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Autonomous Wage Inflation

Ekkehart Schlicht*

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This paper develops a theory of stagflation, based on turnover-efficiency-wage theory. In these theories, wages are *forward-looking*, *i.e.*, set to keep incumbents with the firm. The employed workers apply for better jobs and compete with unemployed applicants. An employed applicant is, however, preferred to an unemployed applicant, or the long-term unemployed, who, with their outdated skills, form an essentially non-competing group.

Consider now the case that the monetary authority succeeds in stabilizing the price level permanently. Start from efficiency-wage unemployment equilibrium. The skills of the unemployed will, after a while, become outdated. This reduces the „effective” rate of unemployment and causes the labor market to tighten. Turnover increases, and the former equilibrium is destroyed. The individual firm will raise wages in order to reduce turnover costs. Costs increase, causing prices to also increase. The monetary authority reacts with restrictive policies, and unemployment increases. This leads to a new turnover-efficiency-wage equilibrium, and the process continues. The argument implies that wage inflation emerges after a while at *all* employment levels. This paper concludes by discussing some of the consequent policy implications.

Keywords: stagflation, efficiency wages, turnover, natural rate, business cycles, stabilization policy, indexation, macroeconomic externalities

Journal of Economic Literature Classification: E10, E12, E31, E58, E64, J5

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Introduction

The current economic crisis is, in my view, largely a problem of stagflation: were it not that a stimulation of demand through deficit spending would result in inflationary pressure, even in the presence of high unemployment, deficit spending would be an easy remedy to increase production and employment. If some foreign markets broke away, we could ourselves simulate their effect on our economy by demanding exactly what they would have demanded. The same holds true for any kind of demand deficiency. Attempts of this kind have, however, invariably produced inflationary hikes, even in presence of unemployment. The theoretical problem seems to be to understand the sources of these tendencies to stagflation.

Stagflation may occur as a result of capital shortage: if there are not enough jobs, there will be unemployment. With capital shortage, any increase in aggregate demand would induce price increases without reducing unemployment. The current economic situation in Germany is, however, characterized by excess capacity rather than by capital shortage. I shall focus therefore more specifically on stagflation in the presence of excess capacity.

What I am trying to do is to develop a view – one particular view – of stagflation. This view concentrates on turnover efficiency wages. The core idea is that, in the long run, the unemployed become irrelevant for wage formation, even if recruitment is drawn from the unemployment pool. Thus, unemployment ceases to be a stabilizing force for wage movements. In such a setting, inflationary pressure will eventually emerge from the wage side at all employment levels, irrespective of the absolute level of wages. This is bound to induce, sooner or later, price inflation at all employment levels. If these tendencies are countered by restrictive monetary and fiscal policies, unemployment will increase, and the process will continue, slowly, intermittently, and, ultimately, inescapably.

Other mechanisms to autonomous wage inflation may be envisaged. Winfried VOGT (1994) has developed a very similar view, based on discipline-efficiency wages, and the idea that unions bargain only for the employed, but not for the unemployed, may lead to a similar result. For the sake of concreteness, however, I shall confine the discussion to the turnover case.

1 Overview

The paper is organized into seven sections. In Section 2, I repeat the turnover argument. Market clearing wages and turnover-efficiency wages are contrasted. Market clearing wages serve the function of equating demand and supply in all segments of the labor market, whereas turnover-efficiency wages prevent workers from leaving. The first has to do with *attracting* workers, the latter with *retaining* them. Thus, turnover-efficiency wages are set in order to control future behavior rather than past behavior, and so may be called *forward-looking*. (Discipline efficiency wages are forward-looking as well.)

In Section 3, I discuss wage formation over the business cycle within a framework of turnover-efficiency wages. It is argued that forward-looking wages will mainly respond to changes of employment, rather than to unemployment itself, since the job opportunities of the employed are mainly affected by improvements or deterioration in outside opportunities. The employed have, however, a competitive advantage over the unemployed to obtain a new job, and so the level of unemployment has no major influence on their outside options.

In Section 4, I discuss wage formation under the assumption that the instruments for demand management, and monetary and fiscal policy work perfectly well: economic policy succeeds in stabilizing the price level by controlling aggregate demand. It is argued that this will result in a continuous contraction of economic activity. In other words, the traditional Phillips-curve, linking inflationary pressure and unemployment, is replaced by a curve that links inflationary pressure to the change in unemployment. Inflationary pressure will be zero if unemployment is steadily increasing, and any successful stabilization policy will eventually cause such a contraction.

