point where the government decides everything about employment and wages. Moreover, if it is forbidden to fire workers at the productivity norm wage, entrepreneurs and capitalists might suffer losses. However, they will not starve but start consuming their capital which is not in the interest of the workers. This is so because the consumption of capital will change the ratio of capital to labor and lower the DMVPs of workers.[28]

The second distributional effect comes into play if wages can be bid up and workers can be fired. Then for members of the third group the application of the productivity norm leads to more unemployment than there would have been without the application of the productivity norm. The income of the now unemployed workers falls. Production becomes more capital intensive, i.e., the amount of capital invested per employed worker rises. That means that DMVP of the workers still employed may in fact rise. Therefore, the wages of some workers may rise and stay at that point. They profit from the productivity norm. Hence, there is a distributional effect among workers.

Moreover, this development means a misallocation of resources. Due to the productivity norm some workers remain idle while the production becomes more capital intensive than free market allocation would ensure. The optimal combination of the two

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[27] See Mises, L. von (1996), pp. 17-18.
[28] See Mises, L. von (1998b), p. 32.

factors, capital and labor, cannot be reached any more.[29] The result is real income losses. Total production shrinks. In summary, the justification for union settled wages which differ from market wages simply fails. Applying the productivity norm results not only in redistributed income but a reduction of overall income.

Conclusion

In the German media, the public and even economists focus on a concept of productivity that has severe conceptual problems. Instead of letting the free market estimate the DMVP and determine the wage of the workers, labor unions demand increases of the wages to the extent of labor productivity. Employers and economists argue for wage increases which are slightly less than (labor) productivity increases.

One of the main reasons for German mass unemployment is the German public's belief in the productivity norm and its subsequent identification of the productivity norm with DMVP theory. To relieve German mass unemployment it must be understood that the myth of the "productivity norm" is very harmful, that it is based on a concept of "labor productivity," and that makes no economical or logical sense.

If the misplaced faith in the "productivity norm theory" can be shown for what it is, that in an unhampered market each non-specific factor tends to be paid its contribution to the

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[29] It must be clarified that capital and labor of course are not homogenous factors, but consist of many kinds of production factors. These production factors have an optimal proportion for every production. For the law of returns, see Mises, L. von (1998a), pp. 127.

final product, there might be a chance to put an end to government and union intervention into the labor market. A main reason for involuntary unemployment might then be eliminated.
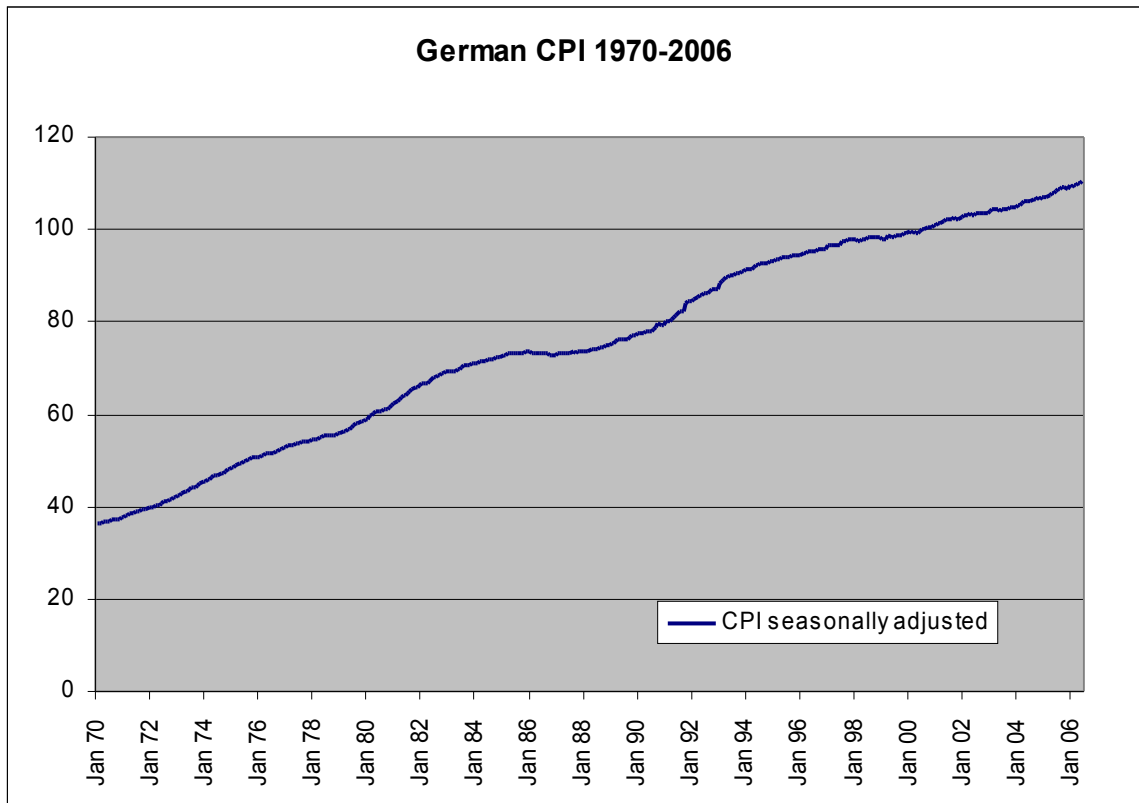
Appendix:

