EFFICIENCY WAGES, INSIDERS AND OUTSIDERS, AND THE GREAT DEPRESSION[1]

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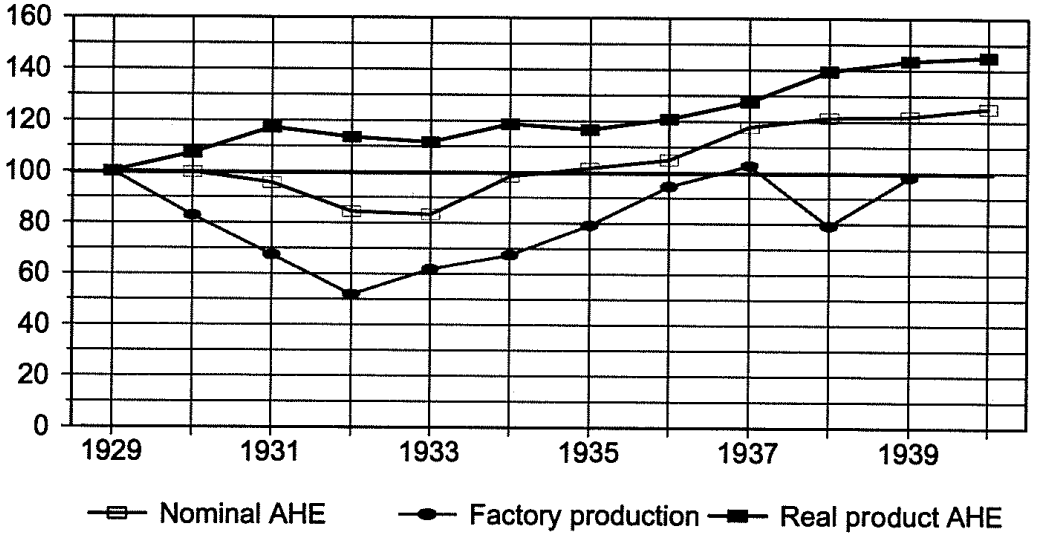
ABSTRACT

This paper uses available quantitative and qualitative evidence from the 1930s to evaluate two prominent explanations of the wage explosion of the New Deal years of 1933–41: efficiency wages and insider-outsider models. The quantitative evidence includes various data on wage changes, hours, turnover, and strikes. Economically-based efficiency-wage models and the insider-outsider model are found wanting as explanations of 1930s labor markets. Efficiency-wage theories that emphasize worker morale fare better. This paper explains the 1930s wage burst as an interaction between New Deal policies and efforts by employers to maintain worker morale and productivity in a climate of growing union strength.

The Great Depression, as the ultimate example of a persistent labor market disequilibrium in American macroeconomic history, is inevitably seen by many as the ultimate case of sticky wages. Whatever importance one attaches to wage stickiness as a causal factor behind the mass unemployment of the 1930s, the failure of that unemployment to exert greater downward pressure on wages is striking. The downward rigidity of wages in the Great Contraction of 1929–33 seems to receive the most attention from economic historians, but nearly all of the lasting increase in real wages came during the New Deal years of 1933–41.[2] (See Figure.) From 1929 to June 1933, the average hourly earnings (AHE) of factory workers, measured against wholesale prices, rose just 4.5% in real product terms. (In nominal terms, they fell 23.7%, from $.590 to $.450.) From June 1933 when Congress passed the National Industrial Recovery Act (NIRA), the centerpiece of President Franklin D. Roosevelt's First New Deal, to December 1940, real product AHE in manufacturing rose by 39.6%. (In nominal terms, they rose to $.754, for a gain of 67.6%.)[3] Some economic historians have explained the 1930s wage explosion by connecting the institutional changes brought by the New Deal with either of two prominent modern theories of wage rigidity and unemployment: efficiency wages and insider-outsider models.

Undoubtedly, the New Deal did bring sweeping institutional changes to American labor markets, and those changes surely helped propel the wage gains of the 1930s. The industry "codes of fair competition" passed in connection with the NIRA typically included minimum hourly wages and often forbade cuts in *weekly* wages, which in combination with the codes' limitations on weekly hours often required higher hourly wages for virtually all workers. The NIRA's Section 7(a), and then the Wagner Act of 1935, gave unions government protection, thereby greatly strengthening the hand of organized labor. However, these institutional changes were less binding than they may first appear.

Figure
Real & nominal hourly earnings, 1929-40



The NIRA codes were in effect for less than two years, because of the Supreme Court's voiding of the measure as unconstitutional in May 1935; the Fair Labor Standards Act (FLSA), which established the federal minimum wage on a permanent basis, did not become effective until October 1938 and initially set the minimum wage at just 25 cents an hour (raised to 30 cents in October 1939), too low to be binding for more than a handful of factories. Much of the advance of wages actually occurred in the interval when neither the NIRA nor the FLSA was in effect. The extraordinary surge in union and strike activity during the New Deal years surely accounts for no small part of that advance, but as late as 1939, more than 70% of the factory labor force was still non-union.[4] Thus the 1930s wage explosion seems to be attributable to more than just the New Deal and unions, and modern theories of wage rigidity may help provide a fuller account of America's transition to a true "high-wage economy."

Two such theories that have lately been invoked in explanations of the 1933–39 wage explosion are efficiency wages and insider-outsider models. Gavin Wright (1987) wrote that "the crucial period" for the development and spread of efficiency-wage policies was from 1910 to 1940, and called it a vital topic for future study.[5] The key application of efficiency-wage models to the 1930s is by Richard J. Jensen (1989), who focuses on the New Deal years as an era of efficiency wages, in which employers viewed high-wage policies as desirable because they would attract better, more productive workers.[6] Alternatively, Peter Temin (1989, 1990, 2000) has advanced the "hysteresis" model of wage setting, which itself owes much to the insider-outsider model, as an explanation of the surge in real wages during the New Deal years of 1933 to 1940.[7] In particular, writes Temin, the 20 percent increase in nominal wages in the National Recovery Administration's

(NRA's) first year (1933–34) reflects rent-seeking behavior by insiders and the exclusion of outsiders from the wage-setting process.[8]

Normally the economist's preferred arena for testing competing theories is multiple regression analysis, but few of the leading explanations of wage stickiness fit neatly into a regression framework. As a result, such theories are rarely tested at all. Arguably, an evaluation of these theories as they apply to the Great Depression requires making use of whatever evidence, both quantitative and qualitative, is available. The heart of this paper represents my attempt to do so. Of necessity, the data sources are far-flung. Data on hourly earnings and wage-rate changes are available from regular and special surveys by the U.S. Bureau of Labor Statistics (BLS) and the National Industrial Conference Board (NICB). The NICB data in M. Ada Beney (1936) and NICB (1940) provide further disaggregation of workers' wages, hours, and employment into three distinct occupational groups (unskilled males, skilled and semi-skilled males, females) in 25 manufacturing industries. Survey evidence of company and worker motivations appears in key NICB reports on salary and wage policy and in E. Wight Bakke's (1940) ethnographic study.[9] Basic figures on union membership, strikes, and turnover are available from the BLS (1937) and W.S. Woytinsky (1942).[10] The accounts of contemporary business consultants (for example, in *Babson's Reports*), labor publications, and researchers shed some light on these issues as well. Internal correspondence among members of the Special Conference Committee, an extraordinary group of a dozen of the country's largest corporations that met secretly and regularly to discuss labor issues, provides important glimpses into what businessmen of the time were saying privately.[11] Finally, several recent secondary sources provide useful background on specific companies and industries.

