Challenges to the German Economy 1973–1983

Supply Shocks, Investment Slowdown, Inflation Variability and the Underutilization of Labor

By Wolfgang Franz

This paper highlights recent developments in inflation and unemployment in the Federal Republic of Germany 1973 - 1983. It also includes an attempt to broaden the narrow perspective of the officially published unemployment figure by calculating a time series of the underutilization of labor.

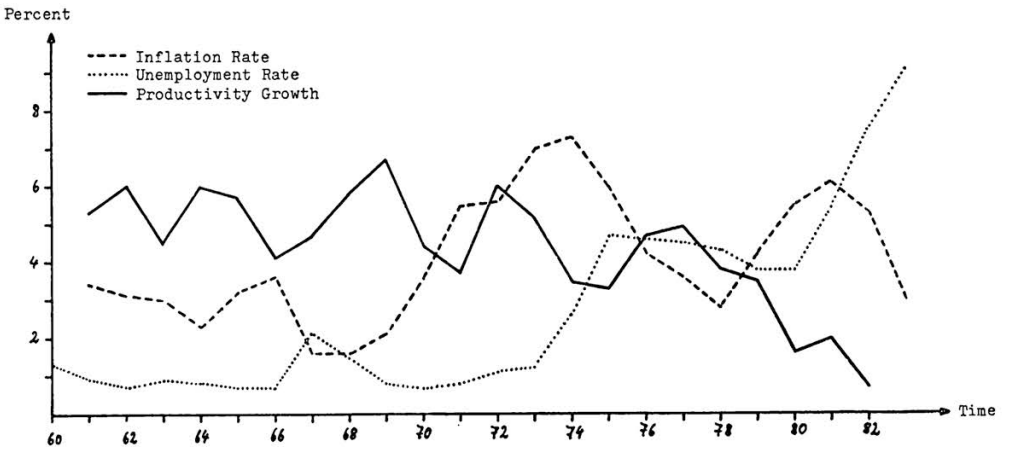
> Perhaps it is simply that we have inflation because we expect inflation, and we expect inflation because we have had it.
>
> R. M. Solow (1979)

I. Introduction

Following the suggestions of the European Economic Associations this paper highlights recent developments in inflation and unemployment in the Federal Republic of Germany (FRG).

As an introduction some facts about unemployment and inflation in the FRG 1970 to 1983, although in themselves well known, are reviewed with an emphasis on providing an accessible statement of the phenomena which the subsequent theoretical considerations should be able to account for. This survey of facts and problems includes an attempt to broaden the narrow perspective of the officially published unemployment figure by calculating a more realistic time series of the underutilization of labor in the FRG. Additionally, some structural aspects and some institutional regulations which are essential to an understanding of the German labor market will be explained.

An efficient and widely accepted analytical framework for reviewing the economic situation and the outcome of macro-policy is the investigation of the non-accelerating inflation rate of unemployment (NAIRU). Is there a stable value of the NAIRU and if not, what are the reasons for its possible shifts? Does the NAIRU depend on the inflation rate and if so what trade-off between inflation stability and unemployment can be recognized?



Source: Sachverständigenrat (1983).

Figure 1: Economic Data 1960 - 1983

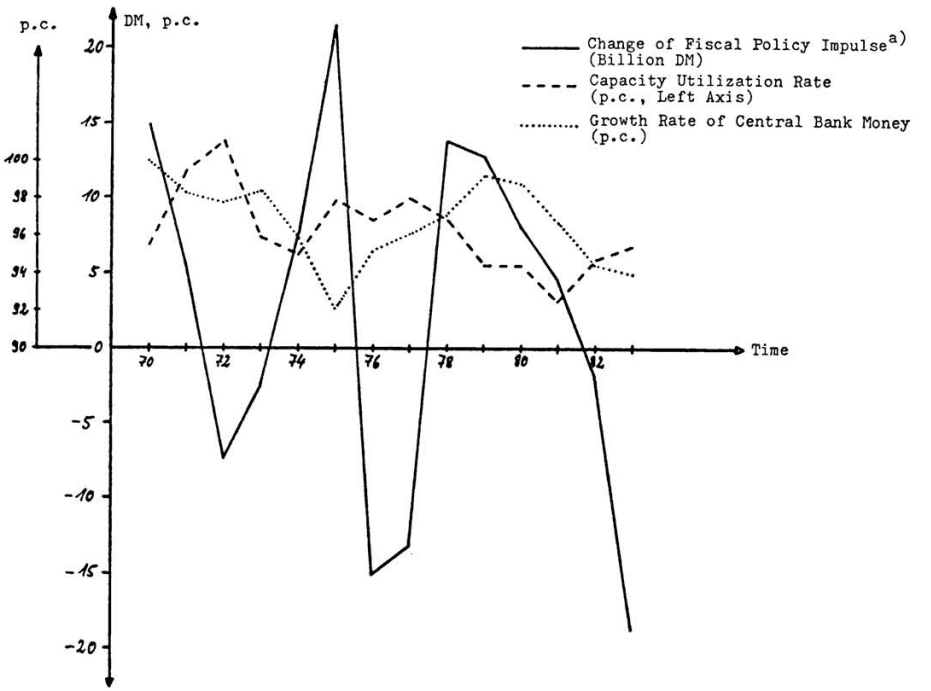
The organization of the paper follows these lines. The next section reviews the facts. In section III a suggested measure of the underutilization of labor is offered. The theoretical formulation of the (no-shock) NAIRU is presented in section IV and empirically tested in section V. The paper concludes with a summary of the findings.

II. Facts and Puzzles

Among others the most important aspects which differentiate the seventies from the previous decade are the collapse of the Bretton Woods system of pegged exchange rates, the upsurge in prices due to an excess demand in the labor market in the early seventies and the extraordinary spurt in raw material prices. In the aftermath of these events the FRG experienced simultaneous inflation and unemployment further accompanied by a productivity slowdown.

Figure 1 illustrates these trends for the time period from 1960 to 1983. Due to substantial increases in nominal wages more than 15 percent in 1970, inflation accelerated already before the first oil price shock in 1973/74. In order to bring down inflation the Deutsche Bundesbank switched to a very restrictive monetary policy in 1973[1]. The expansion rate of central bank money — the intermediate target for the Bundesbank's monetary policy — declined from 13 percent in 1973 I to about 6 percent in 1974 II, but increased afterwards. The recession which

[1] See *Lehment* (1982) for more details.



a) Fiscal Policy Impulse = Built in Flexibility-Augmented Fully Employment Budget Surplus Minus Actual Surplus.

Source: Sachverständigenrat (1983).

Figure 2: Economic Policy Reactions

began in 1973 was not caused by the oil price shock alone, but by a combination of a restrictive monetary policy and supply shocks. The situation was even worse when the second oil price shock hit the German economy. In 1979 II the expansion rate of central bank money peaked at about 11 percent and declined thereafter as the Bundesbank attempted to correct the preceding expansionary policy (see figure 2). This phase of a restrictive monetary policy coincided with OPEC II. The Deutsche Bundesbank, however, did not accomodate the second oil price shock and kept the monetary expansion at the lower end of the announced target range. Moreover, fiscal demand policy also failed to react in an accomodating way because government was not prepared to tolerate the budget deficit necessary for a successful demand management. This was due to the growing public debt resulting from former administrations' failure to accumulate financial means out of the budget surplus' in the boom phase at the beginnings of the seventies. An adequate Keynesian demand policy in the early seventies would have

