

# Keynesian, Old Keynesian, and New Keynesian Wage Nominalism

DANIEL J. B. MITCHELL\*

Wage nominalism has long been a puzzle for economists. The original Keynesian explanation related it to a coordination failure in the context of decentralized union bargaining, a problem now in a largely nonunion U.S. labor market. Moreover, Keynesianism assumed wage nominalism as the norm rather than explaining it. New Keynesian explanations, based on implicit contracts, menu costs, and other innovations still do not explain wage nominalism.

ALTHOUGH KEYNESIAN THEORY and its derivatives have many facets, wage determination plays a very important role. Keynesians, old and new, emphasize nonclearing behavior in the labor market, which essentially means that the wage-setting mechanism is somehow impeded from setting demand = supply. In contrast, other approaches to macroeconomics, such as the real business cycle approach, are less apt to assume that labor markets fail to clear or that flexibility in wage setting is a major issue.

Keynesian theory is also likely to stress nominal wage (and now price) setting, rather than real, as an engine in business cycles and as a route toward policy activism. Thus, the debate in the late 1970s and early 1980s on whether European unemployment was “Keynesian” or “classical” in-

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volved the question of whether—in the latter case—European real wages had become rigid, thereby preventing demand-expanding policies from lowering unemployment (Sachs, 1983; Bruno and Sachs, 1985). “Wage nominalism”—defined as a seemingly undue<sup>1</sup> emphasis by wage setters on the nominal (rather than the real) wage—remains a key phenomenon in Keynesian theory and its offshoots.

This paper suggests that past and current explanations of wage nominalism are deficient. Keynes’ original explanation of wage nominalism—consisting mainly of asymmetric<sup>2</sup> resistance to nominal wage cuts—dealt with a coordination failure inherent in decentralized wage bargaining and relied heavily on collective bargaining institutions. Today, this reliance on unions poses a problem since a relatively small fraction of the workforce is covered by bargaining. Moreover, even given a bargaining economy, the Keynesian model *assumes* nominalist institutions rather than *explains* their existence—a characteristic shared by more recent work.

Keynesian scholars after World War II were less interested in wage cuts than in the sluggish response of nominal wage increases to demand variations and inflation. They were still concerned with coordination failures, hence their interest in wage/price guidelines as coordinators. But the approach of these old Keynesians was often atheoretical and, thus, like Keynes, failed to explain wage nominalism.

New Keynesians have introduced new concepts—such as implicit contracts, menu costs, hiring tolls, efficiency wages, and insider-outsider conflict—to explain anomalous wage behavior, but they are better at explaining real rigidities than nominal (Gordon, 1990; Ball, Mankiw, and Romer, 1988; McCallum, 1986), and, following Keynesian tradition, focus on union bargaining. In short, these newer Keynesian models still lack a satisfactory explanation for wage nominalism in the labor market.

This difficulty may account for a shift to studying the product market (Mankiw, 1988). Yet recent evidence from employer and worker surveys still only documents the existence of—and does not explain—wage nominalism. Thus, an explanation is needed that encompasses *both* labor and product market behavior.

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<sup>1</sup> I use the term “wage nominalism” instead of “nominal wage rigidity,” the more common phrase, because “rigidity” is an overstatement of the phenomenon since it is obvious that nominal wages do change and are sometimes cut. I use “seemingly undue” to refer to what would be expected to occur within a Walrasian auction model of wage setting in which all markets clear and in which wage setters’ behavior is determined by real and relative wages. Although Europe has sometimes been depicted as having real rather than nominalist wage setting, the view from Europe was that U.S. wage setting remained nominalist in character (Grubb, Jackman, and Layard, 1983).

<sup>2</sup> I use the term “asymmetric” since the resistance is to wage cuts, not increases.

A promising avenue is the old, pre-Keynesian approach based on the Irving Fisher (1928) notion of “money illusion,” where wage nominalism is part of a larger phenomenon. The type that concerned Keynes—resistance to nominal wage cuts—and the type that has concerned old and new Keynesians—wage and price sluggishness—are both inherent features of an economy using money as the standard of value.