Evidence Bearing on Theories of Wage Rigidity

Efficiency wages

At first glance, the applicability of efficiency wage theories to Depression labor markets seems rather limited. Most theories of efficiency wages offer explanations of why real wages are set above market-clearing levels (and thus offer an explanation of classical unemployment), but they do not require that real wages be rigid in the face of rising unemployment or declining consumer prices. In the "shirking" model proposed by Carl Shapiro and Joseph Stiglitz (1984), for example, unemployment acts as a worker-discipline device, so a cyclical increase in unemployment provides an extra measure of discipline and causes the equilibrium real wage to fall.[12] Likewise, in Steven C. Salop's (1979) turnover model and Andrew Weiss's (1990) adverse-selection model, quit rates fall when labor-market conditions slacken, and thus should cause the equilibrium real wage to fall.[13] Even if we assume that workers' propensities to shirk or quit are wholly independent of labor-market conditions, we still need a rationale for that assumption, which economic theories of efficiency wages—that is, the shirking, turnover, and adverse-selection models—do not provide.

Jensen's (1989) thesis that the high-wage policies of American companies during the Depression were actually efficiency-wage policies draws on these economic models of efficiency wages. Elements of the turnover and shirking models of efficiency wages are present in Jensen's formulation, but the principal intuition is that of Weiss's adverse-selection theory of efficiency wages. According to Jensen, firms in the Depression paid above-market wages in order to attract a larger, better pool of applicants and retain their best workers. The unemployed did not exert effective downward pressure on wages because employers viewed them as inferior to their own workers. Jensen attributes the rapid increase in wages during the New Deal years to employers' rapid implementation of efficiency-wage policies. Such policies were successful, he writes, because "labor productivity rose in parallel with the cost of labor, thus vindicating the new managerial system."[14] Indeed, the increase in labor productivity during the New Deal years was impressive, averaging 3.0% annual growth in 1933–39. That growth is all the more impressive in view of the dismal business-investment performance of those years; the real net value of manufacturing capital in that period actually shrunk, and was consistently 20–25% below its 1929 level in the years from 1934 to 1939.[15] Thus we must eliminate capital deepening as a reason for the productivity growth of the New Deal years. Ben Bernanke and Martin Parkinson (1989), in an insightful short article, suggest that the period may have been one of transition to efficiency wages, in which "government action and the union threat may have induced employers grudgingly to adopt [the] profitable course" of moving to a high-wage, high-productivity regime.[16]

Referencing Sanford Jacoby's (1985) account of the rise of personnel management in the first half of the twentieth century, Jensen calls the new managerial system an efficiency-wage system. In the new efficiency-wage regime, "it was no longer true that firms could increase profits by cutting wages."[17] Therefore, firms' implementation of efficiency-wage policies in the 1920s explains why real hourly wages did not fall during the 1929–33 contraction, and the spread of such policies, in conjunction with New Deal initiatives aimed at raising wages, explains why wages rose so rapidly in 1933–40.

As noted above, however, these economic models of efficiency wages do *not* imply that wages will be rigid in the face of soaring unemployment. In Weiss's model, the acceptance wage of a worker is an increasing function of his labor endowment, but if this acceptance-wage function shifts downward in recessions, as seems plausible, then the efficiency wage would also fall. The "Roosevelt recession" of 1937–39, in which output and employment plunged even faster than during any equivalent interval of the Great Contraction of 1929–33, should therefore have been sufficient to compel a reduction in the efficiency wage; instead, real product hourly earnings continued their upward march in 1937–39. In addition, the evidence that Jensen supplies about how employers laid off their least-productive workers and perceived the long-term unemployed as low-grade workers actually undermines the adverse selection story, because it implies that employers were better able to observe individual worker productivity, or at least thought they were, than the adverse selection model assumes. Jensen himself writes, "Workers without the [productive] characteristics desired by management were not hired (except by

mistake—and then quickly fired)."[18] Such a claim is hard to reconcile with an adverse-selection story of the labor market or with efficiency-wage models in general.[19]

Altogether, Jensen's interpretation of Depression unemployment seems closer to a simple "efficiency" story than to an efficiency-wage story: the exogenous influences of New Deal policies and unions raised the real cost of labor, and firms responded by upgrading the quality of their labor, and did so not by investing in training but by weeding out their less efficient workers and replacing them with better ones. Some shakeout of less-efficient workers does appear to have occurred during the Depression: Robert A. Margo (1998) documents with Census data that the 1930s unemployed and relief workers tended to be less-skilled and less-educated, and E. Wight Bakke's (1940) survey of employers found that most made layoffs on the basis of efficiency.[20] This shakeout effect likely explains some of the growth in productivity during the 1930s, though certainly not all of it, since factory productivity fell during the contraction years of 1929–32 and 1937–38 when the shakeout should have been greatest.[21] Then again, as Jensen notes, there was considerable churning in the labor markets of the 1930s, with a surprisingly high rate of accessions (about 400,000 per month in 1933–39), so it is not implausible that many less-efficient workers were replaced with more-efficient ones.[22] Moreover, the number of emergency-relief workers under New Deal and other programs averaged over three million in 1933–40,[23] and it was widely believed that the Works Progress Administration (WPA) and other programs tended to employ low-grade workers. "The WPA became a national joke," wrote Herbert Stein (1994), "because of the commonly accepted picture that the work being done was useless and the workers indolent."[24] Thus the exodus of numerous low-productivity workers into unemployment and relief work could have boosted the productivity of the remaining manufacturing workers. To the extent that it happened, the replacement of less-productive with more-productive workers surely aided the persistence of the New Deal's high-wage regime.