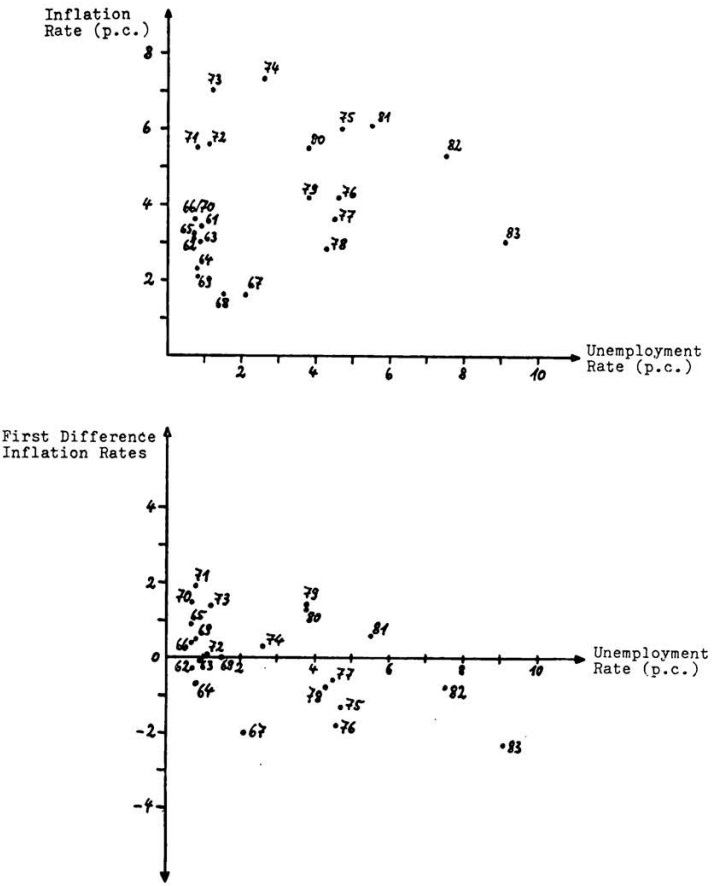


Figure 3: Inflation and Unemployment 1961 - 1983

allowed to pursue a demand stimulating fiscal policy with less worry over public debt.

From figure 3 it is apparent that there is no simple bivariate relationship between unemployment and inflation. This, however, does not exclude stable relationship within certain subperiods. This can be seen more easily by calculating the non-accelerating inflation rate of unemployment (NAIRU). The figure indicates that there might have existed a steep and stable Phillips curve from 1962 to 1973 with a NAIRU of approximately one percent. The evidence is less clear for the period 1974 to 1983. Are there several shifts of the Phillips curve to the right which increase the NAIRU? Did the Phillips curve become

flattened out or does the trade-off between inflation and unemployment tend to fade away?

To help answer these questions this analysis proposes a more adequate picture of unemployment in Germany than the view provided by official statistics.

III. The Underutilization of Labor in Germany

In Germany, officially announced unemployment consists of those persons who register themselves as such at the labor office. Underutilization of labor which is neglected in these figures includes

(i) discouraged workers who withdraw from the labor force or persons who search for a job without consulting the labor office and who do not hold a claim to unemployment compensation;

(ii) foreign workers who involuntarily remigrated to their non-EC home countries;

(iii) so-called short time workers; and,

(iv) persons who are on training program financed by the labor office and who would have been unemployed otherwise.

In what follows it is investigated to what extent these groups contribute to hidden unemployment though no claim is made that this list is exhaustive.

Discouraged Workers

Since the officially published labor force, i.e., the sum of employees and unemployed persons registered at the labor office, is subject to business fluctuations it is possible to calculate a "potential" labor force. This can be done, for example, by estimating a labor supply function which uses the state of the labor market or the capacity utilization rate as one of the explanatory variables. This regression is then employed to calculate a labor force for a "normal" unemployment rate. The difference between the latter figures and the originally estimated labor force is called "*net* discouraged workers" due to the notion that in an economic downturn additional workers such as housewives may enter the labor market in order to maintain family income. A standard labor supply function for the period 1962 I - 1980 IV is given by:[2]

[2] Corrected for first order autocorrelation; t-values in brackets; seasonal dummies not reported.

$$(1) \qquad \frac{LF}{POP} = \underset{(67.6)}{0.8235} - \underset{(4.0)}{0.009699}\, w_t^r - \underset{(8.7)}{0.006011}\, A_{t-1} - \underset{(3.1)}{0.003661}\, UR_t$$

$$\bar{R}^2 = 0.998$$

$$DW = 2.342$$

$$\hat{\varrho} = \underset{(16.4)}{0.8880}$$

where

LF = German labor force

POP = index correcting for changes in the number of households and in the age-sex composition of the population[3]

w^r = real net wage rate

A = real non-human wealth per household

UR = officially published unemployment rate

ϱ = first order autocorrelation coefficient.

The choice of a "normal" unemployment rate is somewhat arbitrary. In order to evaluate an upper limit for this type of hidden unemployment we employ a constant one percent unemployment rate, which, with a few exceptions, reflects the situation in the sixties. The number of estimated net discouraged workers is reported in column (4) of table 1. The number of these persons amounts to roughly one half of registered unemployed people. We want to stress, however, that these figures are questionable due to the limitations of our approach.[4]

Remigration of Guest Workers

Although an inflow of guest workers into the FRG can be traced back to 1955, the major part of immigration occurred during the sixties. During this time period domestic labor was in excess demand,[5] but on the other hand the German economy was enjoying virtually unlimited access to foreign labor markets. Thus, the excess demand for labor was satisfied largely by the immigration of foreign workers. Employment of foreigners rose from 280,000 in 1960 to a peak of 2.6 million in 1973 (i. e., from about 1.3 percent to 10 percent of all employees). The first interruption to that inflow came with the recession in 1967. The number of foreign workers decreased from 1.3 million persons (September 1966) to 904,000 persons (January 1968), but regained its pre-recession

[3] See *Lucas* and *Rapping* (1970), 279 - 280.

[4] This reservation concerns, for example, the labor supply function. For a more detailed analysis see *Franz* (1983 a).

[5] For further investigations see *Franz* (1981).

Table 1: **Official Unemployment and Underutilization of Labor**

Time	Official Unemployment[a]		Net Discouraged Workers[a]	Unemployed Persons in Training Programs[b]	Induced Remigration of non-*EC* Workers[d]	Export of Unemployment[a, c]	Short-Time Worker[a]	Underutilization of Labor	
	Unemployed Persons (1,000)	Unemployment Rates	(1,000)	(1,000)	(1,000)		(1,000)	Not employed Persons[e]	Underutilization Rate
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1962	155	0.7	—	—	—	—	4	155	0.7
1963	186	0.8	—	—	—	—	11	190	0.8
1964	169	0.8	—	—	—	—	2	170	0.8
1965	147	0.7	—	—	—	—	1	147	0.7
1966	161	0.7	—	—	8	2	16	168	0.7
1967	459	2.1	124	3	44	44	143	678	3.1
1968	323	1.5	86	4	19	48	10	464	2.1
1969	179	0.9	—	5	—	10	1	194	1.0
1970	149	0.7	—	10	—	—	10	162	0.8
1971	185	0.8	—	16	—	—	86	230	1.0
1972	246	1.1	—	18	6	5	76	294	1.3
1973	273	1.2	—	18	18	11	44	317	1.4
1974	582	2.6	177	20	83	59	292	935	4.1
1975	1 074	4.7	490	38	176	168	773	2,028	8.6
1976	1 060	4.6	518	30	163	215	277	1,915	8.0
1977	1 030	4.5	501	33	160	200	231	1,841	7.8
1978	993	4.3	498	43	152	198	191	1,796	7.5
1979	876	3.8	421	49	123	172	88	1,547	6.5
1980	889	3.8	420	55	135	155	137	1,565	6.5
1981	1 272	5.5	650	66	130	160	347	2,264	9.4
1982	1 833	7.6	950	78	125	150	606	3,213	12.7
1983	2 263	9.2	1,170	86	120	145	675	3,889	15.0

a) Averages per year. — b) 1967/68: November; 1969/82: December; 1983: September. — c) Calculated under the assumption that the foreigner would have stayed for one additional year had there been no adverse labor market conditions in Germany. — d) Sum of all quarters. — e) Col. (9) = col. (2) + col. (4) + col. (5) + col. (7) + col. (8)/3. — f) Col. (10) = col. (9)/[col. (2)/col. (3) × 100 + col. (4) + col. (5) + col. (7)] × 100.

level in June 1969.[6] After reaching 2.6 million persons in 1973, the number of foreign workers dropped to less than 2 million persons.

