UNEMPLOYMENT DYNAMICS, WAGE FLEXIBILITY AND THE NAIRU IN AUSTRIA

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Abstract

This paper presents some empirical evidence of an increase of distributional pressures in the Austrian economy as reflected in a rise of the NAIRU over the past fifteen years. Employing a simple macroeconomic model of wage-price formation we have been able to establish that both the increase in employers' contributions to social security and the rising share of long-term unemployment associated with higher overall unemployment have exerted pressure on real product wages and, thus, have pushed up the "equilibrium rate of unemployment". Even if this latter persistence effect in unemployment is ignored for a moment, the Austrian NAIRU seems to have approximately doubled since 1973.It should be noted, however, that despite of having trended upwards the Austrian NAIRU still compares very favourably with that of most other OECD-countries. The estimation results reveal an impressive amount of real wage flexibility putting Austria among the top league in Europe. In particular, this stems from the fact that real product wages seem to be easily adapted to external price shocks and productivity shocks.

1. <u>INTRODUCTION</u>

Austria's economic performance over the last ten to fifteen years has compared favourably with that of most other European economies in various respects: growth of per capita real income has been faster, unemployment and inflation have been lower, and the external balance has remained broadly in equilibrium. Several observers have attributed this success to the particular Austrian approach to macroeconomic management, basically constituted by a hard-currency policy combined with comprehensive tripartite wage and incomes policies and an active fiscal policy, all of which is embedded in a long standing system of institutionalized cooperation between business, labour and government.

Successful as these strategies may have been by international standards, Austria has not been spared the experience of a sharp rise in unemployment in recent years. Before 1981 there was hardly any unemployment problem in Austria, the rate of (registered) unemployment moved within a narrow range of 1 1/2 to 2 1/2 per cent of the labour force. In 1982 and 1983 unemployment rates doubled. Since then the upward movement has slowed down and, actually, unemployment rates are somewhat decreasing these days; but there are little indications that Austrian unemployment could drop substantially below the five per cent mark before the end of this decade.

Against this background, this paper addresses the question whether the Austrian political and organizational system of neo-corporatist incomes policies has lost some of its flexibility to adjust real wage aspirations to a level compatible with full employment in the medium term. An immediate implication of a positive answer to the above question would be that the Austrian NAIRU - which may serve as an appropriate indicator of underlying inflationary pressures in the labour market - has risen in recent years. It is important to note, however, that the latter proposition only holds true if the NAIRU does not exhibit hysteresis properties. Hysteresis implies that the NAIRU tends to move - independently of its more fundamental supply-side determinants - pari passu with actual unemployment.

In the paper we will therefore take another look at wage-price formation in Austria and the determinants of the NAIRU with a special focus on the effects of actual unemployment. The paper is organized as follows: Section 2 sets the stage of the analysis. We present a simple macroeconomic model of wage-price determination and then proceed to discuss several supply-side push factors and possible hysteresis mechanisms that might have affected the NAIRU. The main findings of the empirical analysis in Section 3 are that both the increase in employers' contributions to social

security and the rise in the long-term proportion of unemployment have pushed up the Austrian NAIRU in the last ten to fifteen years. The final section simply summarizes our results and points towards avenues of future research.

2. FRAMEWORK OF ANALYSIS

2.1 A Model of Wage-Price Formation

In order to analyze the wage formation process in Austria and its implication for the NAIRU we make use of a macroeconomic framework of wage-price determination described e.g. in Layard and Nickell (1986). The general idea is a "Battle of the Mark Ups" approach with unemployment serving to reconcile the "feasible" real wage implied by the pricing behaviour of firms and the "target" real wage implied by the wage-setting behaviour of wage-bargainers in the long run.