Jensen's "efficiency" story of Depression unemployment appears to have some validity, but we must look elsewhere for a plausible efficiency-wage explanation of the period. One possibility is to use a different variant of efficiency wages, perhaps a sociological or "normative" one such as George A. Akerlof's gift-exchange model.[25] Bernanke and Parkinson, while not specifying a particular model of efficiency wages, seem to favor a morale-based version, as they link the payment of high wages not only to Jacoby's thesis about the spread of personnel management, which emphasized the contributions of personnel management to improved worker morale,[26] but also to "the conventional rhetoric of the time, which said that higher wages and better treatment of labor would improve productivity."[27] Jacoby regards the New Deal phase of the Depression as one of "two periods of crisis for the traditional system of employment," the other being World War I, in which tight labor markets and the pro-union National War Labor Board gave workers greater bargaining power than they had ever enjoyed before.[28] The contrast between the two periods may be instructive—despite the surge in unionization and labor-market tightness during WWI, real wages barely held steady in that inflationary episode, while factory productivity actually fell. By contrast, the significant increase in productivity in

1933–39 may have been partly due to higher real wages' promoting greater worker morale and also to the slack labor markets of the Depression, in which unemployment may very well have acted as a worker-discipline device in the midst of a high-wage regime.

Another possibly difficult hurdle for an efficiency-wage explanation of the Depression is the presence of nominal wage rigidity, since efficiency-wage models typically focus on the *real* wage. The stickiness of nominal wages in the Great Depression seems beyond dispute. Even after the economy began to recover after bottoming out in March 1933, mass unemployment persisted, and firms in many, perhaps most, industries could easily have reduced their wage scales and still been able to recruit as many workers as they needed. Yet nominal wage cuts were virtually non-existent during the New Deal years, even after the Supreme Court's voiding of the NIRA in mid-1935.

If we are to say that nominal wage rigidity is an outcome of efficiency-wage policies, then we need to provide a nominal anchor as part of our story. One such story might be that a worker's effort depends on his wage relative to other workers' wages, rather than on the absolute level of the wage. Keynes (1936) held that workers are more attentive to money-wage changes than to real-wage changes because their chief concern is how their wages compare with those other workers.[29] Any of the familiar efficiency wage theories—shirking, turnover, adverse selection, or morale—could easily be combined with Keynes's relative-wage assumption.[30] In a decentralized system of wage setting, such an outcome would seem highly probable. Another way in which nominal wage rigidity could be a by-product of efficiency wages relates to considerations of morale, as in Akerlof's gift-exchange theories and earlier explanations by Sumner Slichter (1929) and John Dunlop (1938).[31] Stiglitz (1986) notes that if workers tend to be fixated on money wage rates rather than real wage rates, then even if that fixation is irrational, "it pays for firms to reflect those irrationalities in their wage-setting policies." If that fixation is strong enough, even in conditions of depression and deflation, so long as "each firm believes that all others are going to leave money wages unchanged, it would not pay any firm to change its (money) wage."[32] That is, they should not cut wages if the payroll savings of a prospective wage cut are smaller than the expected loss arising from reduced productivity and other adverse effects.

Of those two nominal anchors, the relative-wage assumption turns out to conflict with some key empirical regularities of American labor markets in the first third of this century. First, not only were industry-level hourly wage differentials in 1929 manufacturing much wider than can seemingly be explained by compensating differentials or human capital differences—for example, hourly wages of unskilled males ranged from 36.2 cents in Northern cotton mills to 60.4 cents in rubber plants—but those differentials widened in the contractions of 1929–33 and 1937–39, as wages fell more in low-wage industries than in high-wage industries.[33] If workers resisted cuts in their wages relative to workers in other industries, that resistance was unsuccessful for a great many of them. Second, the belief that workers do not resist real wage reductions due to inflation finds little empirical support. Patterns of strike activity and union strength suggest that workers were sufficiently attentive to inflation to fight for cost-of-living increases.

While it is possible that workers respond asymmetrically to real wage reductions due to modest rates of inflation and reductions due to modest nominal wage cuts, wage strikes and union growth during World War I and its immediate aftermath provide evidence that workers strongly resisted the erosion of their real wages by rapid price increases. Even the relatively moderate inflation of 1933–37, in which consumer prices rose at an annual rate of just 2.6%, apparently provoked a number of strikes for wage increases, independent of the explosion of strikes for union recognition at that time.[34] Lyle W. Cooper (1932) wrote that "substantial increases in the cost of living" were the factor "more than any other which induced wage earners to turn to labor organization as a means of more rapidly overtaking mounting living expenses."[35] He added that the unions' weakness in the 1920s owed much to the near-perfect stability of consumer prices, which combined with modest increases in nominal wages to yield higher real wages; that assessment has been echoed by Irving Bernstein (1960), among others.[36]

Like other efficiency wage models, gift-exchange theories and other morale-based models of efficiency wages do not offer an independent explanation of cyclical or nominal wage rigidity. Even if the efficiency wage is invariant to labor market conditions, as in Robert Solow (1979) or Akerlof and Yellen (1990), declining consumer prices such as those of 1937–39 (when prices fell by more than 6 percent, according to data in Sayre 1948) should result in nominal wage reductions.[37] "Plausibly, however, the level of nominal wages perceived to be fair does not rapidly change in proportion to shifts in nominal aggregate demand";[38] likewise, the perceived "fair wage" may react sluggishly to changes in the price level. If we expand the model so that workers are concerned not only with fairness but also with their standard of living, then the nominal hourly wage rate that is perceived to be fair may adjust even more sluggishly to declining outside opportunities and prices. If employers respond to a decline in demand by cutting back weekly hours to the point that real weekly pay falls—as in the 1937-38 contraction, when real weekly earnings in manufacturing fell more than 15 percent—then workers will tend to view money wage cuts as not only unfair but also a further diminution of their standard of living. If the statements of organized labor were at all reflective of the thinking of ordinary workers on this issue, then this view seems close to the mark. In a 1931 editorial opposing wage cuts, the *American Labor Legislative Review* wrote, "Labor officials claim that although there has been a decrease in the cost of living this advantage to the laborers has been more than offset through losses due to unemployment and part time work."[39] Of course, we still need an explanation for the hours cutbacks, which are not among the predictions of efficiency wage theories. For now, however, let us compare the predictions that morale-based models of efficiency wage models do make against the experience of the 1930s.

