

NBER WORKING PAPER SERIES

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ARE THERE LESSONS FOR EUROPE?

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Working Paper No. 2862

NATIONAL BUREAU OF ECONOMIC RESEARCH
1050 Massachusetts Avenue
Cambridge, MA 02138
February 1989

We thank the Olin Foundation for support. Brad DeLong, our Princeton colleagues, and members of the Berkeley macro history seminar provided helpful suggestions. This paper is part of NBER's program in Economic Fluctuations. Any opinions expressed are those of the authors not those of the National Bureau of Economic Research.

NBER Working Paper #2862
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ABSTRACT

In this paper, we consider whether there are lessons to be drawn from the experience of the American economy during the 1930's for the current European situation. The comparison reveals some important differences: In particular, the persistence of American unemployment in the 1930's reflected to a much greater degree a sequence of large destabilizing shocks, and much less a low-level equilibrium trap, than does modern European unemployment. The self-correcting tendencies of the 1930's U.S. economy were probably much stronger than is generally acknowledged.

However, the experience of the Depression era confirms the modern observation that the level of unemployment does not much affect the rate of inflation--an observation that, we argue, is consistent with macro theory. The Depression experience also supports the impression that political factors are important in real wage determination.

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Analysts of the contemporary European unemployment problem (Robert J. Gordon (1988) being the most recent) have with some frequency drawn comparisons with the experience of the 1930's. In one sense, this comparison is unwarranted: While today's European unemployment is a serious matter, its impact on human welfare is an order of magnitude less than what was wrought by the Great Depression. From a scientific perspective, however, the possibility that analogous mechanisms generated persistent unemployment in the 1930's and the 1980's makes the comparison an interesting one.

In this brief paper, we consider whether the American experience of the 1930's can teach us anything about three "puzzles" raised by the current European unemployment problem. These widely discussed issues are: 1) the persistence of high unemployment (equivalently, the apparent failure of the economy's homeostatic, or self-correcting, mechanisms); 2) the apparent lack of impact of high unemployment on the rate of inflation (the "floating NAIRU"); and 3) the phenomenon of increasing real wages despite high unemployment ("real wage rigidity"). We focus here on the manufacturing sector, where the data are best; obviously, extensions to other sectors would be desirable.

The comparison of America in the 1930's and Europe in the 1980's reveals some important differences; most strikingly, in the dynamics of unemployment. The persistence of unemployment in the 1930's reflected to a much greater degree a sequence of large destabilizing shocks (in 1929-33 and 1937-38), and much less a low-level equilibrium trap, than does modern European unemployment. The self-correcting tendencies of the 1930's economy were probably much stronger than is generally acknowledged.

However, the Depression era confirms the modern observation that the level of unemployment has little independent influence on the rate of

inflation--an observation that, we argue, is consistent with macro theory. The experience of the 1930's also supports the impression of students of the European situation that political factors are important in the process of real wage determination.

I. The Dynamics of Interwar Employment

How should we characterize the behavior of U.S. manufacturing employment during the 1930's? One thing that is certain is that, after contracting sharply between 1929 and 1933, manufacturing employment did not simply stabilize at a low level (as seems to have occurred recently in Europe). Between 1933 and 1937, employment in U.S. manufacturing rose by 3.4% per quarter, total labor hours by 4.4% per quarter, and output by 5.0% per quarter. The recession of 1937-38 was followed by another strong recovery: Quarterly growth rates for manufacturing employment, hours, and output in 1938-40 were 1.8%, 2.8%, and 4.9%, respectively.