Pricing behaviour of firms may be thought of as setting (value added) prices as a mark up on hourly labour costs, where the mark up may be influenced by the level of activity in the output market and by cost surprises. Additionally, there may be long run price pressure variables, such as the degree of competition in output markets, that affect pricing decisions. Wages in turn are set as a mark up on expected prices, where this mark up will tend to increase with the level of activity in the labour market; it may also be influenced by a set of other factors reflecting wage pressure and real wage resistance which will be discussed later. In the longer run, productivity growth will, on the one hand, lower unit labour costs (at given wages) and, thus, tend to reduce the mark up of prices on wages. Unions, on the other hand, will be induced to bargain for a higher mark up of wages on prices. Thus, in static log-linear form one arrives at the following model of wage-price determination:

Price-Setting

$$p - w = a_0 - a_1 (w - w^e) + a_2 y - a_3 x + A_4 Zp \tag{1}$$

Wage-Bargaining

$$w - p = b_0 - b_1 (p - p^e) - b_2 U + b_3 x + B_4 Zw \tag{2}$$

where w denotes hourly cost (incl. employers' contributions to social security), p are value added prices and x denotes productivity; y is designated to describe the level of activity in the output market and U captures the influence of labour market activity on wage-bargaining outcomes. Z_p stands for possible long run price pressure variables and, analogously Z_w denotes wage pressure elements.

The equilibrium rate of unemployment or the NAIRU may then be conveniently defined as the rate of unemployment that reconciles real wage claims and price mark ups, when – for simplicity – y is set to its average value. Obviously, it would also be possible to substitute y out of the price equation using some form of Okun's law. It should be noted, however, that in an open economy a NAIRU defined along these lines does not necessarily represent an equilibrum rate of unemployment, since it may well be associated with substantial and possibly unsustainable trade imbalances. Thus, in the long run, the NAIRU has to be pinned down by some form of trade balance restriction, e.g. purchasing power parity (for full details, see Layard, Nickell (1986)).

In the context of the present analysis, however, we want to focus on two particular aspects of wage formation and its relation to unemployment dynamics in Austria. These are (i) supply–side push factors on real product wages and (ii) persistence or hysteresis effects in unemployment.

2.2 Wage pressure elements

There are several factors that may tend to generate real wage pressure at given rates of unemployment. These include unemployment benefits, mismatch between the unemployed and the available vacancies, and all the variables that affect the wedge between real–product wages and real consumption wages, namely income taxes, employers' contributions to social security, indirect taxes and, obviously, relative import prices. If workers (or unions) try to maintain their consumption wages when elements of the wedge go up, then product–wages will tend to increase as well. Thus, in a model like this, any increase in the wedge must be borne by labour if the NAIRU is to be prevented from rising. Finally, a set of variables should be considered that are more difficult to implement empirically, but are nevertheless of potential importance, e.g. employment protection regulations like hiring and dismissal rules, redundancy payments, search intensities of both workers and firms and so on.

Unemployment Insurance Benefits: The Austrian unemployment insurance system operates two separate programs of jobless pay, insurance benefits (Arbeitslosengeld) and, after exhaustion of insurance, unemployment assistance (Notstandshilfe). Both programs are financed through a payroll tax imposed on employers and workers. Due to the increase in unemployment, contribution rates had to be raised several times in recent years in order to keep the balance between outlays and revenues. The programs now cover about 90% of all registered unemployed.

To qualify for insurance benefits an unemployed person is required to have made contributions for at least twelve month during the two year period before registration for benefits. In case of repeated

unemployment this requirement is reduced to twenty weeks of contributions within the year before registration. Unemployment insurance benefits are not means-tested and the duration of benefits' receipt is linked to the contribution period, with a maximum duration of thirty weeks benefits. Targetted groups of unemployed, however, are now eligible to draw insurance for more than this period. Workers who have exhausted regular insurance benefits can qualify for unemployment assistance. In principle, unemployment assistance is granted without time limit, but assistance payments are subject to a means test.

The replacement ratio, which relates unemployment benefits to the level of wages, is rather low by international standards. Defined as net income during unemployment in relation to net income before unemployment, replacement ratios vary between 50% and 60%. There has hardly been any change in these numbers up to 1987; since then replacement ratios have been lowered somewhat because of changes in the tax rebate system. Since unemployment benefits are a fixed proportion of gross earnings – which are progressively taxed –, the replacement ratio is positively related to previous income up to the level which serves as benefit ceiling.