In Sections 5-7, I conclude by discussing some policy aspects of the view developed here.

2 Labor Turnover and Forward-Looking Wages

With on-the-job training provided by firms, turnover is costly, and wages have the dual functions of attracting new applicants and keeping the incumbents with the firm. Conceptually, we may think of two wage rates: one wage serves to attract new workers; the other serves to keep the old, w_g and w_l , respectively. The wage w_0 is the market-clearing wage, and the wage w_l is known as the efficiency wage.¹

Consider first the case that firms offer the same conditions to all newly recruited workers, irrespective of whether they have been pirated from other firms or hired from the unemployment pool.²

With training sufficiently important and the training period sufficiently long, the firm will set the efficiency wage rather than the (lower) market clearing wage in order to avoid high turnover costs.³

This does not imply, however, that there will be unemployment. It is erroneous to equate excess supply in any particular segment of the labor market with unemployment, since the majority of applicants for any job are usually employed somewhere else and simply try to find a better job. If they don't succeed, they keep their old job rather than join the unemployment pool.

Hence, the turnover-efficiency-wage argument is by no means restricted to unemployment, although it can be used in such a context. It provides simply an argument why, in any segment of the labor market, wages may

¹ For turnover-efficiency wage models, see STIGLITZ (1974), SALOP (1979), SCHLICHT (1978). Surveys are provided in YELLEN (1984) and STIGLITZ (1987). ² The usual critique of turnover-wages (as well as other types of efficiency wages) is that profit-maximizing firms would offer more elaborate wage contracts, involving entrance fees or bonding, for instance. This would eliminate involuntary unemployment. As we do not find such contracts in practice, it seems that they are not feasible for other reasons, and this observation provides the rationale for assuming job-specific wages. Relevant arguments on that may be found *e.g.* in WILLIAMSON *et al.* (1975), THUROW (1977, 81-85), STIGLITZ (1987, 29-30), and FEHR *et al.* (1993). ³ With low turnover costs, the firm will only pay market-clearing wages. The background of the argument is thus high turnover costs. Why has this not been a problem in the fifties? I suggest that this has to do with changes in technology and automatizing: routine work can presumably be automatized more easily than work of sophisticated and responsible nature. Automatizing will thus lead to a relative decline of routine work and a relative increase in responsible tasks (SCHLICHT, 1979, 62). The massive decline of blue-collar work confirms this. The recent growth in the service sector may, however, mitigate or even reverse this tendency, since it involves often very simple routine work. Turnover is high, and turnover costs are low, but productivity is low as well. (See however SCHLICHT (1994) on a theoretical argument with regard to this observation.)

be so high as to attract much more qualified applicants than needed (SCHLICHT, 1981).

In such a setting, wage formation would be *forward looking*: wages would be set such as to prevent experienced workers from leaving, but there would be chronic excess supply for all job openings. In contrast, market-clearing wages may be characterized as *backward looking*: they equate demand and supply for vacancies.

Discipline-efficiency wages (SHAPIRO and STIGLITZ 1984, FEHR 1986) would amount to much the same: the threat of dismissal is inversely related to re-employment chances. If employment is rising, there are new hires and re-employment chances are good even if there is some unemployment. If employment is contracting, re-employment chances are bad, even if the level of unemployment is low.

If firms optimize their labor demand, they will equate the marginal productivity of labor with the wage rate by creating just the optimal number of jobs. There is no reason to expect efficiency wages generally, and forward-looking wages in particular, to deviate systematically from marginal productivity.

3 Wage Formation Through the Business Cycle

Consider now an environment of upswings and downswings of employment. If there is an upswing, the demand for workers increases, and the firms will try to prevent a drain on their workforce by improving work conditions, including pay. We should see wage increases, but these wage increases are not instigated by any kind of supply shortage. They are due to the improvement in outside options for the incumbent workers, which must be matched by wage increases. We should, therefore, expect that an upswing will induce wage hikes, even under conditions of unemployment.

During a downswing, a drain on the workforce may be less costly, and even desired, since it may align employment with production. We should expect, therefore, a decrease in wages. This tendency may, however, be soothed by a concern to keep the workers' morale intact, and by a fear of adverse selection.