These declines were not brought about simply by an expulsion of (unemployed) foreigners. Foreign workers coming from an EC-member country cannot be prohibited from working in Germany on account of the freedom of movement of labor within the Common Market.[7] The number of non-EC-workers is under governmental control. An immigration stop has been in effect since 1973 but the immigration of family members of guest workers living in Germany has been allowed to continue. The extent to which unemployment can be exported by an expulsion of unemployed foreigners mainly depends on how long the foreigner has been in Germany. The ruling established during the 1967 recession required that unemployed foreigners leave Germany if their residence permit expired and if they had insufficient means of support — such as a claim to unemployment compensation. Laws enacted in 1978/1979 now entitle a foreigner to an unlimited residence permit if he has worked for at least five years in Germany without interruption. Thus the effectiveness of an active remigration policy was reduced substantially, since the number of non-EC-workers who are entitled to residence permits increased. Moreover the immigration stop could mitigate the remigration because it induces reluctance to return home temporarily.

A guess of remigration induced by labor market conditions can be obtained by estimating the following non-linear outflow equation for non-EC-workers (seasonal dummies are not reported):

$$(2) \qquad OUT_t^{NEC} = \underset{(4.2)}{82.780} - \underset{(2.5)}{8.195}\, UR_t^{NEC} + \underset{(2.5)}{11.715}\, UR_t + \underset{(5.7)}{0.0374}\,(1 - \underset{(3.4)}{0.651}\, D) \cdot NEC_{t-1} \qquad DW = 1.554$$

where OUT^{NEC} and NEC denote the outflow and the number of non-EC-workers, respectively, and UR^{NEC} represents a weighted unemployment rate for these countries. D is a dummy variable which is one if the immigration stoppage is in operation and zero otherwise. For the time period 1962 I - 1973 III remigration in each quarter amounted to 3.7 percent of the number of non-EC-workers. After the immigration stop was put into effect this figure declined to 1.3 percent. An estimate of an induced outflow is calculated by the difference of fitted values of

[6] Compared with this 30 percent reduction, the decline in employment among German workers was only about 4 percent for the same period.

[7] This ruling basically concerns the Italian workers with a share in the total of foreign workers decreasing from 44 percent to 16 percent in the time period 1960 to 1980.

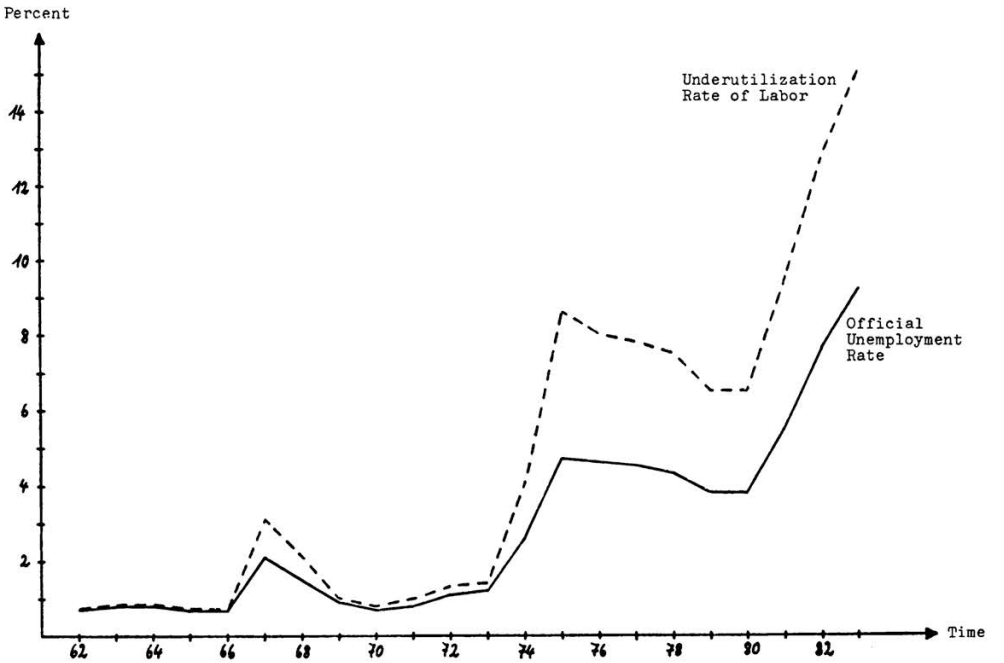


Figure 4: Official and Corrected Unemployment

equation (2) with $\overline{UR}$ and $UR = 1.0$, respectively. There are no sufficient data on how long these foreigners would have stayed in Germany otherwise, but casual information indicates that one year might be a realistic number to use for calculations. Hence, each person is counted as unemployed four times and the results are reported in columns (6) and (7).[8] Again it should be emphasized that these figures are approximate at best and can only serve as a rough guide.

Short-Time Workers

One source of variations in the utilization of labor is due to over-time and short-time work. Financially supported by the labor office, short-time work serves as an instrument to avoid unemployment.[9] In the sixties it played a minor role, but its importance as a policy instrument has increased. Column (8) of table 1 reports yearly averages of short-

[8] These figures are not balanced with the influx of non-EC-workers since it is assumed that this influx would have taken place anyway. During the period when the immigration stop was in operation an influx was permitted mainly on social grounds such as uniting families.

[9] See *König* and *Franz* (1978) for a description.

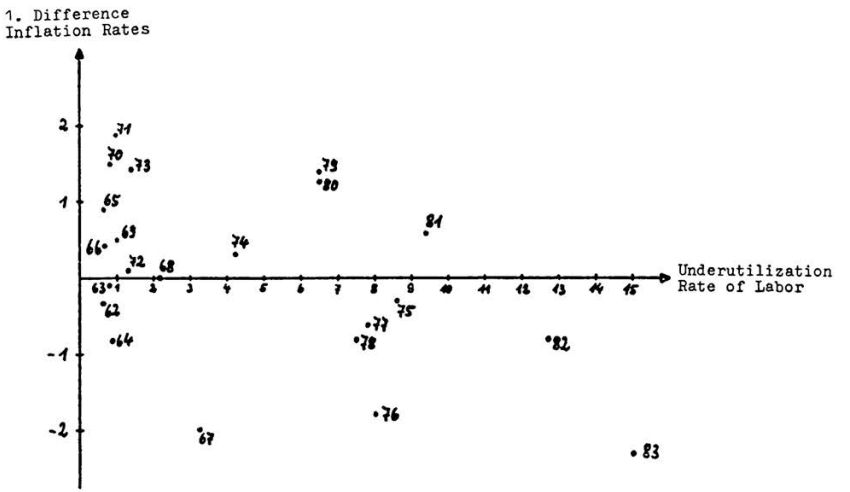


Figure 5: Non-Accelerating Inflation Rate of Underutilized Labor

time workers. Information on the duration of short-time work is more difficult to obtain because the Labor Office publishes duration data only since 1976 and groups them into (partly open) categories. Averaging these numbers, one third of a year seems a realistic estimate for the duration of short-time work. Hence, one third of the numbers in column (8) represents the contribution of short-time work to unemployment.

Underutilization of Labor

The outcome of this attempt to obtain a more adequate picture of joblessness in the German labor market is summarized in column (10) of table 1 and illustrated by figure 4. The correction results in considerably higher "unemployment" than the officially announced rate beginning in 1974. Even though several other aspects of underutilization, such as fluctuations in weekly hours worked by full time workers, have not been taken into account, the figures indicate the existence of an upper limit whose value is dependent, however, upon the arbitrarily chosen rate of unemployment. Obviously, the difference would be smaller if a two percent employment rate is called normal rather than the one percent value employed in these calculations.