By and large, the Austrian system of jobless pay has remained fairly stable and does not seem to have improved considerably in generosity in recent years. Empirical evidence from escape rate models of unemployment indicates no statistically discernible influence of replacement ratios on re-employment probabilities (Frühstück, Pichelmann 1987); this also supports the hypothesis that upward movements in the NAIRU can hardly be attributed to a more generous system of unemployment insurance.

It may be important to note, however, that this argument does not rule out the possibility of base-level distorting effects of the unemployment insurance system. Since an extensive analysis of this issue is beyond the scope of this paper, we here discuss just one aspect that seems to be important in the Austrian case. Austrian unemployment exhibits much higher seasonal variability than unemployment in other European countries, which cannot be fully explained by the relatively high share of employment in construction and tourism. It may well be the case that the financing mechanism of unemployment benefits tends to increase the rate of temporary layoff unemployment induced by seasonal demand variations, since there is no experience-rating of contributions to the unemployment insurance fund at all. The argument dates back to Baily (1976) and Feldstein (1977), who have suggested that the provision of an implicit subsidy of this kind may cause employers to prefer temporary layoffs to other possible responses to temporary demand variations. In fact, employers and workers may collude against the insurance fund to minimize their losses from seasonal downturns in demand. The high seasonal variability in Austrian unemployment may partly be due to collusion effects of this kind, although empirical evidence is hard to come by.

Taxation: Like in most other European countries unemployment insurance in Austria is financed by a payroll tax, borne by employers and employees at equal shares. The rise in contribution rates associated with higher unemployment thus tends to increase employers' labour cost, at least in the short run. If the tax burden cannot fully be passed back to the workers through lower net real wages, then the NAIRU will be pushed upwards. The same kind of argument applies to other forms of social insurance financed through payroll taxes. With regard to unemployment, the cost of paying for early retirement may be of particular importance. Austria has been quite successful in cutting labour supply in older age categories by the extensive use of early retirement schemes; the participation rate of the age group '55 years and older' is now about ten percentage points lower than at the beginning of this decade. While this has helped keeping people off the unemployment register, contributions to social security had to be increased considerably. In the empirical section of the paper, we will therefore put the hypothesis to a test that the associated rise in labour cost has not been fully shifted back to workers and has thus contributed to a rise in the NAIRU.

Obviously, this test should be extended to all other variables that drive a wedge between employers' real labour cost and workers' real net take-home pay. As previously mentioned, these include income taxes, indirect taxes and relative import prices. For the time being, we will adopt an agnostic view with regard to the wage pressure effect of the tax rates. External inflationary shocks, however, seem to be less likely to have produced significant wage pressure in the Austrian setting of wage and incomes policies combined with a hard-currency option. Unions have been well aware of the fact that for a small open economy international competitiveness is perhaps the most important determinant of employment over the medium term. Thus our hypothesis would be that the terms-of-trade loss caused by the oil price rises was not offset by higher nominal wage claims and, therefore, has not given the strong twist to the wage-price spiral to be observed in other countries.

Labour market mismatch: Increasing regional and/or occupational differences between labour demand and labour supply could well induce additional wage pressure and thus lead to an increase in the NAIRU. But while there is some evidence for an outward shift of the Austrian U/V curve in recent years, available mismatch indices show no distinct pattern; neither occupational nor regional mismatch coefficients exhibit an upward sloping trend in the period under consideration (Christl, 1987). We are thus inclined to put little weight to the argument that increased mismatch may have led to a rise in the NAIRU.

Employment Protection: Employment protection may affect the NAIRU in two ways: First, employment protection regulations directly influence labour costs by increasing expected fixed costs of workers. Secondly, and perhaps more important, a change in the composition of employment in favour of more protected sectors of the economy, for example an increase in the share of public

employees, may affect the overall bargaining stance of unions and thus introduce additional distributional pressures (for a theoretical analysis of the effects of different forms of wage leadership in a two-sector economy, see Wörgötter 1988). Although hard to implement empirically, both factors may have been at work in Austria in recent years.

2.2 Persistence or hysteresis effects in unemployment

There appears to be considerable empirical evidence that the equilibrium rates of unemployment have risen substantially in most European contries and tend to follow actually observed unemployment rates quite closely (see e.g. Coe 1985, Metcalf 1987). This has led to the hypothesis that unemployment may be strongly dependent on its own history, a phenomenon labelled as hysteresis or persistence (for an overview see papers in Cross 1988).