In conclusion, we should expect the wage rate to respond primarily to *changes* in employment.¹

Similarly, discipline-efficiency wages will respond to changes in employment, as the threat of dismissal is directly related to re-employment prospects. All &s corresponds to the observation that wages are fairly flexible over the business cycle. But flexible wages will not necessarily be market clearing, and it is erroneous to conclude that non-market clearing wages must be related to some sort of wage rigidity.

4 Autonomous Wage Inflation

Consider next the interrelationship of wages and persistent unemployment. For any particular wage level, the firms will set their wages such as to maximize their profits by selecting a wage that reduces turnover sufficiently, but is neither too high nor too costly. Each firm fixes a wage in this manner, while taking the general level of wages as given. There is no guarantee, however, that the general wage level will remain what it has been. If many firms set their wage above the average wage level, this will lead to an increase in the general level of wages. If many firms set the wage level below the average, this will pull the average down.

Let each firm set its optimal wage. Consider the case that many firms select a rather high wage rate. This will push the wage level up. Wage inflation occurs, and each firm ends up with a real wage which is too low, since it has been determined without anticipating the raises of the other firms. The process continues. After a while, firms will start to anticipate wage inflation. If a firm finds it optimal to increase its real wage, it will take into account anticipated inflation. Thus will accelerate wage inflation. If the process remains uncontrolled, an ever-accelerating rate of inflation will result. Similarly, wage deflation would accelerate over time.

Accelerating inflation or accelerating deflation could be avoided by

¹ CAMPBELL (1993) concluded on the basis of a very detailed data set that a change in current wage is a much more important determinant of quit decisions than the current wage level. (He advanced however an argument different from the present one to explain this regularity.) In their study of wage drift in Germany, GAHLEN and RAMSER (1987, 46-48) report a significant impact of the rate of change in unemployment in all cases. However, the impact of the level of unemployment was never significant and had the wrong sign in 5 out of 16 cases. COE (1990) presented an extensive study of wage formation in fifteen sectors of fourteen countries. In most cases, the change in employment turned out to be of more importance than the level.

bringing the corrective force of emerging unemployment into play, and is precisely what the early turnover-efficiency wage models suggested. With increased unemployment, it will be harder for each employed worker to obtain a better offer. Hence, turnover will decrease, thereby reducing the need for the firms to pay above-the-average wages for controlling turnover. Symmetrically, a reduction in unemployment would make it necessary for firms to offer higher wages, and so remove deflationary pressure.

Wage increases translate into rising costs that will, sooner or later, lead to price inflation. Economic policy is bound to control inflation by restrictive measures. If it is successful, employment will be curbed. By decreasing employment, the need to pay above-the-average wages will be removed and inflationary pressure will recede. This suggests that a stable "natural" rate of unemployment is necessary to avoid accelerating inflation.

This argument is, however, only valid in the short run, since prolonged unemployment will lead to a deterioration of the skills of the unemployed *vis-à-vis* the skills of the employed. There will be human capital depreciation, so to speak, with pernicious long-run consequences.

Persistent unemployment will result in a less qualified supply in several ways. The employed keep up-to-date with the most recent technology, while the unemployed do not. Further, and more importantly, a reduction in economic activity reduces also the amount of on-the-job training in the economy. Only a smaller number of apprentices will be trained, and the supply of qualified craftsmen will be reduced after a while. Similarly, all occupations that require previous job experience of some kind will be supplied with fewer trained workers. The number of qualified workers in the unemployment pool will thus decrease, and qualifications of the long-term unemployed will become outdated. In the very long run, 50 per cent employment will create only 50 per cent qualified applicants for all jobs requiring previous work experience.

It is only for the ports-of-entry that the number of the unemployed may be of relevance. With forward-looking wages, supply conditions are, however, fairly irrelevant. Wages are set to prevent turnover, and turnover is reduced by unemployment only if the incumbent workers face competition from the unemployed. For all jobs that require previous work experience, this can only temporarily be the case, since the

unemployed will have no work experience in the long run. (In Sao Paulo there is sometimes a tight labor market in spite of severe unemployment.)¹

As a consequence, unemployment will, in the long run, cease to be an effective check on labor turnover. Wage inflation will emerge independently of the level of unemployment and the absolute wage level, and a further reduction in employment will be needed to prevent it from accelerating. In this way we may envision a process of economic decline.

5 Negative Policy Implications

The argument outlined here has positive and negative policy implications. I begin with what the argument does *not* imply.