Table 1.

German Unemployment Ratio 1970-2005
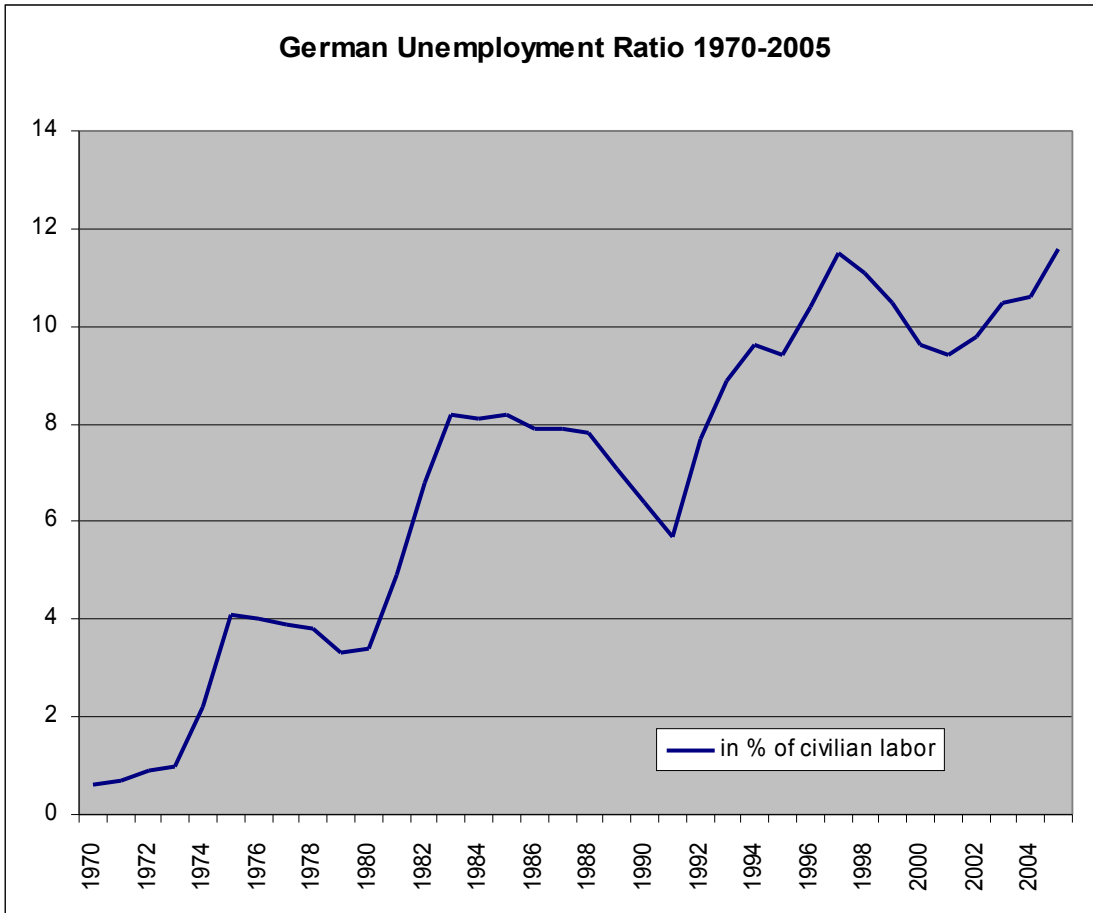
Source: Datastream.

Table 2.

German CPI 1970-2006

Source: Deutsche Bundesbank, 2000 = 100.

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