The underutilization rate of labor, however, provides little if any additional explanatory power in comparison to the NAIRU. Figure 5 imitates the scatter diagram of figure 3 with the underutilization rate of labor substituted for the official unemployment rate in the calculation of the NAIRU.

The next section develops a theoretical basis with testable hypotheses of the behaviour of inflation and unemployment over the past ten years.

IV. The Deteriorating Inflation — Unemployment Tradeoff: Theoretical Considerations

From the preceding sections it is clear that the stable inflation — unemployment tradeoff prior to 1974 has undergone several changes. Among others three hypothetical explanations of this phenomenon are

(i) that such changes are the result of supply side shocks such as energy price movements and the productivity slowdown specified and tested empirically by *Gordon* (1982) for the U.S. and by *Franz* (1982 c, 1983 b) for the FRG;

(ii) the notion hypothesized by *Friedman* (1977) that, due to institutional rigidities, increasing volatility of (relative) price changes causes a reduction in the efficiency of the price system for coordinating economic activity. Since the relevant information for producers is on relative prices a more volatile rate of general inflation makes it harder to extract relative prices signals from absolute prices. Thus, "it seems plausible that the average level of unemployment would be raised by the increased amount of noise in market signals"[10];

(iii) the new classical view that only unanticipated changes in aggregate demand can affect real output. Within the framework specified by *Lucas* (1973), a reaction in real output is inversely related to the inflation variability. Hence, a deteriorating output-inflation tradeoff is connected to the increased variability of inflation. This view has been recently tested for the U.S. by *Froyen* and *Waud* (1983) but was not supported by their empirical findings.

This study concentrates on the importance of arguments (i) and (ii) but leaves hypothesis (iii) on a research agenda. One possible way for a model specification is to set up a wage and price equation. Following the arguments outlined by *Gordon* (1982) both equations are then condensed to one reduced-form equation for inflation.

Because the theoretical model is familiar and has been presented elsewhere[11] the following description can be extremely brief. To begin with the price equation, profit-maximizing firms are assumed to face a

[10] *Friedman* (1977), 467.
[11] See e. g. *Gordon* (1982), *Nordhaus* (1972), *Franz* (1982 c, 1983 b).

Cobb-Douglas production function with technical progress occurring at rate ϱ and labor services (L), capital (K), and imports (M) as input factors,

$$X = AL^{\alpha} K^{\beta} M^{\gamma} e^{\varrho t} , \tag{3}$$

where X denotes physical output and A represents a time-invariant technological shift parameter. The demand for the firms' product is assumed to be log-linear in price (p) and income (Y), i.e.

$$X = Bp - \psi_1 Y^{\psi_2} , \tag{4}$$

where B denotes a constant shift parameter. The objective of the firm is to maximize profits Q.

$$Q = [p/(1 + v)] \cdot X - w \cdot L - uc \cdot K - m \cdot M . \tag{5}$$

In this equation w is the nominal gross hourly wage rate, uc the user costs of capital, m the price of imported goods, and v the indirect tax rate. For the sake of notational convenience define $p' = p/(1 + v)$. The profit maximizing, long-run price is given by:

$$p' = C_1 Y^{\psi_2 (1-\alpha-\gamma-\beta)\Theta} \left(\frac{\alpha}{w}\right)^{-\alpha\Theta} \left(\frac{\beta}{uc}\right)^{-\beta\Theta} \left(\frac{\gamma}{m}\right)^{-\gamma\Theta} e^{-\varrho t\Theta} \tag{6}$$

$$\text{where} \quad \Theta = [\Psi_1 + (1 - \Psi_1) \cdot (\alpha + \beta + \gamma)]^{-1} \quad \text{and}$$

$$C_1 = [B^{\alpha+\beta+\gamma-1} A \left(1 - \frac{1}{\Psi_1}\right)^{\alpha+\beta+\gamma} - \Theta .$$

Assuming constant returns to scale Θ is unity and the right hand side expression of (6) reduces to:[12]

$$p' = C_2 \left(\frac{\alpha}{w}\right)^{-\alpha} \left(\frac{\beta}{uc}\right)^{-\beta} \left(\frac{\gamma}{m}\right)^{-\gamma} e^{-\varrho t} \tag{7}$$

$$\text{where} \quad C_2 = A \left(1 - \frac{1}{\Psi_1}\right)^{-1} .$$

Rearranging terms and reformulating (7) in growth rates results in the following expression:

$$\hat{p} = \alpha \hat{w} + \beta \widehat{uc} + \gamma \hat{m} - \varrho + \hat{v} , \tag{8}$$

where a hat denotes a growth rate and $\hat{v} \equiv \widehat{(1 + v)}$. The inflation rate $\hat{p}$ is determined by the growth rates of wages, user costs, and import

[12] Studies for Germany which estimate returns to scale wind up with somewhat mixed results. Some of them obtain increasing returns, but most of them cannot reject the hypothesis of constant returns to scale assumed here. See e.g. *Oppenländer* (1980) and *Schalk* (1976).

prices (weighted by their elasticities of production), by the technical progress rate and the change in direct taxes. Productivity does not appear in the equation although it may enter by assuming that the technical progress affects prices via the trend in productivity.[13] A one percent increase in the wage rate w relative to the productivity trend raises p by α percent. Hence, $\hat{w}$ in (8) is replaced by $(\hat{w} - \hat{\pi}^T)$, where π^T denotes the productivity trend. Cyclical deviations from π^T are supposed not to affect long-run pricing but may be more important for short-run pricing, although empirical studies do not give strong support for this hypothesis.

This substitution allows equation (8) to be written as:[14]

$$\hat{p} = \alpha(\hat{w} - \hat{\pi}^T) + \beta\,\widehat{uc} + \gamma\,\hat{m} + \hat{v} \tag{9}$$

$$\text{with} \quad \alpha, \beta, \gamma > 0 \quad \text{and} \quad \alpha + \beta + \gamma = 1 \ .$$

The equation for wage inflation is specified as follows [Franz (1982 c, 1983 b)]:

$$\hat{w} = b_0 + b_1\,\hat{p}^* + b_2\,V + b_3\,\hat{s} \qquad b_i > 0, i = 1, \ldots, 3 \tag{10}$$

$\hat{p}^*$ denotes the average expected consumer price inflation rate prevailing during the period of the wage contract, i.e., mostly one year. The symbol s denotes employers' contributions to social security which are assumed to be proportional to wages w, V is a measure of labor market tightness, $\hat{s}$ stands for the growth rate of $(1 + s)$, and all other symbols retain their prior meaning. Following *Hines* (1972), in the absence of adequate data on vacancies the rate of change of the employment rate together with the rate itself serve as a joint proxy for excess demand for labor.[15]

$$V = c_0 + c_1\,UR + c_2\,\widehat{UR} \qquad \text{with} \quad c_1, c_2 < 0 \ . \tag{11}$$

Inserting eq. (11) into (10) and (10) into (9) and rearranging terms gives:

$$\hat{p} = a_0 + a_1\,\hat{p}^* + a_2\,UR + a_3\,\widehat{UR} + a_4\,\hat{s} - \hat{\pi}^T + a_5\,(\widehat{uc} - \hat{p}) + a_6\,(\hat{m} - \hat{p}) + a_7\,\hat{v} \ , \tag{12}$$

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[13] See *Gordon* (1975), 618.

[14] Note that p is the gross price including indirect taxes; then $p/(1 + v)$ is the net price.