Akerlof and Yellen (1990) claim that their fair wage-effort model explains two empirical regularities of modern-day labor markets: wage compression, by which low-skill workers earn more relative to high-skill workers than they would under perfect competition (and consequently have higher unemployment rates), and the strong positive correlation between industry profits and industry wage levels. Those regularities seem to have been present in the interwar era as well. Among the NICB's 25 manufacturing indus-

tries, pairwise correlations between the 1929 AHE levels of the three different occupational groups are positive and at least weakly significant in all cases (see Table 1). If we drop the three industries in which the skilled and semi-skilled workers were unionized and apparently commanded union wage premiums, the correlation between the AHE of unskilled males and skilled and semi-skilled males is 0.76, which is significant at a 1 percent error level; the correlation between the AHE of females and skilled and semi-skilled males drops a bit, but remains significant at a 10 percent error level. Thus we find some support for the prediction that wage premiums for skilled workers in an industry carry over to their less-skilled counterparts. The prediction that more profitable industries pay higher wages has received confirmation from earlier studies that ran industry-level regressions for the years 1929 and 1939.[40]

Also in keeping with the predictions of the fair wage-effort model, companies seem to have tried not to upset the established wage differentials within their establishments. In that model selective wage cuts would be damaging to workers' notions of internal wage equity and hence to their work effort. By contrast, turnover models of efficiency wages imply that the wages of skilled and semi-skilled workers should have been more resistant to cuts than those of unskilled workers, since replacement costs were relatively low for unskilled workers, who by the NICB's definition held jobs that required no

Table 1

Correlations Between Average Hourly Earnings of Different Occupational Groups, 1929
(t-statistics, followed by p-values, from bivariate regressions in parentheses)

	Skilled and semi-skilled males	Skilled and semi-skilled males*	Unskilled males
Unskilled males	.24 (1.18) (.25)	.76 (5.29) (.00)	—
Females	.50 (2.56) (.02)	.41 (1.86) (.08)	.40 (1.94) (.07)

* Excluding the relatively unionized printing and hosiery industries.

training, not even on-the-job training. (Moreover, the unskilled workers had by far the highest turnover rates to begin with,[41] so it is difficult to believe that their turnover was very costly in an absolute sense, either.) Yet when wage cuts did come in the early 1930s, they tended to be general reductions affecting all or almost all wage earners in a company. Among plants that made reductions, the average proportion of employees affected was 97.5%, according to the NICB's (1932) survey.[42] Moreover, across-the-board reductions of a constant proportion seem to have been most common. "The popular thing seems to be ... a flat reduction of 10%," noted *Babson's Reports*.[43] Judging from the NICB's

rhetoric, morale considerations seem to have been paramount in this tendency. In one report the NICB commented, "When reductions in compensation scales were being made very generally, the flat percentage policy was widely used because it created an appearance of impartiality and sharing alike in the effects of a necessary but unpopular policy."[44]

Reductions in executive salaries tended to precede and be somewhat larger than general wage cuts. Salary reductions probably sent an important signal that the firm was under severe cost pressure and made wage cuts more palatable. Pointing to this tendency, the NICB (1932) said: "Evidence seems to indicate that this attitude of management has been recognized and understood by the employed personnel, and that probably never before has the lowering of compensation scales been accompanied by so little resentment and feeling of injustice."[45] *Babson's* echoed this view, stating that "there has been less serious industrial strife during the present depression than in any previous one."[46]

The NICB data on average hourly earnings offer some support for the generalization that wage cuts tended to be flat-rate reductions. At the aggregate level the percent changes in the AHE of the three individual occupational groups in the NICB's survey—skilled and semi-skilled males, unskilled males, and females—were approximately the same in the 1929–33 contraction, as well as in the 1937–39 recession. In 1929–33, the AHE decline was 23.4% for skilled and semi-skilled males, 24.3% for unskilled males, and 25.9% for females. In 1937–39, the respective declines were 0.6%, 1.7%, and 4.7%.[47] (The higher AHE declines for women may reflect not so much discrepancies in wage cutting but a discriminatory tendency to ration jobs by laying off women, especially married women, in higher-paying semi-skilled jobs, so as to make more of those jobs available for men. Such discrimination, notably in the form of "marriage bars," was common in the Depression, as Goldin 1990 has described.[48])

The industry-level data offer more mixed support for the claim that wage cuts tended to be flat-rate reductions (see Table 2). The 1929–33 declines in the AHE of the two male groups were within 5 percentage points of each other in 18 of the 25 NICB industries. On the other hand, the AHE declines of male and female workers were often quite divergent. In the 22 NICB industries that employed female workers, the AHE decline of females was within 5 percentage points of the corresponding decline for skilled and semi-skilled males in 14 cases and within 5 percentage points of the decline for unskilled males in only 10 cases. Still, many of the exceptions to the flat-rate policy seem to have been "exceptions that proved the rule." As Jacoby (1985) writes:

> Not all firms made across-the-board reductions. Rather, at the behest of top management, companies in the automobile, tire, and other industries made selective cuts, giving concessions to key groups (usually skilled workers) and seriously upsetting customary wage differentials. Though done to minimize the risk of labor disturbances, this move left less skilled workers feeling that wage cuts had been carried out inequitably, a charge that would return to haunt management in later years.[49]

The electrical manufacturing industry seems to provide another example. In that industry the 1929–33 declines in AHE were 17.9% for skilled and semi-skilled males, 13.7% for unskilled males, and 24.5% for females. The unequal reductions may have been part of what Ronald Schatz (1983) describes as the industry's "tendency to revert to crude methods of labor management" during the Depression.[50] As a result of such policies, Schatz writes, "nearly every worker felt aggrieved for one reason or another."[51] Perceived inequities in wage cutting in 1929–33 by the top firms in these industries may well have contributed to the successful union drives at all of those companies in the late 1930s.

Insider-Outsider Models

Insider-outsider models attribute wage rigidity to the successful efforts of incumbent workers, or "insiders," to maintain their wages at the expense of unemployed job seekers, or "outsiders," who would work for less. These models are attractive in that they offer explanations of why companies do not cut the pay of existing workers and why they do not adopt two-tier wage scales (which would allow them to hire unemployed outsiders at lower wages without cutting insider pay). Insider-outsider theory is closely related to the "hysteresis" theory of wages and employment, which Olivier Blanchard and Lawrence Summers (1986) proposed as an explanation of Europe's persistently high unemployment rates in the 1980s. Applying this theory to the American labor market of the 1930s, Peter Temin writes:

> The 'hysteresis' theory notes that only employed workers got to bargain with employers over wages. If these 'insiders' were concerned only about preserving their jobs, not in lowering their wages to employ more 'outsiders,' then they would have sought wages higher than the market-clearing level. In fact, the level of unemployment would not be relevant to their desires. The hysteresis theory therefore removes the paradox of rising real wages in the presence of high unemployment by asserting that the former was not a function of the latter. It also provides an economic interpretation of the process of wage bargaining under the National Recovery Administration.[52]

In standard insider-outsider models, such as those presented in Lindbeck and Snower (1988), the source of the insiders' hegemony is prohibitively high turnover costs, which make it unprofitable for firms to replace them with unemployed job-seekers who would willingly work for less. The insiders exploit their market power to set their wages above market-clearing levels. The presence of unemployed outsiders fails to exert downward pressure on wages because a wage cut would induce many insiders to quit, taking their valuable firm-specific human capital with them. Two-tier wage scales would likewise be self-defeating for the firm, because the insiders would fear their eventual replacement by their lower-paid new co-workers and would harass or otherwise not cooperate with the new recruits. Even in a cyclical downturn, "the insider wage may respond little, if at all,