### The Empirical Side of Wage Nominalism

Most economists would accept Krugman’s (1990) diagnosis of the virtues of devaluation in the situation he posits:

Suppose . . . there is a sharp drop in worldwide demand for goods made in Britain. To cope with such a shock, Britain must . . . make its goods cheaper. . . . The only quick way to do this is to reduce British wages. . . . But how can all British wages be reduced quickly? In the face of sustained high unemployment, workers might be persuaded to accept lower wages. . . . But the economic and social cost of reducing wages by, say, 15% would be huge. In contrast, a 15% devaluation of the pound . . . would accomplish the same thing instantly and almost painlessly. (p. D2)

This diagnosis assumes that workers cannot be readily “persuaded” to accept reductions in nominal wages; it also assumes that they will take action to prevent such reductions. But workers will accept the same adjustment in real terms *if* it is hidden from them by means of a monetary manipulation.

Krugman’s analysis belongs to a long tradition of modeling wages on *bargaining* and of assuming a decentralized union bargaining process as the basis for wage setting, agreeing with Keynes (1936):

[S]ince there is, as a rule, no means of securing a simultaneous and equal reduction of money-wages in all industries, it is in the interest of all workers to *resist* a reduction in their own particular case. In fact, a movement by employers to revise money-wage *bargains* downward will be much more strongly *resisted* than a gradual and automatic lowering of real wages as a result of rising prices. (p. 264; emphasis added)

Moreover, Keynes continues, economic policy should aim at a “stable general level” of nominal wages, “provided that equilibrium with the rest of the world can be maintained by fluctuating exchanges” (p. 270). In other words, devaluation is preferable to an attempt to bargain equivalent nominal wage cuts, precisely the modern Krugman position.

TABLE 1  
FIRST-YEAR ADJUSTMENTS UNDER PRIVATE MAJOR UNION AGREEMENTS<sup>a</sup>

Year	All Industries			Construction			Median Real Effective Wage Change (%) <sup>b</sup>
	Median Wage Adjustment (%)	% of Workers with Wage Decreases	% of Workers with No Wage Change	Ave. Wage Adjustment (%)	% of Workers with Wage Decreases	% of Workers with No Wage Change	
1959	3.9	*	3	n.a. <sup>c</sup>	n.a.	n.a.	+1.8
1960	3.2	*	4	n.a.	n.a.	n.a.	+1.9
1961	2.8	*	8	n.a.	n.a.	n.a.	+2.0
1962	2.9	*	22	n.a.	n.a.	n.a.	+1.5
1963	3.0	*	25	n.a.	n.a.	n.a.	+1.3
1964	3.2	*	5	n.a.	n.a.	n.a.	+1.7
1965	3.8	0	4	n.a.	n.a.	n.a.	+1.5
1982	3.7	2	42	6.5	5	10	+2.8
1983	3.7	15	22	1.5	12	44	+0.9
1984	2.2	5	18	0.5	15	37	-0.1
1985	2.3	3	33	1.5	7	31	-0.3
1986	1.9	9	21	2.2	1	30	+1.6
1987	2.8	4	23	2.9	2	21	-1.1
1988	2.4	2	20	2.2	4	23	-1.5
1989	3.5	1	8	2.8	2	8	-1.3

SOURCE: U.S. Bureau of Labor Statistics, *Current Wage Developments*; U.S. Bureau of Labor Statistics, *Monthly Labor Review*, various issues.

\*Less than 0.5 percent.

<sup>a</sup>Major agreements are those covering 1,000 or more workers.

<sup>b</sup>Calculated using the official Consumer Price Index (CPI-U during 1982-87).

<sup>c</sup>Not available.

Is there empirical support for resistance to nominal wage cuts? Table 1 covers two periods in the post-World War II era in which U.S. wage inflation was comparatively low and labor markets relatively soft for extended periods: the early 1960s and the 1980s. The table shows the lower tail of nominal wage settlement distributions in the major union sector. The figures for all private industries are somewhat distorted by the presence of escalator clauses.<sup>3</sup> To avoid the escalator effect, I present data from the construction industry, a sector in which wage escalation is unusual. Unfortunately, comparable construction data are not available for the earlier period.<sup>4</sup>

<sup>3</sup> The U.S. Bureau of Labor Statistics does not take escalation account into account in its published distributions of wage changes. Hence, some workers reported as receiving a zero-wage change actually received some increase. The bureau's decision to make the base case an inflation rate of zero is itself an interesting bit of nominalism.