[15] Note that the unemployment terms are *proxies for vacancies*. Eq. (11) should not be interpreted that — "given vacancies" — UR is universely related to $\widehat{UR}$. The same arguments hold for eq. (12).

where $a_0 = b_0 + b_2 c_0$ $\quad a_4 = b_3 > 0$

$a_1 = b_1 > 0$ $\quad a_5 = \beta/\alpha > 0$

$a_2 = b_2 c_1 < 0$ $\quad a_6 = \gamma/\alpha > 0$

$a_3 = b_2 c_2 < 0$ $\quad a_7 = 1/\alpha > 0$.

In (12) the user cost and materials cost variables are defined in real rather than in nominal terms. Since the parameter $a_2/(1 - a_1)$ determines the slope of the augmented Phillips curve this formulation makes clear that the necessary condition for the NAIRU to be independent from $\hat{p}$ is that a_1 $(= b_1)$ equals unity. The productivity trend term enters the equation with a unitary coefficient as well as the wage variable (before being replaced by eqs. 10 and 11). Therefore a slowdown in trend productivity growth does not generate additional inflation if the wage inflation slows down pari passu.

Taking first differences eq. (12) offers an explanation why inflation may accelerate (i.e., $\hat{p} - \hat{p}_{-1} > 0$) despite in increase of the unemployment rate. This may be caused by

— a change in the *expected* inflation rate (i.e., $\hat{p}^* - \hat{p}^*_{-1} > 0$),

— exogenous relative supply shifts such as oil price shocks [i.e., $(\hat{m} - \hat{p}) - (\hat{m} - \hat{p})_{-1} > 0$], or

— changes in government policy variables such as higher indirect taxes ("self-inflicted wounds").

To calculate the NAIRU it is necessary to decide upon the exogenity of the shock variables. We treat $\hat{s}$ and $\hat{v}$ as exogenous as well as the portion of the user costs and the materials cost increases which exceeds the inflation rate $\hat{p}$. The argument is that these exogenous shocks should not be offset by demand management raising unemployment. Therefore the NAIRU must be corrected for these shocks. Under these assumptions, which will be discussed later, the "no-shock" NAIRU (*UNS*) is given by:

(13) $$UNS = [\hat{p}_0 (1 - a_1) + \hat{\pi}^T - a_0]/a_2$$

Assumptions: $\hat{p} = \hat{p}^*$

$$\widehat{uc} - \hat{p} = \hat{m} - \hat{p} = \hat{v} = \hat{s} = \widehat{UR} = 0 \ .$$

If $a_1 = 1$ the "no-shock NAIRU" is independent from a "tolerable" inflation rate denoted by $\hat{p}_0$. *Different* assumptions about the exogenity of shock yield different no-shock NAIRU's and, therefore, different values of the lower limit to which unemployment can be reduced through fiscal demand management without facing an accelerating in-

flation rate. If total growth of user costs and materials costs is assumed to be exogenous (i.e., if the qualifying restriction is $\widehat{uc} = \hat{m} = 0$), then the non-shock NAIRU is given by:

$$UNS' = [\hat{p}_0 (1 - a_1 + a_5 + a_6) + \hat{\pi}^T - a_0]/a_2 \tag{13a}$$

For any given tolerable inflation rate $\hat{p}_0 > 0$, UNS' is smaller than UNS ceteris paribus (note that $a_5, a_6 > 0$, $a_2 < 0$). This is due to the fact that in UNS' the entire growth of uc and m is not subject to demand policy (since it is an exogenous shock) while in UNS only that part of $\widehat{uc}$ and $\hat{m}$ which exceeds $\hat{p}$ should not be offset by demand policy.

A crucial variable determining UNS is $\hat{\pi}^T$, the trend productivity growth which serves as an intermediate explanatory variable. The next obvious and relevant question is: what determines the productivity slowdown? A tentative hypothesis is that capital formation had some impact on the productivity slowdown. As a consequence of the reconstruction phase after World War II the vintage of the German capital stock was rather young during the sixties and incorporated higher technical progress than in other countries such as the U.K. But this effect tended to fade away in the seventies supported by a decline in investment activity beginning in the mid-seventies and the extraordinary spurt in raw material prices which rendered a part of the capital stock obsolete.[16] We therefore shall replace the trend productivity growth variable by a variable which captures the decreasing modernity of the German capital stock.

Finally, Friedman's argument that uncertainty may lead to a higher natural rate of unemployment must also be tested. Two aspects seem to be important. First, *Friedman* emphasizes that increased variability of inflation "clearly" lowers economic efficiency, but it is "less clear" what the effect is on recorded unemployment.[17] The consequences outlined seem to him "plausible" and "very likely", but he does not argue that these results are the necessary implications of a theory. In fact, within the framework of a general equilibrium model, *Azariades* (1981) has shown that the relationship betweeen price uncertainty and the natural rate of unemployment is theoretically ambiguous.

The second point concerns the relationship between inflation uncertainty and inflation variability. *Friedman* treats the terms variability and uncertainty as roughly synonymous, a procedure which is adopted in several empirical studies.[18] Variability is, however, a good measure

[16] See *Bruno* (1981) for a detailed study which includes several countries (among others Germany).
[17] *Friedman* (1977), 466.

of unpredictability only if the underlying stochastic structure can be reasonably well characterized by a constant mean plus some random disturbance.[19]

This study adopts a slightly different approach and limits the question to whether increased inflation variability can contribute to an explanation of the shift in the NAIRU as revealed in figure 3. Since the relevant information which the price system should provide concerns relative prices rather than absolute prices, this broadcast on relative prices — to put it in *Friedman's* terms — might be jammed by noise coming from a higher variance of relative price changes which make it more difficult for a producer to extract and predict the relevant relative prices. Moreover, if prices are downward rigid, a higher variance of inflation rates for different commodities tends to increase the general inflation rate as figure 6 suggests. Inflation rates ω of individual commodities are distributed normally according to the density function $f_0(\omega \mid \bar{\omega}_0, \sigma_0)$. An increasing variance σ_1^2 will not affect the mean of the density function if increasing and decreasing inflation rates cancel out. Completely offsetting may require negative inflation rates. However, if prices are rigid downward inflation rates may not always completely offset one another and the mean of the density function may shift to the right. Whatever the reason for downward rigidities, this argument asserts that the variances of relative price changes can cause a higher general inflation rate and thus a higher NAIRU, ceteris paribus.

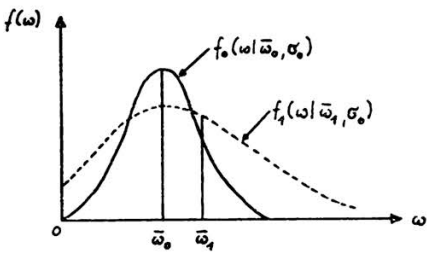

Figure 6: Effects of a Higher Variance of Relative Prices Changes on the Mean of the Inflation Rate

A problem with this argument is that it can work in the other direction as well, i.e., that higher inflation rates cause a greater relative price variability due to adjustment costs and the influence of unanticipated inflation rates. The latter argument stems from the hypothesis that

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18 See e. g. *Mullineaux* (1980).

19 See *Klein* (1975) for a more detailed analysis. *Cukierman* and *Wachtel* (1982) conclude, therefore, that "a natural measurement of inflation uncertainty is the variance of the forecast error of the rate of inflation since it measures the unavoidable dispersion of actual inflation around what this inflation had been expected to be in the previous period" (p. 510).

anticipated inflation is neutral in its effects across local markets because it is reflected equally in all prices, whereas unanticipated inflation leads to different price changes across markets depending on the ability of producers to distinguish between permanent and transitory shocks.[20]

Empirical evidence for Germany suggests that unanticipated inflation affects relative price variability as the studies by *Fischer* (1982) and *Franz* (1984) show. But it should be emphasized that these results may be sensitive to the measures of relative price dispersion and to the data basis because findings by *Gahlen* (1982) conclude that above average inflation rates do affect relative price variability. In this paper, however, only the role of unanticipated inflation is considered.

