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THE MICROECONOMICS
OF DEPRESSION UNEMPLOYMENT

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ABSTRACT

Microeconomic evidence reveals that the incidence and duration of unemployment in the 1930s varied significantly within the labor force. Long-term unemployment, which was especially high by historical standards, may have been exacerbated by federal relief policies.

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I.

Between 1931 and 1940 the aggregate unemployment rate, including persons holding so-called "work relief" jobs, never dipped below 14 percent. Why were unemployment rates so high for so long? How can one reconcile persistently high unemployment with the behavior of real wages, which rose throughout much of the decade? Answers to these questions have been pursued from a variety of macroeconomic perspectives, but there is yet little consensus on the relative merits of different theories.¹

This paper is a preliminary report on a new project dealing with microeconomic aspects of labor market behavior during the Great Depression. The project is motivated by a belief that further insights into the economy of the 1930s can be gleaned from disaggregated data, which have been relatively neglected by modern scholars.² Here I examine the characteristics of the unemployed and the duration of unemployment in the 1930s. The unemployed were drawn disproportionately from the low-wage portion of the labor force. There was an unusually large fraction of persons unemployed for over a year, which kept aggregate unemployment rates high. Federal relief policies designed to aid the long-term unemployed may have exacerbated the difficult problem of reducing long-term unemployment. Implications of these findings for understanding macroeconomic events are briefly addressed.

II.

Table 1 contains selected evidence on the characteristics of the unemployed and on the duration of unemployment from 1930 to 1937. Unemployment followed a U-shape pattern with respect to age. Those out of work were more likely to be blue-collar workers or the unskilled. Within occupations the unemployed had fewer years of schooling. Workers in construction and durable goods manufacturing experienced higher unemployment than workers in the service sector.

Initially quite low, long-term unemployment (over a year) became common as the downturn progressed. Data from 1930 for Buffalo, New York, reveal that fully 21 percent of the city's unemployed labor force had been out of work for over a year, compared with 9 percent in 1929. According to the state census of 1934, 61 percent of Massachusetts unemployed had been out of work a year or longer. Similar levels of long-term unemployment prevailed in Philadelphia in 1936 and 1937.³

Detailed evidence on unemployment towards the end of the Great Depression is available in the public use sample of the 1940 census.⁴ The data I examine here refer to non-farm males (wage and salary workers) between the ages of 14 and 64. Information is given on employment status in the survey week (March 24-30, 1940), the number of weeks of unemployment for those unemployed in the survey week, and weeks worked in 1939. Duration of unemployment refers to the number of weeks since the

person last held a private sector or non-relief government job; or, if he never held such a job, the number of weeks since he began looking for work. Persons "employed" by the Works Progress Administration (WPA) or related federal or state relief agencies were separately identified. Weeks worked in 1939 were reported for persons on work relief, even though they were officially counted as unemployed.⁵

Evidence on personal characteristics by employment status is shown in Panel A of Table 2. Approximately 15 percent of the sample was officially counted as unemployed. Slightly more than a third of the unemployed held work relief jobs. As in Table 1, unemployment varied by age and other personal characteristics. The unemployed were older, single, foreign-born, urban, concentrated in the Northeast, and had completed, on average, 1.5 fewer years of schooling. They were far more likely to be unskilled laborers, working in construction, than were the employed.

Persons with work relief jobs differed from other unemployed workers. They were younger; more likely to be married, non-white, rural; and less likely to be foreign-born or living in the Northeast.⁶ On average, they had even less schooling than other unemployed workers. Instructions to enumerators specified that the occupation and industry of persons on work relief pertained to their work relief jobs. Usual occupation and industry of employment, however, were reported for so-called "sample line" people. According to these data, half of the sample line persons

on work relief reported their usual occupation to be unskilled labor; 59 percent claimed their usual industry was construction.