A simple exposition will help to clarify the point. In the standard case, the equilibrium level of unemployment U^* will be defined by (the steady-state levels) a set of relevant variables Z_u, so for example

$$U^* = bZ_u \tag{3}$$

Hysteresis or persistence arises when U^* is also a function of past unemployment rates,

$$U^*_t = \Sigma a_i \, U_{t-i} + bZ_u \tag{4}$$

Hysteresis occurs when the a_i's sum up to unity; then no long-run NAIRU exists at all. Any change in actual unemployment is fully reflected in a change of equilibrium unemployment. Loosely speaking, this implies that there exist "good" and "bad" equilibria in the labour market with the attained equilibrium position being dependent on the history of shocks.

If $0 < L\Sigma a_i < 1$, there is persistence in unemployment in the sense that the short run NAIRU evolves rather slowly towards its steady-state level.

A simple test for the presence of hysteresis or persistence in unemployment, therefore, would be to look for the effects of past unemployment in the wage equation. If the coefficient on past unemployment is equal but of opposite sign to that of current unemployment in the wage equation, the hysteresis hypothesis cannot be rejected. If past unemployment is insignificant, both the persistence and the hysteresis hypothesis can be rejected.

Before turning to the empirical results, however, it may be useful to summarize briefly possible explanations for hysteresis or persistence phenomena that have been put forward in the literature.

A first explanation is provided by the insider–outsider hypothesis of wage setting behaviour. Under this story, employed workers (insiders) carry more weight in the wage setting process than the unemployed outsiders. For example, if unions bargain mainly on behalf of the incumbent workforce, then any temporary adverse shock in employment will tend to perpetuate itself, because real wage demands are adapted to the now smaller number of employed insiders (see e.g. Gregory 1986, Blanchard and Summers 1986, Lindbeck and Snower 1986, 1988).

A second mechanism which may generate hysteresis in unemployment is the depreciation of human capital of those out of work for some period of time. According to this view, prolonged unemployment may lead to a deterioration of skills, important attitudinal aspects of the work ethic and motivation of individual job seekers; and, obviously, when out of work, there are no opportunities for learning–by–doing and on–the job–training. Even if the quantitative importance of human capital depreciation is considered to be fairly small, the mere fact of being out ot work for a long time may convey a negative signal about expected productivity to prospective employers, if they use past unemployment records of job applicants as a screening device. The resulting disenfranchisement of the labour market implies that the long–term unemployed may exert little or no downward pressure on wage increases. Clearly, this hypothesis is closely related to the insider–outsider view of wage bargaining, it simply puts more emphasis on "outsider"–mechanisms (see e.g. Layard and Nickell 1986, and Franz 1987, who have argued along these lines).

A third explanation focusses on the role of physical capital formation. The argument (proposed in particular by Malinvaud 1982; see also Modigliano et al 1987) runs as follows: Sustained periods of low growth and high unemployment are likely to covary with low investment, which – in turn – may cause a "capital shortage" to emerge that posts a barrier to higher employment. Thus, under this story, expanding the capital stock should be given top priority.

3. EMPIRICAL RESULTS

In the empirical implementation of the wage–price system outlined in the previous section we adopt an error–correction framwork. The price/wage surprise variables are proxied by the changes in wage/price inflation and for the productivity variable we simply employ output per man–hour. Estimation results for our finally preferred aggregate wage equations are reported in Table 1:

equation (2) differs from (1) just in the respect that we have replaced lagged unemployment by the share of long-term unemployment in total unemployment. Both equations were jointly estimated with a price equation (not reported here) by an 3SLS/IV-procedure. Amongst many variables we have tried to capture wage pressure elements, we have only found employers' contributions to social security (t2) and changes in indirect taxes (t3) to be of significant importance.