<sup>4</sup> A series published in the *Daily Labor Report* on union settlements focused on the construction industry in the 1960s and provides some evidence of a bulging at zero; unfortunately, there were no

Table 1 shows that nominal wage cuts were quite rare in the early 1960s, despite the low central tendency of the wage change distribution. While the typical union worker received real wage gains, a substantial fraction received wage rate adjustments below the CPI-measured rate of inflation, especially in 1962–63. In those two years, on an effective basis (which includes the effects of escalators and deferred adjustments), about 29 percent and 31 percent, respectively, of workers in the major union sector received a real wage decrease. But the nominal wage change distribution bulged at the zero point, suggesting that while real wage declines were possible, nominal union wage cuts were extremely rare.

During the 1980s, the nominal union wage change distribution also bulged at the zero point—consistent with the notion of asymmetric wage cut resistance. Unlike the 1960s, however, in some years, even the typical union worker received a real wage decrease. Moreover, negative nominal adjustments were more common in the 1980s than in the 1960s, suggesting a decline in—but not evaporation of—union resistance to such wage decreases.

Unfortunately, comparable data do not exist for the 1980s for the non-union sector, which now covers the vast bulk of the private U.S. workforce. But there is a (now-discontinued) series available for nonunion establishments in manufacturing during the 1960s. This series refers to establishments with a practice of making general wage adjustments (as opposed to discretionary individual merit increases). However, even nonunion establishments that make general adjustments tend also to provide additional individual merit increases. Hence, the proportion of workers reported as receiving zero adjustments is exaggerated; some workers received individual merit increases even if they experienced no general wage adjustment.

Table 2 summarizes the available data for nonunion establishments. Reported nominal wage decreases were rare in the 1960s for union establishments of the period. During periods of low inflation, the nominal non-union wage change distribution tended to bulge at the zero level although the proportion of workers receiving zeros is exaggerated. There is no way of accurately estimating the true proportion of nonunion workers receiving real wage decreases during this period.

Were nonunion data available for the 1980s, they would probably show

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data for 1962, and no wage decreases were reported in construction during 1959–65. Zero adjustments were reported for 2 percent of the settlements in 1959, 1 percent in 1960, 7 percent in 1961 (the peak), and 3 percent in 1963, 1964, and 1965. Similarly, the Bureau of Labor Statistics reported data on effective wage changes for seven construction trades during 1959–64 in various issues of the *Monthly Labor Review*. No wage decreases were reported. The proportion of zero adjustments fell in the 12–16 percent range.

TABLE 2

EFFECTIVE GENERAL WAGE ADJUSTMENTS IN NONUNION MANUFACTURING ESTABLISHMENTS<sup>a</sup>

Year	Median Wage Adjustment (%)	% of Workers with Wage Decreases	% of Workers with No Wage Change
1959	3.3	*	31
1960	2.5	0	41
1961	1.0	*	46
1962	1.6	0	47
1963	2.8	*	30
1964	2.0	0	44
1965	3.2	0	24

SOURCE: U.S. Bureau of Labor Statistics, *Monthly Labor Review*, various issues.

\*Less than 0.5 percent.

<sup>a</sup>Includes all those with a policy of making general wage adjustments.

lower proportions of nominal wage freezes and cuts than were found in the union sector. Nonunion wage rates generally rose faster than union rates during 1982–89, a mean annual rate of 4.6 percent compared with 3.7 percent for the CPI and 3.4 percent for wage rates in the union sector.<sup>5</sup> However, there were negative real wage rate changes in the nonunion sector in 1987 and 1989, showing that such adjustments are possible for large numbers of nonunion employees.<sup>6</sup>

As for a sluggish wage response to inflation and the business cycle, ample documentation is available. For example, Mitchell and Zaidi (1990) produce a short-term price-inflation coefficient in the U.S. wage change equation of about .8 percent, that is, a 1 percent price increase gives rise initially to only a .8 percent wage increase. These results are typical of those found in many studies, and empirically oriented macroeconomists and forecasters will have little difficulty accepting them descriptively. In short, wage nominalism in both its sluggish and asymmetric resistance forms remains a stylized fact.