Table 2

Percent Changes in Average Hourly Earnings in 25 Manufacturing Industries, 1929 – June 1933

Industry	*Overall*	*Male, skilled and semi-skilled*	*Male, unskilled*	*Female*
Agricultural implements	-20.6%	-19.7%	-24.0%	-20.7%
Automobiles	-16.8%	-17.9%	-13.5%	-9.3%
Boot & shoe	-18.6%	-17.7%	-22.1%	-16.0%
Chemical	-19.5%	-19.6%	-17.5%	-19.8%
Cotton, North	-26.9%	-26.7%	-19.1%	-28.0%
Electrical manufacturing	-15.9%	-17.9%	-13.7%	-24.5%
Foundries & machine shops	-23.0%	-22.5%	-19.3%	-24.7%
1.Foundries	-23.3%	-22.4%	-25.8%	-27.0%
2.Machines & machine tools	-14.4%	-16.6%	-14.7%	-15.3%
3.Heavy equipment	-20.9%	-21.0%	-21.4%	
4.Hardware & small parts	-20.9%	-21.5%	-20.9%	-23.6%
5.Other foundry products	-24.4%	-24.7%	-15.1%	-25.1%
Furniture	-34.3%	-34.5%	-40.7%	-30.8%
Hosiery & knit goods	-34.3%	-46.2%	-22.1%	-29.9%
Iron and steel	-29.4%	-30.4%	-36.2%	
Leather tanning & finishing	-20.4%	-24.1%	-28.2%	-14.7%
Lumber & millwork	-34.5%	-34.0%	-33.9%	
Meat packing	-24.2%	-19.3%	-23.4%	-31.6%
Paint & varnish	-20.9%	-11.3%	-15.1%	-4.4%
Paper & pulp	-23.7%	-25.9%	-21.1%	-23.7%
Paper products	-20.6%	-16.3%	-12.8%	-24.9%
Printing, book & job	-9.2%	-11.3%	-9.2%	-0.2%
Printing, news & magazine	-18.6%	-18.4%	-18.5%	-15.6%
Rubber	-14.1%	-13.3%	-23.0%	-18.5%
Silk	-29.4%	-29.5%	-22.5%	-38.8%
Wool	-26.9%	-22.7%	-23.3%	-31.6%
ALL 25 INDUSTRIES	-23.7%	-23.4%	-24.1%	-24.9%

because a wage drop is not in the interest of the majority of insiders. Consequently, workers are laid off."[53] If insiders know that the firm will lay off workers on, say, the basis of efficiency (as survey evidence suggests was the case in 1929–33[54]), then a majority coalition of the more efficient workers will oppose a wage cut.

However helpful these models may be in explaining modern phenomena such as European unemployment, they contribute little to our understanding of wage rigidity in the Great Depression. The historical evidence on the shaping of the NRA codes directly contradicts Temin's claim that "[u]nder the NRA wages were set to serve the interests of those already employed."[55] In fact, the role of incumbent workers in shaping the NRA industry codes was surprisingly minimal. Despite President Roosevelt's famous rhetoric about bringing industry, labor, and government together under the banner of the NRA, industry dominated the writing and administration of the NRA codes.[56] One contemporary observer termed the NRA a "bargain between business leaders on the one hand and businessmen in the guise of government officials on the other."[57] Nonunion work-

ers, who comprised over 90 percent of the factory work force, had no voice in the code-making process. In industries that had no effective union—that is, basically every manufacturing industry except printing and some lines of clothing—"labor gains in the code were confined to the mandatory ones"—a minimum hourly wage of 40 cents, shorter workweeks, and compensatory increases in hourly wage rates so that weekly wages would be no lower than before.[58]

The higher wages that the NRA brought arguably had less to do with insider power than with the government's insistence on raising "purchasing power," which was stated in the preamble of the President's Reemployment Agreement of July 1933 ("a nation-wide plan to raise wages, create employment, and thus increase purchasing power and restore business"). The NIRA—together with the principal post-NIRA New Deal labor laws, 1935's National Labor Relations Act (the Wagner Act) which guaranteed collective bargaining rights and 1938's Fair Labor Standards Act which imposed national wage and hour standards—was the high-water mark of the Doctrine of High Wages, i.e., the conviction that high wages promoted mass purchasing power and therefore were indispensable to prosperity. The doctrine, fashionable among businessmen in the 1920s (though belied by the continual drop in labor's share of factory output that decade), had become official government policy. On the Senate floor, Robert Wagner, the NIRA's primary architect in Congress, blamed the depression on the failure of wages to keep pace with profits in the 1920s and said the bill's minimum-wage provisions were necessary for "dispersing adequate purchasing power throughout the economic system."[59]

The high-wage component of the NRA codes also owed something to the disproportionate input of big business, relative to small business, in the writing of the codes. The large corporations already tended to pay above-average wages and to be more liberal in their labor policies; for them, NRA restrictions on wages and hours were often non-binding and, to their thinking, a necessary defense of "honest business" against low-wage, low-price competitors. Some of them also favored minimum wages as a check on price competition.[60] The members of the Special Conference Committee, whose files contain "a constant emphasis on the necessity for cooperation between employers and employees in industry," played especially prominent roles in the early implementation of the NIRA.[61] Henry I. Harriman of the U.S. Chamber of Commerce, which supported the NIRA (except for section 7(a)'s union protections) said in an interview that industry's "ruthless minorities" who had been "lengthening hours and lessening pay" would now "be roped, branded, and made to run with the herd."[62] Edward A. Filene, one of the most prominent business liberals and a backer of Roosevelt's, in a 1936 campaign essay titled "Why We Must Make Higher Wages Compulsory," echoed that assessment:

> The reason must be plain to all. If I pay wages greatly above what my competitor pays, he may undersell me. Even if most of us get together and agree upon a high wage scale, the competitor who will not agree may undersell us all. We employers, then, are not only regimented in this matter, but we are regimented by the meanest chiselers in our line, and made to do things which no decent employer wants to do.[63]

Thus the NRA's high-wage component appears attributable more to White House high-wage ideology (and, perhaps, the political appeal of being for higher wages) and big business's jockeying for competitive advantage than to calculated rent-seeking by incumbent workers. The rapid wage inflation of the post-NRA New Deal years, which was concentrated in the first half of 1937 as unions made some of their greatest gains, seems more congruent with insider-outsider theory, since a union epitomizes an insider group with market power. Yet the New Deal's indispensable contribution to those gains, in the form of the Wagner Act of 1935, arguably owed at least as much to the Doctrine of High Wages as to the political power of the unions. Daniel J.B. Mitchell (1986) calls that doctrine "[t]he macroeconomic motivation behind the Wagner Act." The Act's preamble stated that insufficient employee bargaining power "tends to aggravate recurrent business depressions, by depressing wage rates and the purchasing power of wage earners." Mitchell notes, "So central is this economic theme that one searches the preamble in vain to find a corresponding justification based on industrial democracy.[64] With the advent of the Second New Deal in 1935, the Roosevelt Administration's rhetoric turned decidedly anti-business and may have contributed further to nominal wage rigidity, by raising the specter of more intrusive or punitive government regulation of business.[65]