An important question is whether the large fluctuations in interwar employment were due to a self-correcting tendency of the economy, as suggested by natural rate theory--or whether they were instead the product of a highly volatile economy with no endogenous stabilizing mechanism. A useful econometric framework for studying this question is the error correction model:

Let n_t^* be the (log of) the "normal" or "full-employment" level of employment. Then a simple error-correction model for (the log of) actual employment n_t , is given by

$$(1) \quad \Delta n_t = \text{constant} + a(L)\Delta n_t + b(n_{t-1}^* - n_{t-1}) + Z_t^c + e_t$$

where Δ is the difference operator, $a(L)$ is a lag operator intended to reflect short-run dynamics in employment, Z_t is a list of stationary variables affecting employment growth, and e_t is a stationary error term. The error-correction term, $b(n^*_{t-1} - n_{t-1})$, captures any tendency of employment to move toward its normal level after a displacement; the value of the error-correction parameter b , together with the values of the autoregressive parameters defining $a(L)$, determines the speed with which this return to normal occurs. If b is strictly positive, then n and n^* are cointegrated; i.e., lapses from full employment may be persistent but they ultimately disappear. If b is zero, then n and n^* may not be cointegrated, and actual and full employment may drift permanently apart.

We estimated (1) using quarterly averages of monthly U.S. manufacturing employment data, for the period 1924:2 to 1941:4. The manufacturing labor force (n^* in this application) was taken to be the total U.S. labor force, as estimated by Lebergott (1964), times the fraction of the U.S. labor force employed in manufacturing in 1929:1. Four lags of actual employment growth and seasonal dummies were included. For Z_t we used the current and once-lagged value of "unexpected inflation", as a measure of aggregate demand shocks. (Unexpected inflation was measured as the residual from a prediction equation for inflation, estimated on pre-1930 data and using lagged inflation and commercial paper rates as predictors.) When unexpected inflation is put in (1), that equation becomes what might be called an error-correction Phillips curve (ECPC). The ECPC collapses to a conventional, static, expectations-augmented Phillips curve if $b=1$, $a(L)=0$, and $c(L)=c$; but in general the ECPC allows for richer employment dynamics than a standard Phillips curve.

Two main results emerge from the estimation. First, unexpected inflation enters the equation with the right (positive) sign and with high statistical significance.¹ Second, the error-correction parameter b is estimated to be .15, with a marginal significance of .06 under the null of no cointegration of n and n^* .² Together with the estimates of $a(L)$ (which are small and negative), this estimate of b implies rather rapid movement of the economy toward full employment. For example, after a negative disturbance to the steady state, the economy is estimated to make up over half of the difference between actual and full employment in the first three quarters after the shock. Similar results are obtained 1) when unexpected inflation is defined as the residual of a prediction equation estimated over the entire sample; 2) when the real value of the liabilities of failing banks was used in the place of unexpected inflation (as an alternative measure of macro shocks); and 3) when unanticipated changes in real government spending or the deficit were added to (1). The results are also unchanged when actual rather than "unexpected" inflation is included in (1), and there is not much to choose between the two specifications. We will return to the significance of this last finding in a moment.

Can it really be that the 1930's U.S. economy was a "natural rate" economy, rather than a "low-level trap" economy (as it has most usually been characterized)? To dispute this conclusion, one has to argue either that the 1929-33 and 1937-38 downturns were endogenous developments in the labor market, not the result of outside forces; or, that the periods of strong recovery (particularly 1933-37) were due only to policy or other exogenous developments.³ However, the first of these potential arguments is unreasonable; particularly for 1929-33, it is easy to identify forces outside the labor market that depressed the economy. The second argument may bear

further investigation. Our own view at present is that the New Deal is better characterized as having "cleared the way" for a natural recovery (e.g., by ending deflation and rehabilitating the financial system), rather than as being the engine of recovery itself.

There are qualifications to the view that self-correcting mechanisms were strong in the Depression era: It cannot be denied, for example, that long-term unemployment was very important in the 1930's, and it may be that other sectors showed less "bounce" than manufacturing. But the contrast with modern Europe, where employment has stagnated despite the apparent absence of new shocks, seems marked.

II. The Floating NAIRU

What is called the "floating NAIRU" by Gordon (1988) is the phenomenon of continuing inflation despite unemployment above the natural rate. This phenomenon describes both recent Europe and New Deal America: Prices in the U.S. rose about 20% between Roosevelt's inauguration and the 1937 recession (but were flat for the rest of the decade).