### Wage Nominalism and the Keynesian Model of Decentralization

Wage nominalism—especially of the type involving resistance to wage cuts—was given prominence in Keynes' original analysis, and he viewed

<sup>5</sup> Figures are from the Employment Cost Index (ECI) for wages and salaries. In principle, ECI data could be used to produce distributions of union and nonunion wage changes for the 1980s. Unfortunately, budget restrictions at the Bureau of Labor Statistics have delayed such tabulations.

<sup>6</sup> On a total compensation basis, only 1987 exhibited a negative real nonunion pay change.

decentralized bargaining as the cause of nominalism. Norms of fairness were violated because each micro nominal wage cut was also a relative wage cut. Workers' utility functions strongly weighted the ratio of their wages to those of other workers. Bargainers took outside wages as given, and resistance to wage cuts was thus attributed by Keynes to a coordination failure.

*Decentralized bargaining.* This tradition of decentralized relative wage comparisons continues to the present. Summers (1988) argues that worker productivity may be geared to cross-sectional equity comparisons; that is, productivity suffers if workers feel they are being paid inequitably compared with other groups. This is a variant of the efficiency wage model discussed below.<sup>7</sup>

Aside from the union/nonunion issue, there is a fundamental objection to decentralization in such models as an explanation of asymmetric wage nominalism. Efficiency wage models that centered on the relative wage may explain forms of wage rigidity, but they are incomplete explanations of asymmetric wage nominalism specifically. To understand this deficiency, consider the following example.

Suppose all wages were tied to the Consumer Price Index (CPI)—“naturally” set in real terms. Suppose further that all workers knew this to be the case. Then any wage adjustment below the rate of increase in the CPI for a particular group of workers would amount to a relative wage cut. Starting from a system of real (CPI-based) wage determination, decentralization would explain *real* asymmetric wage rigidity, not nominal.

Similarly, if all wages were known to be indexed to gold, any employee group taking a wage cut denominated in gold would also be taking a relative wage cut. Starting from gold wages, decentralized bargaining would explain gold wage rigidity. In short, the Keynesian decentralization approach to wage nominalism, even in its modern guise, begs the initial question of why wages are indexed to the monetary unit. Decentralization can be used as a rationale for any form of wage rigidity (nominal, real, gold), *once the standard to which wages are indexed is predetermined*. The key question is how the standard was set, a question which decentralized bargaining does not answer.

This deficiency applies to models other than the efficiency wage type. For example, it is possible to create models in which menu costs seem to combine with decentralization and real rigidities to produce wage nomi-

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<sup>7</sup> Solow (1980) picked up a similar theme in his presidential address to the American Economic Association. Fairness is but one component of the efficiency wage approach to wage rigidity, as Stiglitz (1986) points out.

nominalism (Ball and Romer, 1990). However, under such models, a cost of changing wages is alleged to occur due to decentralized bargaining.

Wage setters assume that when a monetary shock occurs, others will hold nominal wages and prices constant. Any adjustment that the wage setters make would thus alter their real and relative positions—a “cost.” Decentralization is again the implicit basis of this assumption, and it again fails to explain wage nominalism.

Consider the following case. Suppose there is an economy in which wages are generally set in real terms. Assume also that there are at least some product markets with flexible pricing, such as those for agricultural goods. Then an assumption of external constancy—I adjust my wage in response to a monetary shock but no one else responds similarly—seems unrealistic.

Wage setters would surely know that when demand increased or decreased, there would be a natural tendency for at least some wages and prices to increase or decrease. A monetary shock would be expected to raise or lower prices in the flexible price sectors, which would then move all nominal wages up or down. These responsive wage changes could be anticipated—since wage setters know that wages are set in real terms—and would trigger additional wage increases or decreases. Hence, there should be no costs associated with nominal wage changes in response to monetary shocks despite decentralization. Wage setters in a world of real wage bargaining would assume that other wage and price setters do as they do, that is, raise nominal wages when positive monetary shocks occur and *lower* nominal wages in response to negative shocks.