Panel B of Table 2 shows the distribution of weeks unemployed in the census sample. Among those not on work relief, the proportion declined steadily as the number of weeks increased. Among persons with work relief jobs at the time of the census, the proportion rose from 0-13 weeks to 14-26 weeks, and declined thereafter. Still, 32 percent of unemployed persons not on work relief had been out of work for a year or longer; a staggering 56 percent of persons on work relief had been unemployed for more than a year. A more detailed breakdown (not shown) reveals that 12 percent of persons with relief jobs had not held a private sector or non-relief job for 5 years or longer.

Panel A of Table 3 gives the distribution of weeks worked in 1939 among persons who reported (a) 65 weeks or more of unemployment as of March, 1940 (b) held a work relief job at the time the census was taken. Fully half of the long-term unemployed on work relief worked 39 weeks or longer in 1939; 23 percent worked the full year (52 weeks). Given census definitions, they could not have been doing anything other than working full-time for the WPA. The quantitative significance of "permanent" WPA employment does not just apply to 1940; the proportion of permanent WPA employees was probably higher in 1937 and 1938. According to a WPA study, 57 percent holding relief jobs in September of 1937 held relief jobs continuously through

to February of 1939. Fully 16 percent of all persons with relief jobs in February of 1936 worked continuously through to February of 1939.⁷

The quantitative significance of permanent WPA employment suggests that the long-term unemployed may have responded differently to improved economic conditions, depending on whether or not they held work relief jobs. Some preliminary evidence of such differences is presented in Panel B of Table 3. Aggregate demand is measured by state-specific indices of employment growth constructed by John Wallis.⁸ The hypothesis to be investigated is whether the probability of long-term unemployment was lower in states that had a more robust recovery in terms of employment growth. The results indicate that employment growth had an insignificant (though negative) effect on the probability of holding a long-term job with the WPA; thus the long-term unemployed on work relief were not very responsive to improved economic conditions. Long-term unemployed not on work relief, however, were responsive to improved economic conditions -- the incidence of long-term unemployment, among persons not on work relief, was significantly lower in states with higher-than-average rates of employment growth.

III.

In the traditional, Keynesian model, persistence of high unemployment is the outcome of sluggish adjustment of nominal

wages and of insufficient aggregate demand. Although output prices fell, various economic, legal, and institutional factors kept nominal wages from falling in tandem to restore full employment. Firms did not follow "a policy of aggressive wage cutting" when unemployment was high because such a policy hurt worker morale and the firm's reputation.⁹ New Deal legislation created a climate in which wage cutting was difficult. The upshot was high unemployment, which remained high until reduced by the insatiable demands of a war-time economy in the early 1940s.

The notion that nominal wages in the 1930s were insufficiently flexible comes largely from aggregate wage series. Such series, however, pertain to the employed labor force: they are not adjusted for the characteristics of the unemployed or for the duration of unemployment. Because the unemployed were drawn disproportionately from the low-wage portion of the labor force and because such workers were more likely to remain unemployed for long periods of time (whether or not they got on work relief), aggregate wage data overstate nominal inflexibility.

More robust aggregate demand in the late 1930s would have reduced the incidence of long-term unemployment. My econometric results suggest that this reduction would have bypassed some fraction of long-term unemployed who held work relief jobs. That many WPA workers would have tried to keep their jobs in the face of (counterfactual) increases in aggregate demand may seem puzzling.¹⁰ The WPA published statistics on rates of assignment

to and separations from its projects, and these suggest a turnover rate similar to the private sector.¹¹ WPA jobs were poorly paying, compared with private sector jobs. Standard WPA turnover statistics, however, refer to projects, not employment.¹² Many WPA employees were reluctant to leave and search for a private sector job because they believed their prospects of finding equally stable work were nonexistent.¹³ As one WPA worker put it:

Why do we want to hold onto these jobs? Well, you know, we know all the time about persons who are on direct relief ... just managing to scrape along[.] ... My advice, Buddy, is better not take too much of a chance. Know a good thing when you got it.¹⁴

To encourage its workers to leave, the WPA entitled persons who took private sector jobs "immediate reassignment" to work relief projects "if they ... lost their jobs through no fault of their own."¹⁵ Conscious that it was incurring large political costs because so many of its workers held relief jobs for a long time, the WPA summarily dismissed 783,000 of them in August 1939, only to re-employ 57 percent of those so dismissed a year later.¹⁶