Another limitation of insider-outsider models as an explanation of Depression labor markets is their dependence (shared by the turnover-based variant of efficiency-wage models) upon prohibitively high costs of replacing one's workforce. As noted in the previous section, under this assumption the instantly replaceable unskilled workers should have had the least ability to maintain or increase their wages. Yet in the 1933–37 recovery, the AHE of unskilled males advanced at about the same rate as those of skilled and semi-skilled males. This was true in both the NRA period from July 1933 to May 1935, when the code minimums directly affected many unskilled males but hardly any other males, and the 1935–37 period when the unions scored their most famous victories. The other alleged source of insider power, their potential harassment of new recruits if the firm were to adopt a two-tier wage scale, is less testable, partly because two-tier wage plans were so rare in the Depression, despite the relatively high rate of accessions during the New Deal years.

Conclusion

Toward an Explanation of the 1933-39 Wage Explosion

After comparing the implications of these models with various empirical evidence on 1930s labor markets, I find little support for economic efficiency-wage and insider-outsider models as explanations of the 1933–39 wage explosion. Efficiency-wage variants that emphasize worker morale fare much better. Such morale-based theories are by no means new—Slichter (1929) said the morale-productivity link was the reason why employers avoided cutting wages in proportion to falling prices, and John Hicks (1932)

attributed downward wage rigidity to "employers' perception that a reduction in wage-rates is likely to impair efficiency by worsening their relations with their men."[66] Formalizing this insight adds little value, since key concerns like morale, fairness, and reciprocity are difficult to model in an optimizing framework. Thus the theory I sketch here is an informal one; it bears some similarity to Baily's (1983) implicit-contract story of Depression labor markets.[67]

In this theory, workers oppose nominal wage cuts partly for the rational economic reason that wage cuts worsen their standard of living and partly for the non-rational normative reason that nominal wage cuts are perceived as insulting and violations of community norms of fairness. (These two elements of nominal wage rigidity are prominent in the results of interviews of company pay-setters by Kaufman 1984 and Bewley 1999 and find further support in telephone surveys by Kahneman et al. 1986.[68]) Firms, recognizing the link between employee morale and productivity, therefore avoid nominal wage cuts because of the potential damage to their long-term bottom line. Workers and firms are both risk-averse, so if workers perceive hours reductions as job-preserving, then firms may adopt work-sharing policies in periods of slack product demand so as to minimize effective labor costs by easing workers' concerns about their job security. If workers do not perceive wage reductions in the same light, as appears likely, they will resist cuts in nominal hourly wages. When wage cuts do occur, they occur not in response to a slack labor market but because of intense pressure on company profit margins, usually brought on by calamitous declines in product demand and product prices; that pressure eventually overwhelms the firm's natural risk aversion, causing it to view the benefits of a wage cut, which by this point may include the very survival of the firm, as outweighing the present-day value of the reduction in marginal value product associated with demoralized workers in current and future periods. The resulting shift in the firm's decision-making is analogous to the old saw, "Desperate times call for desperate measures."

In any account of the New Deal wage explosion of 1933–39, the role of institutional changes, most notably the NRA codes and the labor-law reforms that allowed the unions to reach new heights of power, should be front and center. Employer acquiescence to those changes should not be overstated, since, after the initial implementation of the NRA, the bulk of business quickly soured on the New Deal.[69] The rising tide of union power put industry on the defensive, and the majority of manufacturing firms that remained nonunion had to be extra-mindful of the old taboo on nominal wage cutting, since the potential consequences of low morale now included union organizing efforts within the firm. Many nonunion firms implemented preemptive wage increases, believing that better-paid workers would not only be more contented and productive but also less likely to form unions. Indeed, unions' indirect impact on wages seems to have been much greater than their direct impact. In an NICB survey of salary and wage policies during 1933–34, for example, nearly three times as many of the companies that had raised wages cited the reason "Good policy to avoid labor unrest" as cited "Collective bargaining negotiation."[70] Another example was the ten-cent wage increase and overtime pay granted by Bethlehem Steel and the rest of the Little Steel companies in March

1937, just after U.S. Steel had done the same in its first collective bargaining agreement.[71] Still more blatant was an internal du Pont memo, dated October 6, 1933, concerning the plants in the company's Niagara Falls district:

> It is considered that a wage increase granted voluntarily by the plants in the district, bringing the weekly earnings closer to the 1929 weekly earnings will be perhaps the most effective method of preventing Niagara Falls from becoming unionized. In the long run it is believed that such a wage increase will be very much cheaper than unionization. To be effective, however, it must be granted before actual demands are received.[72]

In sum, modern economic theories of efficiency wages and insider-outsider dynamics, although theoretically rigorous and well grounded in optimizing behavior, fall short of providing the framework for a coherent and convincing story of the wage explosion of the New Deal years. For such a story, we need look no further than the sweeping institutional changes of the New Deal and their interactions with employers' desire to maintain morale and productivity among their workers.

Notes

1. I 1am grateful to Truman Bewley, Lewis Davis, Timothy Guinnane, Harrison Hartman, Christopher Sims, Gene Smiley, Mark Wheeler, and participants at the Economic and Business Historical Society 2002 conference in Chicago for their helpful comments and insights.

2. On the rigidity of wages in 1929–33, particularly in 1929–31, see Anthony P. O'Brien, "A Behavioral Explanation for Nominal Wage Rigidity During the Great Depression," *Quarterly Journal of Economics* 104, no. 4 (November 1989): 719–35; Ranjit S. Dighe, "Wage Rigidity in the Great Depression: Truth? Consequences?" *Research in Economic History* 17 (1997): 85–134; and Curtis J. Simon, "The Supply Price of Labor During the Great Depression," *Journal of Economic History* 61, no. 4 (December 2001): 877–903.

3. Hourly earnings data are from the National Industrial Conference Board (NICB), namely from tables in M. Ada Beney, *Wages, Hours, and Employment in the United States, 1914–1936* (New York: NICB, 1936); NICB, "Wages, Hours and Employment in the United States, 1934–1939," *Conference Board Economic Record*, March 28, 1940; and NICB, *Conference Board Management Record*, monthly issues, 1940–41. Factory wholesale price data are from the U.S. Bureau of Labor Statistics (BLS), "Index Numbers of Wholesale Prices of Specified Groups of Commodities." mimeo, 1946 (U.S. Department of Labor Library, Washington, DC; call number HD6983.A26.) The real product wage is the nominal wage divided by the wholesale price index for manufacturing.