*Reliance on union models.* Keynesian explanations of decentralized wage determination (and other aspects of wage setting) are often in a bargaining context (Turner, 1957; Strotz, 1966). It is not surprising that Keynes and other British economists would have relied on union-related practices in forming their ideas about wage setting. In the early twentieth century, British unions generally had a more profound impact on the British economy than their counterparts in the United States. In the 1920s in Britain, a general strike and subsequent stagnation surrounded an attempt to maintain an unrealistically high exchange rate for the pound. Thus, the fact that Keynes' views on exchange rates accorded with those expressed by Krugman above is easily understandable.<sup>8</sup>

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<sup>8</sup> Much higher unionization rates in Britain than the United States suggest that British theorists will continue to hang on to the Keynesian tradition of using a union model in the near future (Chick, 1983). But even in Britain, questions were raised by the mid-1970s about the importance of union pattern bargaining (Elliot, 1976). As British unionization declined (Robinson, 1987), observers detected



With the rise of unionization in the 1930s and 1940s, U.S. institutionalist economists also focused heavily on union practices. In the immediate post-World War II period, labor economists such as Ross (1948) emphasized “coercive comparisons” (pattern bargaining) between workers at different firms as a major factor in wage setting in the union sector, according with the Keynesian emphasis on the relative wage. The relative-wage/union pattern approach was still widely accepted in the 1950s and 1960s.

Even in the 1970s, there remained some justification in the U.S. context for insisting on modeling wage setting in terms of collective bargaining (Weintraub, 1978). But by the 1980s, pattern bargaining as a major force in interindustry wage setting was declared dead (Freedman, 1982), and the key issue was whether that death had occurred recently or long before (Ready, 1990; Mitchell, 1990). Since the outlook for private-sector unionization is gloomy (Bronars and Deere, 1989), emphasis on wage pattern setting seems progressively unpromising as an approach to general wage determination.

The idea of workers making comparisons with wages paid to other groups is union-oriented. Nonunion employers often do not make known their wage schedules, even to their own employees. While nonunion workers might assume that any nominal wage cut was also a relative wage cut, they would do so only if the labor market was known to be nominalist. But this “explanation” is insufficient: It explains nominalism by assuming nominalism.

Also disconcerting is the assumption that union bargaining processes inherently bias wage setting toward nominalism. Interjecting a union agent into wage determination could easily pull a modern model toward a prediction of real (rather than nominal) wage stickiness. In such models, the question will inevitably arise as to why union behavior should be linked to nominal variables (Stevenson, Muscatelli, and Gregory, 1988). Union officials are, after all, acting for their members. Shouldn’t these specialized agents be better informed than their principals about the impact of price inflation on purchasing power?

Indeed, some foreign observers have simply assumed real wage setting by unions in their models (Christofides and Oswald, 1989; Rowlatt, 1987). U.S. researchers have sought to examine multiyear contracts—deemed a special feature of union wage setting in the United States—as possible sources of nominalism (Taylor, 1980; Bils, 1989). But the precise impact of

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cracks in a seeming real wage rigidity in British union settlements of the 1980s. U.S.-style concession bargaining—with cuts in the nominal wage—was also found in Britain during the 1980s (Carruth and Oswald, 1987b).

contracting depends on how inflation is anticipated, for example, rational expectations and adaptive expectations (Taylor, 1983). Empirically, those U.S. union contracts that were escalated—at least through the 1970s—showed signs of successful anticipation of inflation (Mitchell, 1980), but nonindexed contracts have exhibited different behavior (Vroman and Abowd, 1988).

In any case, it is not reasonable to project union bargaining practices into the nonunion sector. Multiyear contracting in the union sector is linked to the desire to limit strike costs, a motivation with no analogy in the nonunion sector (Jacoby and Mitchell, 1982). Nonunion wages are not set over two- or three-year periods; annual wage decisions are the norm. And one-year wage-setting cycles cannot give rise to substantial wage stickiness.

The impact that unionization might have on wage nominalism depends on the form of nominalism that is being modeled. Union officials may better understand the impact of price inflation on purchasing power and, hence, may be more likely to think in real terms in setting wage targets. Sluggish nominalism may thus be avoided in the union sector, at least where escalators prevail. On the other hand, asymmetric wage nominalism may be fostered since unions can enforce norms of fairness, even if those norms seem irrational to economists or union officials.