But is the floating NAIRU really a puzzle? In fact, the standard equation employed by NAIRU proponents, which makes the inflation rate the dependent variable and the deviation of unemployment from its normal level the independent variable, is not implied by any well-articulated theory. Theory suggests instead that inflation will be determined by current and expected money supply and demand. Inflation surprises or (in models in which super-neutrality fails) inflation itself may then have effects on employment.⁴ That is, it is inflation rather than employment that should be the independent variable. This theoretically preferred formulation also appears to be

preferred empirically: As we discussed above, our estimates of variants of equation (1) are consistent with the existence of significant effects of either unanticipated or anticipated inflation on employment during the interwar period.

When we follow the theory and look to monetary conditions, it is not at all difficult to explain the behavior of the price level in the New Deal. Roosevelt was a strong believer in the importance of "reflation"; shortly after his inauguration he initiated a new, expansionary monetary regime which included, besides direct monetary expansion, abandonment of the gold standard and rehabilitation of the banking system. The higher inflation this created may have had some positive effects of its own on the recovery process, e.g., by reducing debt burdens and eliminating deflationary expectations⁵; but no paradox is implied by the simultaneous existence during the New Deal of high inflation and a high level of unemployment. Presumably monetary conditions also explain continued inflation in Europe today.

None of this resolves the puzzle of why unemployment in Europe has remained so high in the 1980's. But this discussion does suggest that, in the analysis of protracted high unemployment, we should pay less attention to price level adjustment and more attention to the real factors inhibiting recovery.

III. Real Wage "Rigidity"

It has often been noted that real wages in Europe seem to have been little affected by the level of unemployment. Similarly, in the U.S. the 1930's were a period of robust real wage growth. (This growth, we emphasize,

was a secular phenomenon, unrelated to the transient spikes in real wages induced by unanticipated deflation in 1931-32.)

This behavior of real wages cannot be explained in a vacuum, but must be related to several other trends in labor markets that developed in the Depression decade.

First, there was a significant decline over the period in average hours of work per week. Shorter work-weeks were initiated because firms chose to use "work-sharing" as a labor hoarding device, and possibly also because firms were concerned that too many layoffs might create pressure for some sort of company-sponsored unemployment compensation. The reduction in work-weeks was reinforced by legislation, unionization, and changing employment practices later in the decade.

Second, productivity growth during the 1930's was remarkably strong. An interesting feature of this productivity growth is that it occurred despite absolute declines in the capital stocks of most industries. (Indexes of employment-capital ratios in 1937 for industries for which we have constructed data, taking 1929 = 100, are as follows: steel, 123.5; textiles, 167.1; petroleum refining, 99.5; autos, 139.9; leather, 182.1; lumber, 122.7; rubber, 158.6; paper and pulp, 122.3.) American productivity growth in the 1930's, perhaps unlike some of the recent productivity growth in Europe, was not the result of capital deepening.

Third, industrial unionism achieved major successes during the New Deal period, organizing some important industries, winning concessions from previously organized industries, and more than doubling membership.

Finally, as documented in Sanford Jacoby's (1985) excellent book, there were significant changes in the employment practices of most firms during this period, most of them positive from the point of view of the worker. These

included a reduction of the authority of the foreman, stronger guarantees of employment stability, formalized grievance procedures--and higher wages.

How do all of these labor market trends fit together? A critical element in the story is surely the political environment. The landslide election of Roosevelt was a signal of changing public attitudes about government intervention in the economy. Along with the monetary and financial reform mentioned above, the New Deal also brought substantial labor market legislation. The direct effect of the new laws was actually rather uneven: The NIRA codes, for example, had a large effect on real wages in a few industries, such as leather and textiles, but little impact in others. Similarly, the direct effects of government-assisted unionization differed across industries. However, the indirect effect of Roosevelt's program was to convince employers that they would have to change employment practices in a way perceived to be more favorable to labor, or else risk the possibility that legislation or legislation-supported unions would enforce even more radical changes.