Summing up, the following two-equation system has to be estimated:

$$\hat{p} = a_0 + a_1\hat{p}^* + a_2\,UR + a_3\,\widehat{UR} + a_4\,\hat{s} + a_5\,(\widehat{uc} - \hat{p}) + a_6\,(\hat{m} - \hat{p}) + a_7\,\hat{v} + a_8\,g + a_9\,\sigma^2 \tag{14a}$$

$$\sigma^2 = b_0 + b_1\,(\hat{p} - \hat{p}^*) \tag{14b}$$

where g measures the vintage of the capital stock and σ^2 denotes the variance of relative price changes, and all other symbols retain their prior meaning.

V. Empirical Results

Before presenting the empirical findings some brief remarks on data construction and methodology are in order.

In the absence of a time series on inflationary expectations a proxy for $\hat{p}^*$ must be constructed. Employing an ARIMA model the inspection of the underlying stochastic process of $\hat{p}$ reveals that this time series has an autocorrelation function which indicates that $\hat{p}$ is non-stationary but its first differences do not convey significant non-stationarities. The partial autocorrelation function of the differenced series entails only weak partial autocorrelation coefficients of order higher than one. We therefore use an AR (1) process of $\hat{p}$ but recognize that the parameters of the expectation formation scheme may vary over time so that the application of the Kalman-filter technique seems to be appropriate. The coefficient associated with the lagged inflation rate varies from 0.935 (1966 I) to 0.966 (1974 I) with a mean of 0.949.

Also problematic is the use of quarterly data calculated as four-quarter overlapping changes. Eq. (14) and the application of the AR (1)

[20] For recent surveys on this subject see e. g. *Fischer* (1982), *Gahlen* (1983).

process imply that price changes are regressed on a one-quarter lagged price change term, i.e., the dependent and righthand variables contain three one-quarter changes in common leading the coefficient of $\hat{p}^*$ to be upward biased and to absorb much of the explanation that may be properly attribute to other variables. Following *Gordon* the $\hat{p}^*$ variable is therefore replaced by $\hat{p}^*_{-4}$.[21]

Unemployment is also a crucial variable. We shall experiment with three measures: the officially published unemployment rate, the underutilization rate discussed in section III, and a Perry-type unemployment rate. The latter measure recognizes the fact that large and persistent differences in the labor supply offered by individuals in different age-sex groups affect the unemployment rate's ability to indicate labor market tightness. Using the method described by *Perry* (1970), a weighted unemployment rate is constructed to take into account the age and sex differentials in labor force participation and hours worked. Of course, this unemployment rate is lower than the official rate when youth unemployment is relatively high because youth unemployment is given a relatively small weight.[22]

The modernity of special equipment is measured by the ratio of the depreciated to the non-depreciated value of the capital stock. This percentage indicates to what extent the existing capital equipment still offers production capacities. It serves as an indicator for the quality and technological standard of the capital stock. This time series has been recently published by the *Deutsches Institut für Wirtschaftsforschung* (1983). It peaks in 1961/62 at 68 percent and decreases to 56 percent in 1983. The crudeness of this measure is obvious since it does not entirely cover the growing share of leasing contracts or possible obsolescence of capital equipment due to exploding energy prices. In the regression, the modernity of capital stock is represented by g, which is equal to the modernity ratio (as defined above) minus 0.66, the maximum value from the sample period (1966 I). By representing modernity in this way, the role which decreasing modernity (compared to the mid-sixties) has played in causing shift in the NAIRU can be tested.

The definitions of the other variables, although in themselves problematic are well-known. The user costs of capital are defined as the price of investment goods times the sum of the interest rate and depreciation rate. The inflationary supply shock variable is the weighted sum of the inflation rates of agricultural products and imported raw

[21] See *Gordon* in a comment on *Franz* (1982 c), 85.

[22] For a study on youth unemployment in Germany see *Franz* (1982 b). Both unemployment figures are yearly averages and converted into quarterly data by using the quarterly figure for the official unemployment rate.

materials. We thus take into account the sharp increase in food prices 1972/73 and 1975 due to crop shortages. The exchange rate growth of the DM (in various definitions), the changes in the contributions to social security, in indirect taxes and in unemployment were found to be insignificant and therefore are omitted. Finally, the variance of relative price changes is defined as $\sigma_t^2 = \sum_{i=1}^{9} z_i (\hat{p}_{it} - \hat{p}_t)^2$, where z_i denotes the time invariant weights and $\hat{p}_{it}$ the inflation rate of the i-th category of consumption goods from the nine categories considered.[23]

The estimation covers the period 1966 I to 1983 III. Since the residuals of the two equations may be correlated eqs. (14a) and (14b) are estimated by 3 *SLS* (t-values in brackets):

(15a)
$$\hat{p} = \underset{(1.2)}{1.0411} + \underset{(8.3)}{0.8439}\,\hat{p}^*_{-4} - \underset{(3.6)}{0.5337}\,UR + \underset{(0.4)}{0.0088}\,(\widehat{uc} - \hat{p})$$
$$+ \underset{(1.3)}{0.0200}\,(\hat{m} - \hat{p}) - \underset{(3.4)}{25.4154}\,g + \underset{(0.7)}{0.8376}\,\sigma^2$$
$$\bar{R}^2 = 0.721 \qquad DW = 1.454$$

(15b)
$$\sigma^2 = \underset{(5.8)}{0.3798} + \underset{(1.6)}{0.3484}\,(\hat{p} - \hat{p}^*) + \underset{(4.3)}{0.8191}\,D + \underset{(2.1)}{0.5820}\,\varepsilon_{-1}$$
$$\bar{R}^2 = 0.572 \qquad DW = 1.989$$

Eqs. (15a) and (15b) differ slightly from the equations developed in the theoretical section. The variables $\widehat{UR}$, $\hat{s}$ and $\hat{v}$ turned out to be significant and are therefore disregarded. Eq. (15b) is corrected for first-order autocorrelation (ε is the residual) and a dummy variable D is added to capture the extremely high peak in 1973 IV, i.e., D is unity for this time period and zero otherwise.

Taken at face value, the results indicate that the variance of relative price changes has the theoretically expected positive impact on inflation but lacks strong significance. This does not mean, however, that σ^2 has no effect on unemployment at all. Rather, in the present context we found no evidence that this variability shares a major responsibility for the shift in the NAIRU. Other than the crude measure of σ^2, the smaller variability of relative price changes in Germany compared with other countries cited by Friedman could be an explanation for this result.

In this study we therefore neglect this aspect and elaborate on the Phillips curve. A further aspect of this problem is that several explana-

[23] For more details the reader is refered to *Franz* (1985).

tory variables may affect inflation with the time lags. The Almon technique is used to account for this possibility and to allow for some flexibility in the lag distribution despite of the arbitrariness of this procedure with respect to the degree of the polynomial and the end-point constraints, for example.

$$(16)\qquad \hat{p} = \underset{(3.8)}{1.4470} + \underset{(7.5)}{0.7754}\hat{p}^*_{-4} - \underset{(3.9)}{0.3802}\,UR + \underset{(2.4)}{0.0877}\,AL\,(2,8)\,(\hat{m} - p)$$

$$- \underset{(4.1)}{26.2919}\,AL\,(2,8)\,g + \underset{(2.0)}{0.0221}\,AL\,(2,8)\,(\widehat{uc} - \hat{p})$$

$$\bar{R}^2 = 0.8704 \qquad DW = 1.7708$$

The symbol $AL\ (2,8)\ x$ means that the variable x is entered into the equation as a second-degree polynomial distributed lag on 7 lagged values (plus the current value) with no end-point constraint. The listed coefficient denotes the sum of all eight weights and the associated t-ratio of the sum.