*Phillips curve studies.* Probably, the largest single body of evidence on nominal wage setting derives from Phillips (1958) curve literature. Much of the post-1960s theoretical work on wage rigidity and its role in macroeconomics originated with the debate surrounding the empirical and analytical validity of the Phillips curve. The original Phillips curve, which related wage change to unemployment, assumed that the dependent variable should be the nominal wage; in that regard, Phillips built wage nominalism into his relation. While Keynes wrote in an era of deflation—and thus worried about resistance to wage *cuts*—postwar Keynesians who picked up the Phillips curve lived in an inflationary age, in which the sluggish behavior of nominal wage *increases* was the puzzle.

Researchers after Phillips were less nominalist in that they saw price developments as a relevant independent variable determining the nominal wage adjustment. But changes in prices were allowed to compete for statistical significance with other variables measuring profitability, productivity, or union strength. U.S. Phillips curves estimators often couched their explanations of how wages appeared to be set in bargaining language. Some were based on union bargaining (Eckstein and Wilson, 1962); others

used wage data from the then heavily unionized manufacturing sector, thus tying their results to the union sector.

A need to make the price coefficient in the modified Phillips curve equal to 1, at least in the long run, followed Friedman (1968) and Phelps (1969), who criticized the Phillips curve because of its built-in wage nominalism. A typical approach then became the use of a distributed lag of past inflation (often seen as a proxy for inflation expectations) or some other measure of inflation expectations.<sup>9</sup>

The modern rationale for such distributed lag behavior is generally couched in terms of a difficulty that economic agents have in determining the difference between permanent and transitory shocks (Gertler, 1982). Eventually, they realize the full extent to which real wages are eroding; it just takes time. Limited opportunities to revise wages are seen as playing a role in producing price coefficients less than 1 (Christofides, 1982). These stories explain temporary departures from rational expectations, but as explanations of wage nominalism, models involving lags and perception problems beg the key problem.

As a technical matter, wages could easily be 100 percent indexed to a broad inflation index and changed very frequently, even in the context of a long-term union agreement. Thus, stories of sluggish perceptions are not complete explanations of sluggish wage nominalism. The CPI is published on a monthly basis with only a one-month lag. No wage setter need *anticipate* inflation in a world with such a potential for complete indexing. Only in cases of hyperinflation would indexing wages with a one-month lag be inadequate.

Full indexing to the current CPI would eliminate any need for inflation forecasting, assuming the CPI is accepted as the correct measure. Hence, stories depending on imperfect or sluggish forecasting leave unanswered the fundamental question of why wages are normally indexed to the monetary unit rather than to the CPI. Note that even union-sector, escalated contracts use formulas, which often provide less than 100 percent inflation protection.<sup>10</sup>

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<sup>9</sup> Using an inflation expectations variable, such as the Livingston survey of economists' inflation predictions, will tend to produce a spurious unitary coefficient if both nominal wage change and surveyed price expectations sluggishly adapt to past inflation rates. But sluggish wage nominalism would still exist.

<sup>10</sup> Escalated contracts as a group often have lower guaranteed wage increases than nonescalated contracts, suggesting that negotiators project a positive inflation rate when they bargain. However, this projecting behavior cannot explain *incomplete* escalation, since whatever the guaranteed wage adjustment, partially escalated contracts will produce different real wage increases, depending on the inflation rate.

Despite criticism of the Phillips curve, applied economic forecasters still use nominalist wage equations in their models, which would not make Phillips curve researchers of the 1960s feel uncomfortable.<sup>11</sup> Empirical pragmatists are likely to accept wage nominalism since that is what the data indicate.

### Pure Economic Theory

Economic theory assumes rationality, which seems at first to rule out nominalism. The initial critique of the Phillips curve, with its sluggish form of wage nominalism, was largely based on the notion that rational wage setting *should* be in real terms. Hence, any attempt to lower the long-term rate of unemployment through inflation must ultimately fail. In this view, there will be a “natural” rate of unemployment that can only be varied by inaccurately perceived changes in inflation. Inaccuracies will not persist, so deviations from the natural rate are only temporary.

*The evolution of macro theory.* Keynes’ wage theory was primarily concerned with one form of nominalism—downward nominal wage rigidity based on bargaining preferences and decentralization. The original model lacked a wage equation applicable to the inflation-prone post-World War II era. So Keynesians in the 1960s used a modified Phillips curve as the missing equation. As a result, the critique of Phillips-curve nominalism in the late 1960s and 1970s also became a critique of Keynesian theorizing.