Table 1

Aggregate Wage Equations: Austria 1966–1987

Dependent Variable: Δ (w–p)		
Independent Variables:	(1)	(2)
Constant	−1.79643 (.399)	−2.20146 (.356)
$(w-p)_{-1}$	−.36097 (.073)	−.43535 (.065)
$\Delta^2 p$	−.73673 (.110)	−.72463 (.107)
x_{-1}	.36097*	.43535*
t2	.43364 (.267)	.60249 (.251)
Δ t3	−1.22000 (.195)	−1.09284 (.173)
U	−.02824 (.005)	−.01794 (.003)
U_{-1}	.01775 (.006)	–
U^L/U	–	.00278 (.001)
R^2	0.955	0.958
S.E.	0.00872	0.00844
DW	2.68	2.68

* constraint on coefficient

The equations generally perform well based on the standard criteria. All the parameters are correctly signed, of a reasonable order of magnitude and the imposed homogeneity restrictions are not rejected by the data.

To be more specific, first of all it is interesting to note that the data allow to constrain the coefficients of lagged real product wages and productivity to be equal but of opposite sign. Thus there seems to be an error correction mechanism with respect to the distribution of functional income at work, which fits several descriptive accounts of Austrian incomes policies quite nicely. Relative import prices (weighted by the share of imports in GDP) turned out to be insignificant, supporting the notion of labour's willingness to quickly accept reductions in the real consumption wage enforced either by lower productivity gains or by terms-of-trade losses. The short run elasticity of wages with respect to prices is about one third, the error correction coefficient lies in the range between -.36 and -.44.

Turning now to the taxation variables, we have not been able to establish a significant influence of workers' tax rates on real product wages. Several tax reforms - designed primarily to counteract bracket creeping - and a panoply of tax reliefs seem to have prevented workers' tax rates from exerting upward pressure on product wages. This is, however, not the case for employers' contributions to social security. The estimates clearly indicate that the increase in employers' tax rates - depicted in the chart below - has not been fully passed back to workers and has thus contributed to an increase in distributional pressures as reflected in a rising NAIRU.

Chart 1

EMPLOYERS' TAX RATE

Changes in indirect taxes have been borne by labour according to our estimates; Austrian firms seem to have little difficulties to raise their prices for every increase in indirect taxes. The size of this tax term (t3) even allows for the possibility that Austrian firms get a more than 100 per cent compensation for VAT increases in the short run.

We have also investigated into the effects of serveral other possible wage pressure factors. These include replacement ratios, occupational and regional mismatch indices and several proxies for the degree of employment protection, e.g. indices of redundancy payment requirements, turnover rates by industries and variables capturing shifts in the employment composition between sheltered and exposed sectors. All these attempts, however, have not (yet?) proven notably successful.

Proceeding now to the empirical assessment of hysteresis or persistence effects, the performance of the various unemployment terms is, obviously, of crucial importance. The estimation results reported in column (1) of Table 1 confirm that both actual and lagged unemployment should appear in the wage equation. The unemployment coefficients indicate that in the short run the elasticity of wages with respect to unemployment is markedly higher than in the long run, thus implying time-dependency of the NAIRU in the sense that the contemporaneous "equilibrium rate of unemployment" tends to be pushed above its long run level. Rearranging the unemployment terms reveals that both a level and a change term of unemployment are of signifcant importance. This specification implies loops around the Phillips curve á la Lipsey and points towards persistence in unemployment but not to hysteresis.

In a related paper (Neudorfer, Pichelmann and Wagner 1988) we have investigated the hypothesis that this result can be attributed to duration composition effects of unemployment. Indeed, if one splits up the overall unemployment rate in the corresponding short-term and long-term rates, it turns out that lagged short-term unemployment is of no importance. In column (2) of Table 1 we, therefore, report the results of reestimating the wage equation when lagged overall unemployment is replaced by the share of long-term unemployed in overall unemployment (U^L/U). The positive coefficient on this variable clearly indicates that a rising share of long-term unemployed tends to dampen the restraining influence of unemployment on real wages. Since this proportion has risen by nearly 7 percentage points in the eighties, this corresponds to an increase in wage pressure of about 2 per cent, which has, of course, pushed the NAIRU upwards.

The considerable amount of persistence in unemployment generated through this channel seems remarkable for a country in which unions are praised for their comprehensive commitment to full employment policies. And, indeed, while our results confirm that unions are, in general, anxious not to price their members out of the market, they do not seem to consider long-term unemployment a

problem of wage formation. Within the Austrian institutional setting, the issue of long-term unemployment is assigned to the Department of Social Affairs, which is held responsible for the reintegration of the long-term jobless into the employment system, mainly by providing training schemes to those affected.