Wage rigidity. Long-term unemployment is not caused by wage rigidity and hence, will not be curbed by making wages more flexible. Actually, wages are quite flexible, but move in wrong direction² More flexibility may mean this wrong movement speeds up, along with the problems.

The welfare state. Long-term unemployment is not caused by the welfare state. Actually, the unemployed are functionless for wage formation, regardless of how well off they are. The course of events would be the same if all unemployed were worse off or better off.³

Wage structure. Long-term unemployment is not caused by a wage structure too compressed across occupations. Often the argument is made that if wages between “good” and “bad” industries differed much more, the unemployment problem would be alleviated. However, the argument presented in this paper would not be affected by larger wage spread. To repeat: the argument is that, irrespective of the level of unemployment and wages, wage inflation will eventually occur in all sectors with sufficiently high turnover costs. A larger spread of wages might alleviate the unemployment temporarily, but it will not eliminate the problem of autonomous wage inflation: it will simply postpone it.

There is, however, a strong objection to be made against reducing minimum wages. From an allocative point of view, labor should flow to employment that creates the highest value-added. If we permit wages to rise

¹ There is some empirical evidence that the long-run unemployed exert only a minor influence on wage formation; see *e.g.* HANSEN (1991), FUNKE (1991), MÖLLER and VÖLKER (1991), CRAFTS (1989). GRAAFLAND (1991) reports a different result, however. ² On wage flexibility under corporatism, see also BELLMANN and EMMERICH (1992). ³ SOLOW (1990, 11-16) summarizes evidence that job finding rates were only marginally affected by monetary rewards.

in “good” industries, the incentive to create new jobs in these industries is reduced. A textbook labor market would achieve just that, because wages for comparable work would be equalized across the economy. If this mechanism does not work, we should simulate it, rather than weaken it further. In other words: wages for comparable work in “good” and “bad” industries should be equalized in order to create a proper allocation of labor. (Note that one of the main advantages of capitalism over labor management relates to that point. Permitting a larger wage spread amounts, in a sense, to simulating one distinctive disadvantage of labor management.)

High wages. Long-term unemployment is not caused by wages that are too high. Rather, we could have full employment and higher profits at the current wage level, as productivity increases more than proportionally with increasing employment (“Okun’s law”). The problem is rather that wages would be too high at full employment, due to our wage-setting mechanism.

Labor unions. Long-term unemployment is not caused by the German system of labor unions. The problem occurs in all industrialized nations, sometimes more pronounced than in Germany, and seems to be fairly independent of the system of collective bargaining. Actually, it is rather unclear in which way unions influence wages. Firms usually pay more than standard wages, voluntarily. Further, there is much latitude in fixing qualification standards. By tightening standards, and by informally insisting on unpaid overtime work, firms may actually reduce labor costs in spite of rigid union contracts. As the labor contract is, by its very nature, only vaguely defining duties and responsibilities, there is always latitude in all directions which prevents effective price control.

6 Positive Policy Implications

The analysis suggests also some ways of interfering with the current wage-setting mechanism. A few possibilities follow.

Loosening employment protection. If a new worker is hired, and after a training period, his performance is deemed unsatisfactory, he must be laid-off. Insofar as employment protection legislation hampers dismissal, and renders it more costly, firms will take precautions to hire only candidates with immaculate background characteristics. This will worsen the position of the unemployed vis- a-vis the employed applicants and contribute to inflationary pressure on the wage side. An easing of dismissal

would thus mitigate the problem of autonomous wage inflation. Further, a change of employment would be more risky without employment protection, and would work in the same direction.

Lower wages for the unemployed. A new development occurred recently in the chemical industry in Germany. The employers union and the labor union reached an agreement that permits firms to pay newly recruited unemployed only 95 per cent of the relevant standard wage rate. (The starting wage for long-term unemployed can even be reduced to 90 per cent of the standard wage.) This renders hiring an unemployed worker cheaper than an employed worker, and may enable the unemployed to effectively compete with employed applicants. Such a change may help to reduce inflationary pressure on the wage side: if the incumbents have to compete with the unemployed for offers, their prospects of obtaining an offer that would make it worthwhile to change employers are reduced. Since forward-looking wages are determined by the prospects for better offers, this should somewhat remove inflationary pressure from the wage side.