4. Leo Troy and Neil Sheflin, *U.S. Union Sourcebook* (West Orange, NJ: Industrial Relations Data and Information Sources, 1985), 3-15.

5. Gavin Wright, "Labor History and Labor Economics," in *The Future of Economic History*, ed. Alexander Field (Boston: Kluwer-Nijhoff, 1987), 334.

6. Richard J. Jensen, "The Causes and Cures of Unemployment in the Great Depression," *Journal of Interdisciplinary History* 19, no. 4 (Spring 1989): 553–83.

7. Peter Temin, *Lessons From the Great Depression* (Cambridge, MA: MIT Press, 1989); "Socialism and Wages in the Recovery from the Great Depression in the United States and Germany," *Journal of Economic History* 50, no. 2 (June 1990), 297–307; "The Great Depression," in *The Cambridge Economic History of the United States, Volume III: The Twentieth Century*, ed. Stanley L. Engerman and Robert E. Gallman (New York: Cambridge University Press, 2000). The key "hysteresis" paper is Olivier J. Blanchard and Lawrence Summers, "Hysteresis and the European Unemployment Problem," *NBER Macroeconomics Annual* (Cambridge, MA: Natural Bureau of Economic Research, 1986): 15–78. Blanchard and Summers in turn cite the insider-

outsider theory outlined in Assar Lindbeck and Dennis J. Snower, "Wage Setting, Unemployment, and Insider-Outsider Relations," *American Economic Review* 76, no. 2 (May 1986): 235–39.

8. Temin, "Socialism and Wages," 302–03.

9. NICB, *Salary and Wage Policy in the Depression* (New York: NICB, 1932); NICB, *Salary and Wage Policy in the Depression 1933–1934* (New York: NICB, 1935); E. Wight Bakke, *The Unemployed Worker* (New Haven: Yale University Press, 1940).

10. U.S. Bureau of Labor Statistics, *Strikes in the United States, 1880–1913* (Bulletin No. 651; Washington, DC: GPO, 1937); W.S. Woytinsky, *Three Aspects of Labor Dynamics* (Washington, DC: Social Science Research Council, 1942).

11. Information on the Special Conference Committee—whose member companies were AT&T, Bethlehem Steel, Du Pont, General Electric, General Motors, Goodyear, International Harvester, Irving Trust, Standard Oil, Westinghouse, U.S. Rubber, and U.S. Steel—became public only after a Congressional subpoena in the late 1930s. For further details on this group, see Robert Ozanne, *A Century of Labor-Management Relations at McCormick and International Harvester* (Milwaukee: University of Wisconsin Press, 1967); H. M. Gitelman, "The Special Conference Committee: Reality and Illusion in the Industrial Relations of the 1920s" (manuscript, Adelphi University, 1991); and Colin Gordon, *New Deals: Business, Labor, and Politics in America, 1920–1935* (New York: Cambridge University Press, 1994).

12. Carl Shapiro and Joseph Stiglitz, "Equilibrium Unemployment as a Worker Discipline Device," *American Economic Review* 74, no. 3 (June 1984), 433–44.

13. Steven C. Salop, "A Model of the Natural Rate of Unemployment," *American Economic Review* 69, no. 1 (March 1979), 117–25; Andrew Weiss, "Job Queues and Layoffs in Labor Markets with Flexible Wages," *Journal of Political Economy* 88, no. 3 (June 1980), 526–38.

14. Jensen, "Causes and Cures," 563.

15. Productivity figures are based on U.S. Bureau of the Census, *Historical Statistics of the United States* (Washington, DC: Government Printing Office, 1975), Series D 685, which is based on John W. Kendrick's productivity estimates. Manufacturing capital data are from U.S. Bureau of the Census, *Historical Statistics*, Series P 119, based on estimates by the U.S. Bureau of Economic Analysis.

16. Ben Bernanke and Martin Parkinson, "Unemployment, Inflation, and Wages in the American Depression: Are There Lessons for Europe?" *American Economic Review* 79, no. 2 (May 1989), 214.

17. Sanford M. Jacoby, *Employing Bureaucracy: Managers, Unions, and the Transformation of Work in American Industry, 1900–1945* (New York: Columbia University Press, 1985); Jensen, "Causes and Cures," 560.

18. Jensen, "Causes and Cures," 563.

19. "In the efficiency-wage theory, the source [of involuntary unemployment] is firms' imperfect information about the profitability of their employees" (Assar Lindbeck and Dennis J. Snower, "Efficiency Wages Versus Insiders and Outsiders," *European Economic Review* 31 (February 1987), 407).

20. Robert A. Margo, "Labor and Labor Markets in the 1930s," in *The Economics of the Great Depression*, ed. Mark Wheeler (Kalamazoo, MI: Upjohn Institute, 1998), 14; Bakke, *Unemployed Worker*, 242–43.

21. Data are from U.S. Bureau of the Census, *Historical Statistics*, series D 685.

22. Jensen, "Causes and Cures," 563–64.

23. Michael R. Darby, "Three-and-a-Half Million U.S. Employees Have Been Mislaid: Or, an Explanation of Unemployment, 1934–1941," *Journal of Political Economy* 84, no. 1 (February 1976), 7.

24. Herbert Stein, *Presidential Economics: The Making of Economic Policy From Roosevelt to Clinton* (Washington, DC: American Enterprise Institute, 1994), 57.

25. George A. Akerlof, "Labor Contracts as Partial Gift Exchange," *Quarterly Journal of Economics* 87, no. 4, 543–69 (November 1982).

26. Jacoby, *Employing Bureaucracy*, 7.

27. Bernanke and Parkinson, "Unemployment, Inflation, and Wages," 214.

28. Jacoby, *Employing Bureaucracy*, 8.

29. John Maynard Keynes, *The General Theory of Employment, Interest, and Money* (New York: Harvest/Harcourt Brace Jovanovich, 1964 [originally published 1936]).

30. For examples of such models, see Lawrence H. Summers, "Relative Wages, Efficiency Wages, and Keynesian Unemployment," *American Economic Review* 78, no. 2 (May 1988): 383–88, and Richard Layard,

Stephen Nickell, and Richard Jackman, *Unemployment: Macroeconomic Performance and the Labour Market* (New York: Oxford University Press, 1991).

31. Sumner Slichter, "The Current Labor Policies of American Industries," *Quarterly Journal of Economics* 43 (May 1929): 393–435; John T. Dunlop, "The Movement of Real and Money Wage Rates," *Economic Journal* 48, no. 191 (September 1938): 413–34.