By providing an alternative to search (which many WPA perceived, correctly or not, to be fruitless) work relief may have lessened downward pressure on nominal wages.¹⁷ The demand

for labor may also have been altered in subtle ways. In the early twentieth century unemployment was "egalitarian", spread relatively evenly in its incidence among the working class. Unemployment spells were generally brief; except among the infirm, long-term unemployment was uncommon, even in severe downturns.¹⁸ As the labor market evolved, so too did the nature of unemployment. Firms increasingly adopted bureaucratic methods of hiring and firing workers, along with seniority-based wage scales.¹⁹ The trend towards bureaucratic methods accelerated during the 1930s. The time was ripe for more careful screening of job applicants, picking and retaining the most productive workers, weeding out the rest. Those with few occupation skills, the elderly (who were expensive to rehire), and the poorly educated had a difficult time finding work, ending up unemployed for lengthy periods of time. Because of opposition by organized labor, however, the WPA made few efforts to upgrade the skills of the long-term unemployed or to improve their education. Working for the WPA may have stigmatized individuals, making it even more difficult for the long-term unemployed to find a stable, private sector job.²⁰

Ultimately, the dilemma of long-term unemployment was "solved" by the massive increase in labor demand associated with World War Two. What was significant about war-related demand was not just the magnitude of the increase, but that the increase was persistent. Faced with severe shortages of skilled and semi-skilled labor, employers were willing to hire and train the long-

term unemployed. Convinced the increased demand for their services was more than transitory, the long-term unemployed were willing to give up WPA employment. Unemployment rates declined sharply, never again reaching aggregate levels commonly observed in the 1930s.

IV.

The unemployed of the 1930s were disproportionately low-wage workers who, once the Depression was underway, tended to be out of work for lengthy periods of time. A significant fraction of these ended up on work relief for lengthy periods of time because, compared with the jobs that might have been available to them in the private sector, WPA jobs were stable. Higher levels of aggregate demand in the late 1930s would have lowered the incidence of long-term unemployment, but only among those who were not on work relief. As a result, the economy of the 1930s ended up with a peculiar combination of rising real wages for those who were employed, long unemployment durations for those who were unemployed, and high aggregate unemployment rates.

NOTES

1. Martin Baily, "The Labor Market in the 1930s," in James Tobin, ed. Macroeconomics, Prices and Quantities: Essays in Honor of Arthur Okun (Washington, D.C., 1983).
2. Exceptions are Ben Bernanke, "Employment, Hours, and Earnings in the Great Depression: An Analysis of Eight Manufacturing Industries," American Economic Review 76 (March 1986), 82-109; and John Joseph Wallis, "Employment in the Great Depression: New Data and Hypotheses," Explorations in Economic History 26 (January 1989), 45-72.
3. Gladys Palmer, Employment and Unemployment in Philadelphia in 1936 and 1937 (Philadelphia, 1938).
4. The 1940 census sample is arranged into 20 sub-files, each a random sample of the population. My analysis is based on the first sub-file.
5. Michael Darby ("Three and a Half Million U.S. Employees Have Been Mislaid: Or, An Explanation of Unemployment, 1934-1941," Journal of Political Economy 84 (February 1976), 1-16); see also J. Kesselman and N.E. Savin, "Three and a Half Million Workers Never Were Lost," Economic Inquiry 16 (April 1978), 176-191.
6. The underrepresentation of relief jobs in the Northeast appears to undercut the WPA's belief that the distribution of relief jobs matched the distribution of population; see Robert A. Margo, "Interwar Unemployment in the United States: Evidence from the 1940 Census Sample," in B. Eichengreen and T. Hatton,