Such wage discrimination against the unemployed should be made obligatory (rather than optional) for the following reason: If a firm pays less because it uses its discretion, it could be bad for morale; if there is an obligation to pay less, its chance of being better accepted increases. Because the possibility to pay new workers less has been always there, but never used in a discriminative way against recruits from the unemployment pool, we should not expect the practice to spread on its own. It must, therefore, be forced on employers. (There are actually many cases where new workers are required to finish *fewer* parts than incumbents in order to obtain performance-related benefits. This practice, which amounts to higher pay for new workers, is spreading in light engineering.)

Note that the primary purpose of lower wages for the unemployed is not to reduce unemployment – this would require an increase in demand and production. Rather, the purpose of such a measure would be to reduce the chances of employed workers to obtain better offers, and make the unemployed competitive. This would remove the tendency to wage infla-

tion and would permit a "Keynesian" stimulation of aggregate demand.¹ However, effective wage competition between the incumbents and the unemployed may generate an "insider-outsider" problem with adverse productivity consequences, a situation firms may try to avoid.

Taxation. There is also the possibility to reduce inflationary pressure by taxation. A turnover tax or a progressive wage tax would render higher wage offers less effective. This would reduce the tendency to wage inflation.²

7 *De-Coupling Relative Wages and Money Wages*

The problem of stagflation is neither structural nor cyclical, but is rooted in our wage-setting institutions, *i.e.*, is institutional.³ Hence, it requires an institutional response: re-shape wage-setting mechanisms.

I am somewhat reluctant to discuss specific proposals in this direction, since such a discussion tends to obscure and bury the main point in irrelevant institutional detail, and to offend many vested interests. Nevertheless, for the sake of the argument, consider the following proposal.⁴

The main function of wage bargaining in the various sectors of the economy is to fix the system of relative, rather than absolute, wages: what should a metal worker earn, as compared to a chemical worker? Such ratios are determined by fixing money wages for the various occupations. Competition among firms determines the price level from that, and this determines the level of real wages.

All this would be independent of the price level, but there is the necessity to prevent accelerating Inflation or deflation. It has been argued here that the tendency for most firms is to eventually offer higher than average wages. This leads to autonomous wage inflation, and restrictive measures are to be introduced to curb this wage inflation.

In the end, the price level is to be stabilized by increased unemployment. This is a very wasteful system of wage control, socially. A much cheaper

¹ In Germany, employers hiring workers that have been unemployed for more than one year, may obtain an unconditional wage subsidy of 50% for one year. The subsidy increases to 70% for workers who have been out of employment for more than three years. In spite of these high subsidies, the program is only rarely used (BUNDESANZEIGER, 1989). This suggests that the preference for employed applicants is indeed very pronounced. ² The case of a progressive wage tax is analyzed in SCHLICHT (1994). ³ I am somewhat repeating here what I have said ten years ago (SCHLICHT, 1983, 651). Sorry. ⁴ Other proposals have been made, most notably profit-sharing (WEIZMAN, 1984) and tri-partite wage setting (MEADE, 1993), but I do not want to discuss these proposals here.

way would be to settle those wage bargains in terms of a unit of account, say "Taler" and to require all labor contracts to be written in Taler. The Bundesbank would be in charge of determining the exchange rate between Taler and Deutschmark in such a way as to prevent inflation.

Such a solution would enable the Bundesbank to control inflation in a much cheaper way than is done presently: Instead of using unemployment to control real wages, this is done directly -and by the same institution -by fixing the Taler/Deutschmark exchange rate.

There are, of course, problems with such a proposal. Consider the following objection: If firms and workers are more interested in money wages than in Taler wages, they will have an incentive to index their contracts accordingly, and will find ways to do so. This will render Taler contracts ineffective in controlling money wages.

The argument may be misleading for several reasons:

1. Workers may actually be more interested in relative wages than in absolute wages, since their judgment refers to what they observe in their reference groups (DUESENBERY 1949, 17-68, FRANK 1984, SOLOW 1990, 5-10).
2. Firms may actually be more interested in relative wages than in absolute wages since their competitive position depends on their own costs, not absolutely, but relative to the costs of their competitors.
3. Indexing will be costly and will only be used if distortions are sufficiently high.

In the end, it is hard to form a judgment about this or other proposals without further evidence. We should, however, seek a solution.

Conclusion

I have tried to argue that the turnover-efficiency wage story may help to understand the problem of stagflation. It suggests actually more than stagflation, namely autonomous wage inflation: wages will ultimately rise at all levels of employment unless this is countered by restrictive policy. As long as the long- term unemployed cease to be effective competitors for the employed, we should expect such a result.