All coefficients have the sign theoretically expected and are highly significant. The coefficient associated with $\hat{p}^*_{-4}$ is far below unity, indicating that the NAIRU is not independent from inflation. If we allow for a three percent tolerable inflation rate and restrict the degree of modernity to the level at the beginning of the sample period (i.e. $g = 0$), the value of the no-shock NAIRU[24] is 2.0 percent, which is approximately the NAIRU prevailing during the time period 1966 to 1973, as can be seen by inspection of the scatter diagram in figure 3. Had there been no deterioration of the vintage structure of capital equipment this 2.0 percent would be the no-shock NAIRU in the eighties, as well. However, between 1966 and 1983 the degree of modernity dropped by one percentage point.[25] The relevant question is, of course, to what extent this deterioration can be reversed by increased investment activity during an economic recovery. For instance, if an upswing initiated by demand management fails to stimulate investment, then the current no-shock NAIRU would be 8.9 percent.[26] However, this assumption is quite unrealistic. A more appropriate figure may be obtained for a no-shock NAIRU at the 1973 vintage structure of capital equipment. This calculation hypothetically erases the breakdown in investment after 1973 and yields a no-shock NAIRU of 4.1 percent (the decline in modernity from 1966 to 1973 is three percentage points).

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[24] That means for $\hat{m} - \hat{p} = \widehat{uc} - \hat{p} = 0$.

[25] The degree of modernity in 1966 and 1983 is 0.66 and 0.56, respectively.

[26] For $\hat{p} = \hat{p}^*$ and $\widehat{uc} - \hat{p} = \hat{m} - \hat{p} = 0$ and a tolerable inflation rate of 3 percent we obtain from eq. (16): $UNS - [3 \cdot (1 - 0.7754) - 1.4470 + 26.2919 \cdot (-0.1)]/(-0.3802) = 8.9$.

Parenthetically we note that this 4.1 percent value of the no-shock NAIRU closely agrees with an earlier study that differs from this paper in several aspects such as sample period and methodology.[27] That study concluded that the productivity slowdown contributed significantly to the shift of the Phillips curve. In this paper we found that this variable is determined by the modernity of capital equipment. Whatever the reasons for the decline in investment in the seventies were — such as homemade disinflation policies and/or supply shocks initiated by OPEC — stimulating investment will probably cause the Phillips curve to shift to the left although it is not realistic to expect the Phillips curve to return to the relationship prevailing in the sixties.

We have reestimated the equations using the other two measures of unemployment outlined before. Given space limitations we briefly review the results with some emphasis on the underutilization rate discussed in section III. Using this measure of joblessness all variables retained their significance and the coefficients changed only negligibly. For the 1966 and 1973 vintage structure of capital equipment, the value of non-shock NAIRU based on this definition amounts to 5.0 and 8.6 percent, respectively. The variability of relative price changes was still insignificant. Replacing the unemployment rate by the measure suggested by *Perry* (1970) was unsuccessful since this variable was not significant even at modest significance levels.

The reader is reminded of the limitations to this approach which have been mentioned. In addition, a major shortcoming is that several hypotheses have been tested jointly: (i) the ratural rate hypothesis, (ii) the theoretical model of wage and price formation, and (iii) the formation of inflationary expectations. All of these hypotheses are highly debatable.

VI. Conclusion

This paper reviewed German experience with inflation and unemployment in the past decade, primarily focussing on two points: First, the extent to which officially measured unemployment understates actual joblessness was investigated. In order to obtain a rough idea of the underutilization of labor the official unemployment rate was adjusted by including estimates of discouraged workers and short-time work, for example. As a result, the actual underutilization rate of labor for 1983 was estimated at 15 percent, compared with the 9 percent official measure.

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[27] See *Franz* (1983 b, 1982 c).

The second point of investigation was related to a scatter diagram which revealed that the non-accelerating inflation rate of unemployment (NAIRU) has shifted considerably to the right since 1973. The empirical findings of this study suggest that supply shocks such as the spurt in raw material prices and, more importantly, the deteriorating age structure of capital equipment in Germany were responsible for this shift. On the other hand, the variability of relative price changes as hypothesized by *Friedman* did not significantly contribute to the change in the NAIRU. A final relevant question is to what extent unemployment can be reduced today without facing accelerating inflation. A tentative answer is offered by the calculation of the no-shock NAIRU at the 1973 vintage structure of the German capital stock. We found a 4.1 percent figure would be a reasonable "guess-estimate". However, this estimate must be balanced against several caveats which were outlined in the paper.

Summary

The German experience with inflation and unemployment in the past decade is reviewed, primarily focussing on two points. First, the extent to which officially measured unemployment understates actual joblessness is investigated. As a preliminary result, the actual underutilization rate of labor for 1983 is estimated at 15 percent, compared with the 9 percent official measure. The second point concerns the non-accelerating inflation rate of unemployment (NAIRU) in FRG. The empirical findings suggest that supply shocks such as the spurt in raw matrial prices, and the deteriorating age structure of capital equipment are responsible for a shift of the NAIRU.

Zusammenfassung

Der Beitrag beschäftigt sich mit zwei Aspekten. Zunächst wird versucht, eine umfassendere quantitative Beschreibung der Unterauslastung des Faktors Arbeit vorzunehmen, indem z. B. entmutigte Arbeitskräfte, Kurzarbeit und eine unfreiwillige Remigration von Nicht-EG-Gastarbeitern berücksichtigt wird. Eine Schätzung ergibt für 1983 eine Unterauslastungsquote von 15 Prozent im Vergleich zu einer 9prozentigen offiziellen Arbeitslosenquote. Zweitens werden Bestimmungsgründe für den Verlauf und die Verschiebung der Phillipskurve getestet. Mit einigen Vorbehalten läßt sich eine auch langfristig negativ verlaufende Phillipskurve konstatieren, deren Rechtsverschiebung u. a. durch den geringeren Modernitätsgrad des Kapitalbestandes verursacht wurde.

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Sozialökonomische Analyse der Sozialversicherungswahlen

Problemgeschichte, Struktur und Funktionen der Wahlen zur Selbstverwaltung im Sozialen Sicherungssystem unter besonderer Berücksichtigung der Gesetzlichen Krankenversicherung

Von

Carl Großhaus und Reinold Herber

Nicht-Markt-Ökonomik, Band 5

175 S. 1985. DM 98,—

Seit dem Jahre 1883 ist die Selbstverwaltung fest im System der Gesetzlichen Krankenversicherung institutionalisiert; sie hat somit eine lange Geschichte hinter sich, die zu einer Problemsichtung herausfordert. Die Selbstverwaltung legitimiert sich durch Wahlen und wird durch diese gesteuert. Obwohl es sich bei den Sozialversicherungswahlen um eines der ältesten sozialpolitischen Wahlsysteme handelt, sind im Bereich der wissenschaftlichen Sozialpolitik bislang nur wenige Ansätze zu einer methodischen Analyse unternommen worden. Dies erklärt sich vor allem durch ein Theoriendefizit, das es nicht ermöglichte, die Probleme adäquat zu durchleuchten. In jüngerer Zeit sind nun neue Ansätze zur Theorie der Wahlen entstanden, die ökonomische Denkinstrumente einsetzen. Diese methodische Vorgehensweise versteht sich als Bestandteil der Neuen Politischen Ökonomie. Die vorliegende Schrift will zu dieser neuen Arbeitsrichtung einen Beitrag leisten. Die Analyse konzentriert sich insbesondere auf den Problemkomplex der Entscheidungsstrukturen innerhalb der Gesetzlichen Krankenversicherung, da hier auf vielfältiges statistisches Material zurückgegriffen werden kann.