The share of long-term unemployment, however, is closely related to the level of unemployment itself. In the short run the long-term unemployment proportion tends to fall as unemployment rises, because the duration composition is likely to be initially driven by temporary rises in the inflow into unemployment. In the long run, however, sorting and selection mechanisms within the unemployment pool will generate an overrepresentation of jobseekers with low escape probabilities from unemployment and thus result in a higher proportion of long-term unemployment. This relationship can be illustrated by the following simple regression:

$$U^L/U = 0.771 \ (U^L/U)_{-1} - 2.520 \ U + 6.202 \ U_{-1} - 2.832 \ U_{-2}$$
$$\quad (.134) \qquad\qquad (.772) \qquad (1.369) \qquad (1.133)$$

$$R2 = 0.822 \qquad DW = 2.63 \qquad T = 66 - 87$$

The first point to note about this equation is that for any given level of unemployment the implied long-term proportion seems to be lower in Austria than in countries like the FRG or Britain (see the results of Franz 1987, and Nickell 1987), which may be due to the high seasonal component in Austrian unemployment. Secondly substituting the dynamic relationship between long-term unemployment and the level of unemployment into equation (2) generates just the kind of dynamics reported in equation (1) of Table 1, where overall unemployment is the only relevant labour market activity variable. Thus we are inclined to suggest that the persistence effects in the Austrian NAIRU can be attributed to duration compositon effects of overall unemployment.

Combining the wage equation (2) with the corresponding price equation (see appendix) and solving for unemployment yields NAIRU-estimates for Austria. The evolution of actual unemployment and the NAIRU in the period 1966-1987 is depicted in Chart 2. In the late Sixties and beginning of the Seventies the NAIRU fiddles around the 2 per cent mark; in the second half of the Seventies, however, the NAIRU has started to increase and, in fact, exceeded actual unemployment for several years. It may be interesting to note that, by and large, inflation had been kept under control in that period, but the economy suffered from deficits in the external account. Actual unemployment began to rise in Austria during the early Eighties, pushing the unemployment rate above the NAIRU. The NAIRU itself, however, exhibits a tendency to follow actual unemployment, thus running up to a level of about 4 1/2 per cent in 1987 (for a time series approach to the measurement of persistence effects in Austrian unemployment, see Neudorfer and Pichelmann 1988).

Chart 2

UNEMPLOYMENT AND NAIRU
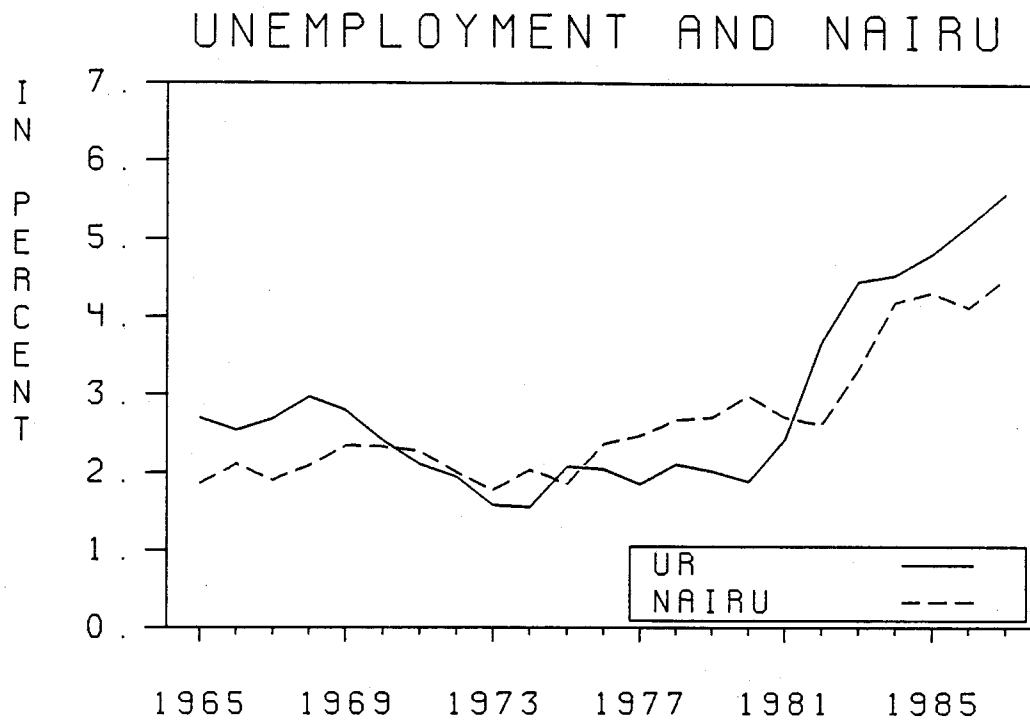
Despite from still being rather low in absolute levels by international standards, the NAIRU-estimates indicate the serious impediment of the workings of the labour market that distributional pressures may pose even in a country like Austria, which is often claimed to have aquired a political and organizational framework of neo-corporatist income policies well designed to fight inflation. In our analysis we have identified two factors that account for the rise in the Austrian NAIRU, namely the increase in employers' contributions to social security and the rise in the long-term proportion associated with higher unemployment. As can be inferred from Table 2, the increase ein employers' tax rates in the period from 1973-1980 had pushed the NAIRU up by 1.2 percentage points to 3 per cent in 1980. From 1980 to 1987 the NAIRU rose by another 1.5 percentage points, two thirds of which can be attributed to duration composition effects of unemplyoment and one third was due to further increases in social security contributions.