- Interwar Unemployment in International Perspective (Dodrecht, The Netherlands, 1988), p. 350.
7. U.S. Federal Works Agency, Final Report of the WPA Program, 1935-1943 (Washington, D.C., 1946), p. 41.
 8. Wallis, "Employment in the Great Depression."
 9. Baily, "The Labor Market", p. 53.
 10. It is possible the long-term unemployed on work relief differed from the non-relief long-term unemployed in unobservable ways, which made them less employable had (marginal) improvements in aggregate demand occurred. In this case, the WPA would not have had a causal effect on re-employment probabilities. I am grateful to Charlie Calomiris for this point.
 11. Margo, "Interwar Unemployment," p. 345.
 12. U.S. Federal Works Agency, Final Report, p. 32.
 13. Turnover statistics in manufacturing suggest that the average duration of new jobs created in the 1930s was very low by historical standards; see Baily, "The Labor Market," pp. 28-31, 48.
 14. Quoted in E.W. Bakke, The Unemployed Worker (New Haven 1940), pp. 421-422.
 15. U.S. Federal Works Agency, Final Report, p. 32.
 16. U.S. Federal Works Agency, Final Report, p. 41.
 17. For a similar conclusion, see Baily, "The Labor Market," p. 53.
 18. Alexander Keyssar, Out of Work: The First Century of Unemployment in Massachusetts (Cambridge, MA, 1986); Robert A. Margo, "The Incidence and Duration of Unemployment: Some Long-Term Comparisons," Economics Letters 32 (January 1990), 217-220.

19. Sanford M. Jacoby, Employing Bureaucracy: Managers, Unions, and the Transformation of Work in American Industry, 1900-1945 (New York, 1985).

20. Richard Jensen, "The Causes and Cures of Unemployment in the Great Depression," Journal of Interdisciplinary History (Spring 1989), 553-583.

Table 1

Characteristics of the Unemployed: Selected Surveys, 1930-38

A. Unemployment Rates by Age

	15-19	20-24	25-34 (%)	35-44	45-54	55-64
Penn. 1934	60.0	36.0	22.0	19.0	22.0	27.0
U.S., 1937	26.0	18.0	13.0	13.0	16.0	19.0

B. By Occupation and Schooling

	Michigan, 1935	Philadelphia, 1936	Dif. in
	Both sexes	Males	Schooling
	% Unem.	% Unem.	
Prof-Mang.	6.1%	12.1%	1.4
Clerical	10.3	21.3	0.9
Skilled	17.0	}29.2	0.3
Semi-skilled	14.8		
Unskilled	26.2	43.9	1.6
Service		29.0	0.2
Government		5.1	0.2

Dif. in schooling: difference in median years schooling between employed and unemployed males; Service: Domestic and Personal service

C. Industry Unemployment Rates, U.S.

	Oct. 1930	March, 1933	May, 1938
Agriculture	8.2%	14.5%	10.2%
Manufacturing	17.7	40.3	27.7
Construction	13.1	73.3	55.0
Transportation	9.1	39.7	37.1
Public Util.	4.3	29.0	27.2
Trade/Finance	4.7	22.9	18.5
Services	3.7	16.2	1.8

D. Duration of Unemployment, Currently Unemployed

	Buffalo			Mass.
	1929	1930		1934
<10 weeks	68.4%	53.2%	0-3 mos.	11.3%
10-19	12.3	17.9	3-6	12.1
20-29	6.2	14.3	6-12	14.0
30-39	3.1	7.9	>=12	62.6
40-51	0.7	5.6		
>=52	9.3	21.1		

Table 1 (continued)

Sources: New York Department of Labor Special Bulletin No. 167, "Unemployment in Buffalo, November 1930" (Albany, November 1930); Gladys Palmer, "Employment and Unemployment"; U.S. Federal Works Agency, "Report on Public Assistance," typescript (New York 1939).