Aus dem Vorwort

DUNCKER & HUMBLOT / BERLIN

Industriebetriebslehre in Wissenschaft und Praxis

Festschrift für Theodor Ellinger zum 65. Geburtstag

herausgegeben von

Hartmut Kreikebaum · Günter Liesegang
Siegfried Schaible · Horst Wildemann

in Verbindung mit

Hartwig Bechte · Werner Gitt · Reinhard Haupt
Armin Schirmer · Karl-Heinz Schüring
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318 S. 1985. Lw. DM 118,—

Theodor Ellinger, geb. am 14. 6. 1920 in Stuttgart, studierte an der dortigen TH Maschinenbau und Wirtschaftswissenschaften. Nach dem Diplom in beiden Fächern wurde er 1950 zum Dr.-Ing. (in Stuttgart) und 1953 zum Dr. rer. pol. (in Tübingen) promoviert. 1958 habilitierte er sich bei Karl Hax in Frankfurt für Betriebswirtschaftslehre. 1960 nahm er den Ruf auf das Ordinariat für Betriebswirtschaftslehre an der Universität Mainz an. Seit 1967 ist er als Nachfolger von Erich Gutenberg Direktor des Industrieseminars der Universität zu Köln. Th. Ellingers spezielle Arbeitsgebiete sind die Industriebetriebslehre, die Produktions- und Kostentheorie sowie Operations Research. Auf den genannten Gebieten hat er namhafte Veröffentlichungen vorgelegt... Die vorliegende Festschrift wird von seinen habilitierten Schülern herausgegeben, die im In- und Ausland als Hochschullehrer tätig sind. Hinzu kommen Beiträge von ehemaligen Mitarbeitern und Freunden des Jubilars, die in der Praxis tätig sind. Die Originalbeiträge greifen jeweils einen Problembereich aus einem der Arbeitsgebiete Theodor Ellingers auf.

DUNCKER & HUMBLOT / BERLIN

Hans-Werner Sinn

Kapitaleinkommensbesteuerung

Eine Analyse der intertemporalen, internationalen und intersektoralen Allokationswirkungen.
1985. XIV, 349 Seiten. ISBN 3-16-344827-5 Ln. DM 198.–

Dieses Buch bietet einen theoretischen Vergleich der in den OECD-Ländern praktizierten Systeme der Kapitaleinkommensbesteuerung. Es behandelt vor allem unterschiedliche Grade der Integration zwischen persönlicher Einkommensteuer und Körperschaftsteuer und unterschiedliche Formen steuerlicher Abschreibungsregeln, doch auch eine Reihe anderer Aspekte der Steuersysteme werden erfaßt.
Der Vergleich wird im Hinblick auf die ökonomischen Allokationswirkungen der Besteuerung wie z.B. die Beeinflussung des internationalen Kapitalverkehrs, der Industriestruktur und des Wirtschaftswachstums vorgenommen. Am Rande berührt er auch das Problem der Steurinzidenz. Als Alternativen zu den existierenden Steuersystemen werden verschiedene Reformmöglichkeiten erörtert, und es wird ein neues System der Kapitaleinkommensbesteuerung vorgestellt, das unter Allokationsgesichtspunkten als sehr attraktiv erscheint und ohne radikale Gesetzesänderungen realisiert werden kann.

Inhaltsübersicht:

J.C.B. Mohr (Paul Siebeck)
Tübingen

Die Finanzierung mittelständischer Unternehmungen in Deutschland

1. Bayreuther Symposium für Betriebswirtschaft
Bayreuth, 3. - 4. März 1983

Herausgegeben von

Peter Rütger Wossidlo

382 S. 1985. DM 68,—

Der vorliegende Tagungsband enthält die Ergebniszusammenfassungen sowie die überarbeiteten Vorträge, die anläßlich des 1. Bayreuther Symposiums für Betriebswirtschaft gehalten wurden. Unter dem Generalthema „Zur Lage der Mittelstandsfinanzierung in Deutschland" hatte sich auf Einladung des Betriebswirtschaftlichen Forschungszentrums für Fragen der mittelständischen Wirtschaft e. V. an der Universität Bayreuth ein Kreis hervorragender Sachverständiger aus Wirtschaft, Wissenschaft und Politik eingefunden. Anlaß war die gefährliche Verschlechterung der Eigenkapitalsituation der deutschen Wirtschaft, die im besonderen die mittelständischen Unternehmungen betrifft. Einer breiten Öffentlichkeit sollte die Möglichkeit geboten werden, einen fundierten Einblick in eine Entwicklung zu gewinnen, die lange genug übersehen oder bagatellisiert wurde. Dem Symposium war die Aufgabe gestellt, die bisherige Entwicklung der Kapitalbildung im Mittelstand kritisch zu analysieren und für die Zukunft Ansätze zur Verbesserung der Kapitalversorgung aufzuzeigen. Dabei richtete sich das Interesse sowohl auf das Finanzierungsverhalten der kapitalnachfragenden Unternehmungen, als auch auf das Angebotsverhalten der institutionellen und privaten Kapitalanleger, aber auch auf die Struktur und die Vermittlungsorganisation eines Beteiligungsmarktes. An dieser Zielsetzung orientierte sich die Organisation des Symposiums ebenso wie die Systematik des vorliegenden Tagungsbandes.

Aus dem Vorwort

DUNCKER & HUMBLOT / BERLIN

Produktivitätsentwicklung staatlicher Leistungen

Von

Peter Friedrich,
Kurt Reding, Eberhard Wille

Herausgegeben von Karl Häuser

Schriften des Vereins für Socialpolitik, N. F. Band 145

286 S. 1985. DM 148,—

Der Band enthält drei Referate, die auf der Jahrestagung des Ausschusses für Finanzwissenschaft vorgetragen und diskutiert worden sind. Der Ausschuß trifft sich traditionellerweise seit fast einem Vierteljahrhundert jeweils in der Woche nach Pfingsten. Die Tagung des Jahres 1983, deren Referate in diesem Band vereinigt sind, fand in Hannover statt. Sie galt dem Thema „Die Produktivitätsmessung staatlicher Leistungen". Das Thema wurde unter drei verschiedenen Aspekten behandelt, nämlich als ein Problem der Beziehungen zwischen Sachausgaben einerseits und Personalausgaben andererseits, sodann als ein Problem der Messung der Produktivität öffentlicher Leistungen und schließlich, drittens, als ein Problem der Personalstruktur im Sinne eines sog. Stellenkegels für eine dreistufige Verwaltungshierarchie. Jedes dieser Probleme wurde in einem Referat behandelt, das nach eingehender Diskussion durch den jeweiligen Referenten in die nun vorliegende Fassung gebracht worden ist.

Aus dem Vorwort

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Hinweise für Autoren

1. Das Manuskript soll den Umfang von 20 - 25 Schreibmaschinenseiten (13 - 17 Druckseiten) nicht überschreiten. 1½ Manuskriptseiten zu 32 Zeilen à 60 Anschläge ergeben 1 Druckseite. Die Lesewilligkeit eines Beitrages nimmt mit der Kürze zu.

2. Alle Manuskripte sind in zweifacher Ausfertigung zu richten an: Prof. Dr. Artur Woll, Universität Siegen — Gesamthochschule, Hölderlinstraße 3, D-5900 Siegen.

3. Dem Beitrag wird — nach dem Titel — ein kurzer Hinweis von wenigen, maximal 10 Zeilen vorangestellt, der den eiligen Leser über Probleme und Untersuchungsmethode informiert, nicht aber über das Ergebnis.

4. Der Beitrag ist durch eine Zusammenfassung von maximal 100 Worten in deutscher und englischer Sprache sowie mit einem Literaturverzeichnis abzuschließen.

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   Beispiel: Ott, A. E. (1966), Sparen und Investieren — erneute Diskussion eines alten Problems, in: G. Bombach (Hrsg.), Wachstum, Einkommensverteilung und wirtschaftliches Gleichgewicht, Schriften des Vereins für Socialpolitik N. F., 53, Berlin.

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9. Die Ziffer, unter die der Beitrag in die Klassifikation des Journal of Economic Literature einzuordnen ist sowie die englische (deutsche) Fassung der deutschen (englischen) Überschrift des Beitrags ist anzugeben.

Die Beachtung dieser Hinweise erleichtert und beschleunigt die Bearbeitung des Manuskripts.

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