Other mechanisms may work in a similar direction. Unions play a role. The current bargaining in the banking and insurance sector of the German economy is explicitly conducted by the union, with the argument that the overall state of the labor market is quite irrelevant to the negotiation. The high profits there are used to justify high wage increases, in spite of severe unemployment. A combination of high unemployment, high profitability, and high wages throughout the economy is imaginable. Such a pattern, if generalized, may easily lead to a result quite similar to the one I have sketched above.¹

This must be avoided. Institutional reforms are needed. If the proposal for decoupling money wages and relative wages discussed above is not convincing, a better solution is needed. The important thing is to face the problem. There is perhaps no better expression of this concern than in following quotation, from James Meade's Nobel Memorial Lecture, held in 1977:

I do not, I think, exaggerate wildly when I conclude by saying that one – though, of course, only one – of the really important factors on which the health of the world now depends is the recasting of wage-fixing arrangements in a limited number of developed countries. (MEADE, 1993, 9).

Appendix

The following formalizes the problem of autonomous wage inflation in an extremely simple way.

Let L denote the fixed labor force and U the number of unemployed. If an employed worker looks for a better job, he will face competition not from all the unemployed, but only from that part of unemployment that is still competitive. Denote that part of unemployment that affects wage setting by effective unemployment E .

Effective unemployment increases if new unemployment occurs, and decreases over time, due to depreciation of human capital. Let δ stand

¹ OSWALD (1993) has argued that unions pursue the interest of the median member (and median voter). The median member has acquired some seniority. Lay-offs are not a severe threat to him, but only to the workers with low seniority. This scenario renders unions indifferent with regard to employment. In so far as unions are able to influence the overall wage level in the economy, we should expect such a development.

for the rate of depreciation, and denote time derivatives by a dot over the corresponding variable. For the change of effective unemployment over time we may write:

$$\dot{E} = \dot{U} - \delta E \quad (1)$$

The effective rate of unemployment is given by the ratio of effective unemployment and employment:

$$e := \frac{E}{L - U} \quad (2)$$

The effective rate of unemployment will influence turnover and productivity.¹ Further, the wage offered by the Firm w in relation to the wage level W will affect turnover and productivity. We may write for labor productivity, α :

$$\alpha = \alpha(v, e) \quad (3)$$

with

$$v := \frac{w}{W} \quad (4)$$

as the relative wage rate, and derivatives

$$\frac{\partial \alpha}{\partial v} > 0, \quad \frac{\partial^2 \alpha}{\partial v^2} < 0, \quad \frac{\partial \alpha}{\partial e} > 0, \quad \frac{\partial^2 \alpha}{\partial v^2} < 0, \quad \frac{\partial^2 \alpha}{\partial \alpha \partial v} < 0. \quad (5)$$

The typical firm will maximize productivity per Deutschmark by selecting an optimal wage rate:

$$\frac{\alpha(v, e)}{v \cdot W} \rightarrow \max_v! \quad (6)$$

This leads to the „Solow-condition“

$$\frac{\alpha_v \cdot v}{\alpha} = 1. \quad (7)$$

This gives, for any effective rate of unemployment e , an optimal relative wage rate v for the typical firm. If $v > 1$, the typical firm sets its wage above the average, and the wage level will increase. For $v < 1$, the typical firm sets its wage rate below the average and the wage level will decline. Effective stabilization would require an effective rate of unemployment such that

¹ The following is similar to SCHLICHT (1978) and YELLEN (1984).

the typical firm sets $v = 1$. Denote this effective rate of unemployment by e^* . Keeping e equal to e^* over time implies according to (2):

$$\dot{E} = e^* (L - \dot{U}) \quad (8)$$

and, together with (1) and (2),

$$\dot{U} = \frac{e^*}{1 + e^*} (L + \delta (L - U)) > 0 \text{ for } L > U. \quad (9)$$

To achieve wage stability, unemployment must be increasing. Further, from (1) and (2) it can be seen that a constant level of unemployment leads to a continuous decline in the rate of effective unemployment and will, therefore, lead to $e < e^*$ and to wage inflation. The argument has neglected many fine points and qualifications (in particular the cyclical response of wages discussed in Section 3 above), but it may serve to illustrate the argument in a formal manner.

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