Table 2

Characteristics of Unemployed, March 1940:
Non-Farm Males, Ages 14-64

A. By Employment Status

Sample	Employed	Unemployed	Work Relief	Unemployment Rate	
				Darby	BLS
Age:				9.4%	14.7%
14-24	16.0%	13.2%		8.0	12.9
25-34	31.3	22.7	29.8	7.0	12.1
35-44	25.0	25.6	28.1	9.6	15.5
45-54	18.1	22.4	17.3	11.4	16.4
55-64	9.6	16.1	11.2	14.7	20.5
Married	67.9	56.0	73.0	7.8	13.6
Non-white	7.7	7.4	16.2	8.6	19.2
Foreign	13.7	19.5	11.2	13.1	17.3
Yrs. sch.	9.5 yrs.	8.1	7.6		
Location:					
Northeast	32.3	44.6		12.7	17.0
Midwest	28.1	26.1	33.7	8.7	15.0
South	25.8	16.4	23.0	6.2	11.1
West	13.8	12.9	16.8	8.8	15.2
SMSA	76.2	79.9	67.3	9.9	14.6
Occupation:					
Prof./					
Tech.	6.4	1.7	4.1		
Managerial	8.0	2.6	2.6		
Clerical/					
sales	17.3	10.9	7.1		
Skilled	19.1	23.0	15.3		
Semi-					
skilled	25.3	25.9	15.8		
Service	12.8	10.6	5.1		
Unskilled	11.1	25.3	50.0		
Industry:					
Mining	2.9	2.9	2.0		
Cons.	7.0	25.6	59.7		
Non-dur.					
manuf.	16.9	17.0	5.1		
Dur.					
manuf.	22.0	18.8	8.1		
Trans./					
comm./					
public					
utilities	11.7	7.5	5.1		
Trade	13.7	13.2	4.1		
Finance/					
real					
estate	6.5	7.8	3.6		
Personal					
services	5.3	4.6	4.6		
Prof.					

Table 2 (continued)

services	4.6	1.7	3.1
Govt.	9.4	0.9	4.6
N	3,146	348	196

B. Distribution of Weeks Unemployed, Currently Unemployed

	Not on Work Relief	On Work Relief	Total
0<=x<13 wks.	28.1%	9.5%	20.8%
13<=x<26	22.7	16.3	20.2
27<=x<39	9.2	10.2	9.6
39<=x<52	8.3	7.6	8.0
52<=x	31.6	56.3	41.5

Notes to Panel A: Unemployment Rates: Darby: counts persons on work relief as employed; BLS: counts persons on work relief as unemployed. Occupations and industries of persons on work relief refer to usual occupation and industry, as calculated from "sample line" individuals; see the text.

Source: Panels A, B: first file, public use sample of 1940 census

Table 3

The Long-Term Unemployed on Work Relief

A. Weeks worked in 1939: Non-Farm Males on work relief in 1940 with 65 weeks or more of unemployment

	Weeks Worked				
	1-13	13-27	29-39	39-51	52
Percent	7.0%	21.4%	22.2%	25.6%	23.8%
N=370					

B. Characteristics of long-term unemployed not on work relief and long-term unemployed on work relief.

	Not on work relief		On work relief	
	Mean	σ	Mean	σ
Age:				
25-34	0.21	0.41	0.19	0.39
35-44	0.29	0.46	0.31	0.46
45-54	0.20	0.40	0.28	0.45
55-64	0.21	0.41	0.13	0.33
Married	0.54	0.50	0.78	0.41
Nonwhite	0.10	0.30	0.12	0.32
Foreign	0.26	0.44	0.07	0.26
Yrs. sch.	7.59	3.57	7.40	3.41
Location:				
Midwest	0.26	0.44	0.39	0.49
South	0.07	0.26	0.21	0.41
West	0.06	0.24	0.13	0.34
SMSA	0.94	0.24	0.73	0.44
N	179		196	

Not on work relief: persons who were unemployed for 65 weeks or longer and who worked 0 weeks in 1939; On work relief: persons who were unemployed 65 weeks or longer and who worked 39 weeks or more for the WPA in 1939.

C. Coefficients of Employment Growth, Logistic Regressions of Probability of Long-Term Unemployment

	Not on work relief	On work relief
B	-0.85*	-0.20

*Significant at 5% level. Employment growth: percentage growth of employment in 1940 state of residence from 1930 to 1940; see Wallis, "Employment in the Great Depression".

Source: Panels A,B: first file, 1940 census tape; Panel C: Margo, "Interwar Unemployment," p. 340.