This political change was an important factor in each of the labor market trends mentioned above. For example, hours legislation and union agreements helped to institutionalize the shorter work-weeks originally put in effect by firms. As is discussed in Bernanke (1986), to the extent that workers have a reservation level of weekly earnings (as opposed to a reservation hourly wage), falling work-weeks will induce upward pressure on average hourly earnings. Similarly, government policies supported the trend to unionization and helped "convince" employers that they should adopt more liberal labor policies. Both of these trends led to higher real wages.

Perhaps the most interesting issue, though, has to do with why productivity grew during the decade, despite the weakness in capital

investment. One hypothesis is that the conventional rhetoric of the time, which said that higher wages and better treatment of labor would improve productivity, was actually correct. In this view, government action and the union threat may have induced employers, grudgingly, to adopt a profitable course; namely, for the first time on a widespread basis, to pay "efficiency wages". The view that the New Deal represents a transition period to an efficiency wage regime may help explain not only the real wage growth of the period, but the increase in productivity as well.

IV. Conclusion

The New Deal era, 1933-1941, was a period of general economic growth, set back only by the 1937-38 recession. This economic growth occurred simultaneously with a real wage "push", engineered in part by the government and the unions. As we normally think of higher real wages as depressing aggregate supply, how can these two developments be consistent? If the "transition to efficiency wage" hypothesis is true, part of the answer may be that the higher wages to some extent "paid for themselves", through increased productivity of labor. Probably more important, though, is the observation that with imperfectly competitive product markets, output depends on aggregate demand as well as the real wage. Maybe Herbert Hoover and Henry Ford were right: Higher real wages may have paid for themselves in the broader sense that their positive effect on aggregate demand compensated for their tendency to raise costs.⁶

What about Europe? There are some parallels with the 1930's, notably the irrelevance of the unemployment level to the determination of inflation and the political aspects of real wage growth. But there are also large

enough differences to make inferences about policy treacherous. In particular, Roosevelt's inflationary policies beginning in 1933 probably helped increase employment because they were part of a financial rehabilitation program, and because it was important to reverse the deflationary expectations of the previous years; it does not necessarily follow that inflating would help Europe today. Similarly, the real wage increases of the New Deal may not have hurt recovery, because of their positive effects on productivity and aggregate demand. But again, we certainly would not want to conclude that higher real wages in Europe would be beneficial.

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¹ The marginal significance is .002. We did not correct for the bias in the standard error which arises because "unexpected inflation" is the residual from a first-stage regression, but it is unlikely that this correction would change the basic result.

² The t-statistic is 2.55. However, under the null the "t-statistic" may not have a standard distribution, since if n and n^* are not cointegrated and are individually not stationary, then $n-n^*$ will not be stationary. The marginal significance level was therefore estimated by a small Monte Carlo study (100 replications).

³ Econometrically, the first hypothesis corresponds to setting $Z_t=0$ in (1); the second, to making one element of Z_t a dummy equal to one for 1933-37. Either change makes it impossible to reject $b=0$ at the .10 significance level, once a correction is made for the non-standard distribution of the estimate of b .

⁴ The Fischer-Taylor contract model or the Lucas aggregate supply curve implies that unanticipated inflation or deflation will affect employment, as do "debt-deflation" theories. For a model potentially relevant to the Depression in which superneutrality fails, see DeLong and Summers (1986).

⁵ The expectational effect is emphasized by Temin and Wigmore (1988). For a contemporary account of Roosevelt's monetary regime change, see National Industrial Conference Board (1934).

⁶ The aggregate demand argument does not require the assumption (which is inconsistent with life cycle theory) that workers have systematically higher marginal propensities to consume. The existence of capital market restrictions on borrowing against future labor income, plus the assumption that workers perceived their incomes in the Depression as being below their permanent incomes, is sufficient.