Table 2

Breakdown of Changes in the Austrian NAIRU

	1973	1980	1987
NAIRU	1.8	3.0	4.5
Absolute change in subperiods:		1.2	1.5
– due to employers' tax rates		1.2	0.6
– due to duration– composition effects		–	0.9

4. CONCLUDING REMARKS

This paper has presented some empirical evidence of an increase of distributional pressures in the Austrian economy as reflected in a rise of the NAIRU over the past fifteen years. Employing a simple macroeconomic model of wage-price formation we have been able to establish that both the increase in employers' contributions to social security and the rising share of long-term unemployment associated with higher overall unemployment have exerted pressure on real product wages and, thus, have pushed up the "equilibrium rate of unemployment". Even if this latter persistence effect in unemployment is ignored for a moment, the Austrian NAIRU seems to have approximately doubled since 1973.

It should be noted, however, that despite of having trended upwards the Austrian NAIRU still compares very favourably with that of most other OECD-countries. The estimation results reveal an impressive amount of real wage flexibility putting Austria among the top league in Europe. In particular, this stems from the fact that real product wages seem to be easily adapted to external price shocks and productivity shocks.

Obviously, the highly aggregated analytical approach employed in this paper tends to come short on the role of sectoral wage flexibility for the working of labour markets. Moreover, while we have focussed rather extensively on wage flexibility issues, the pricing behaviour of firms has been largely ignored, basically assuming 'normal cost' pricing in the medium run, Thus, firm policy conclusions are difficult to draw at this stage of the analysis. The results of this study, however, seem to suggest that further research attempts to identify the causes of increased tensions in the Austrian labour market will prove a worthwhile activity.

APPENDIX

Aggregate Price Equations

Corresponding to Equations (1) and (2) in Table 1

Dependent Variable: Δ (p–w)		
Independent Variables:	(1)	(2)
Constant	1.9132 (.138)	1.9134 (.137)
$(p-w)_{-1}$	–.3936 (.0278)	–.3936 (.0278)
$\Delta^2 w$	–.4908 (.075)	–.4847 (.074)
x_{-1}	–.3936*	–.3936*
OMA1	1.2853 (.136)	1.2918 (.135)
OMA2	–.0502 (.013)	–.0471 (.013)
R^2	0.869	0.871
S.E.	0.0088	0.0087
DW	1.70	1.67

* constraint on coefficient

Notes: p, w, and x are defined in the text; OMA1 is the log of overtime hours and OMA2 is the lagged change in the degree of capacity utilization. The effect of both variables is ignored in calculating the NAIRU.

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