32. Joseph E. Stiglitz, "Theories of Wage Rigidity," in *Keynes' Economic Legacy: Contemporary Economic Theories*, ed. James L. Butkiewicz (Westport, CT: Praeger, 1986), 192.

33. Beney, *Wages, Hours, and Employment*; Dighe, "Wage Rigidity," 95–96.

34. U.S. Bureau of the Census, *Historical Statistics*, Series E 135; U.S. BLS, *Strikes in the United States*, 61.

35. Lyle W. Cooper, "The American Labor Movement in Prosperity and Depression," *American Economic Review* 22 (December 1932), 648.

36. Ibid., 648; Irving Bernstein, *The Lean Years: A History of the American Worker, 1920–1933* (Boston: Houghton Mifflin, 1960), 89.

37. Robert M. Solow, "Another Possible Source of Wage Stickiness," *Journal of Macroeconomics* 1, no. 1 (Winter 1979): 79–82; George A. Akerlof and Janet L. Yellen, "The Fair Wage-Effort Hypothesis and Unemployment," *Quarterly Journal of Economics* 105, no. 2, (May 1990): 255–83; Robert A. Sayre, *Consumer Prices 1914–1948* (New York: NICB, 1948).

38. Akerlof and Yellen, "Fair Wage-Effort Hypothesis," 281.

39. "Employing an Old Idea," *American Labor Legislative Review*, September 1931, 362.

40. For 1929 see Ranjit S. Dighe, "A Helicopter Tour of Competing Theories of Wage Rigidity, as Applied to the Great Depression," (SUNY-Oswego Economics Department Working Paper 1999-01, Internet: http://economic.oswego.edu/papers/helitour.pdf, 1999), 22, 46. For 1939 see William T. Dickens and Lawrence F. Katz, "Inter-Industry Wage Differences and Industry Characteristics," in *Unemployment and the Structure of Labor Markets*, ed. Kevin Lang and Jonathan S. Leonard (New York: Basil Blackwell, 1987), 79-81.

41. Woytinsky, *Three Aspects of Labor Dynamics*, 23.

42. NICB, *Salary and Wage Policy*, 15, 48.

43. *Babson's Reports*, September 7, 1931, 1.

44. NICB, *Salary and Wage Policy, 1933–1934*, 17.

45. NICB, *Salary and Wage Policy*, 38.

46. *Babson's Reports*, January 11, 1932, 1.

47. Percent changes for 1937–39 are based on tables in "Wages, Hours and Employment in the United States, 1914–1939," *Conference Board Economic Record*, March 28, 1940.

48. Claudia Goldin, *Understanding the Gender Gap*, New York: Oxford University Press, 1990.

49. Jacoby, *Employing Bureaucracy*, 217.

50. Ronald W. Schatz, *The Electrical Workers: A History of Labor at General Electric and Westinghouse, 1923–60* (Chicago: University of Illinois Press, 1983), 62.

51. Ibid., 106.

52. Temin, "The Great Depression," 323.

53. Assar Lindbeck and Dennis J. Snower, *The Insider-Outsider Theory of Employment and Unemployment*, (Cambridge: MIT Press, 1988), 225.

54. NICB, *Salary and Wage Policy*, 4; Bakke, *The Unemployed Worker*, 242–43.

55. Temin, "Socialism and Wages," 303.

56. Broadus Mitchell, *The Depression Decade* (Armonk, NY: M. E. Sharpe, 1975 [originally published 1947]), 238–43; Gordon, *New Deals*, 171–78.

57. Quoted in Theda Skocpol and Kenneth Finegold, "State Capacity and Economic Intervention in the Early New Deal," *Political Science Quarterly* 97, no. 2 (Summer 1982), 266.

58. Mitchell, *Depression Decade*, 240–41.

59. *Congressional Record*, Volume 77, Part 5 (1933), 5153–54.

60. On the rationale for business support of the New Deal's high-wage component, see Michael Bernstein, *The Great Depression* (New York: Cambridge University Press, 1987), 194–95; Colin Gordon, *New Deals*, 184–86; Skocpol and Finegold, "State Capacity," 256; Michael M. Weinstein, *Recovery and Redistribution*

Under the NIRA, (New York: North Holland, 1980), 101–04; Gavin Wright, *Old South, New South* (New York: Basic Books, 1986), 216–21.

61. U.S. Senate, *Violations of Free Speech and Rights of Labor, Part 45: Supplementary Exhibits: The Special Conference Committee* (Senate hearings, 76th Congress; Washington, DC: Government Printing Office, 1939), 16789.

62. *Congressional Record*, Volume 77, Part 5 (1933), 5164.

63. Edward A. Filene, *Speaking of Change: A Selection of Speeches and Articles* (New York: Published by Former Associates of Edward A. Filene, 1939), 277.

64. Daniel J. B. Mitchell, "Inflation, Unemployment, and the Wagner Act: A Critical Reappraisal," *Stanford Law Review* 38 (March 1986), 1067.

65. For a detailed account of the politics and ideology of the Second New Deal, see Arthur M. Schlesinger, Jr., *The Politics of Upheaval* (Boston: Houghton Mifflin Company, 1988 [originally published 1960]), 385–425.

66. Slichter, "Current Labor Policies," 400–401; John Hicks, *The Theory of Wages* (London: Macmillan, 1932), 136.

67. Martin Neil Baily, "The Labor Market in the 1930s," in *Macroeconomics, Prices, and Quantities*, ed. James Tobin (Washington, DC: Brookings Institution, 1983), 21–61.

68. Roger T. Kaufman, "On Wage Stickiness in Britain's Competitive Sector," *British Journal of Industrial Relations* 22, no. 1 (March 1984), 101–12; Truman F. Bewley, *Why Wages Don't Fall During a Recession* (Cambridge, MA: Harvard University Press, 1999); Daniel Kahneman, Jack L. Knetsch, and Richard Thaler, "Fairness as a Constraint on Profit Seeking: Entitlements in the Market," *American Economic Review* 76, no. 4 (September 1986), 728–41.

69. Gordon, *New Deals*, 283–87.

70. Not surprisingly, the most commonly cited reasons had to do with the NRA codes, which were mostly implemented in 1933–34. In the survey, 678 companies said they had raised wages in 1933–34, and, given a list of choices as to why, 369 chose "Desire to cooperate with NRA," 359 chose "Code requirements," 227 chose "Good policy to avoid labor unrest," and 79 chose "Collective bargaining negotiation" (NICB 1935, 13, 21).

71. Daniel Nelson, *American Rubber Workers and Organized Labor, 1900–1941* (Princeton: Princeton University Press, 1988), 264.

72. Hagley Library Accession 1813, Box 15, "Memorandum: Labor Situation at Niagara Falls."