Much of the modern macro debate stems from that criticism: The more one is attracted to the idea that wages and prices are set in real terms, the less of a role there is for monetary policy to affect the real economy. Under rational expectations, only monetary surprises matter for real variables; predictable monetary policy can have no such effect. The logic of rationality pulls toward new classical supply-side models.

Analysts who seek to resurrect Keynes’ theory are thus forced to come up with explanations of why workers and employers would behave in a way that seems irrational. Wage nominalism is a key phenomenon that such modern new Keynesians must seek to explain (Ball, Mankiw, and Romer, 1988; Barro, 1989). So far, they have not succeeded, but neither have their opponents, who are likely to doubt the existence of wage nominalism.

The temptation is great for new Keynesians to select union-style inter-

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<sup>11</sup> As the U.S. Bureau of Economic Analysis (1986) stated in its write-up of its mid-1980s model, “[A]n augmented ‘Phillips-curve’ formulation of the wage rate equation is retained despite widespread doubt about the validity of the Phillips curve” (p. 48). Why? Because it seems to work, the Bureau explains.

personal and intergroup equity wage comparisons as their explanation of wage nominalism. However, this approach has failed to settle the debate for over half a century. An optimistic assessment of the current gap between the descendants of the classicals and those of the Keynesians is that eventually the clash of ideas will produce a better model (Mankiw, 1990). Some claim that the new models are about to explain wage nominalism, even if they haven't quite done so yet (Levine, 1989). But this outcome seems unlikely so long as the same stories repeat, albeit with increasing sophistication.

*Implicit contracts.* Here, the firm forms a long-duration relationship with its employees, thus moving the labor market away from a spot transactions model. The fact that a “contract” is said to be involved suggests a union-style system of wage setting, even without a union being present. Union contracts had long been seen as a source of wage rigidity prior to the development of implicit contract models, and union workers were known to have longer job spells than nonunion employees. Hence, the use of an implicit contract to serve as an explanation for wage rigidity, and long tenure is hardly surprising. Implicit contracts served as substitutes for explicit (union) contracts in theories of the nonunion sector.

Stories of implicit contracts can be based on various assumptions—that workers are risk averse and that it pays firms to provide their workers with stable employment and wages as a means of income insurance<sup>12</sup> (Baily, 1974; Azariadis, 1975). The security provided is a benefit, different in kind—but not in concept—from, say, employer-provided life insurance. Employers find the cheapest wage/benefit mix to maximize profits.

Unfortunately, the abstract nature of most implicit contracting models, especially of the risk-aversion variety, makes it difficult to rationalize wage nominalism. Presumably, what workers “should” want is stability of real incomes; implicit contracting should, therefore, stabilize the real wage (Akerlof and Miyazaki, 1980). However, escalators are found almost exclusively in the union sector where contracts are explicit.

Implicit contracting *can* be used to explain why short-term wage changes might not respond much to business-cycle pressures; the wage is more like an ongoing annuity obligation of the firm than a variable current cost. But

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<sup>12</sup> Some form of moral hazard must be called upon to explain why externally provided private unemployment insurance cannot be used for income stabilization, i.e., why the employer must provide it. But the existence of public unemployment insurance should have weakened the demand for implicit contracts if risk aversion was the chief explanation for their existence. Yet the period before the Great Depression (when public unemployment insurance began in the United States) was not noted for long-term employment relationships and job stabilization.

lack of a real wage guarantee for the flow of payments is a puzzle.<sup>13</sup> Furthermore, implicit contracting runs the danger of being another form of attributing union characteristics to the nonunion sector.<sup>14</sup>

If the real wage is stabilized and if the firm is assumed to make marginal employment decisions based on its current wage, then it is hard to rationalize cyclical unemployment.<sup>15</sup> What tends to emerge instead is a natural unemployment rate, for example, the “classical” unemployment stories told about Europe in the 1980s. It is difficult to put cyclical unemployment into a model without nominalism combined with firm decision making on employment based on the current nominal wage.

There are ways out of these boxes. For example, nominalism can be rationalized as a way in which workers reveal inflation risk preferences—assumed to be correlated with productivity—to employers (Smith, 1989), but the ability to create such stories proves little. It is useful to demonstrate that seemingly anomalous behavior need not be irrational; such demonstrations may prevent economists from denying the very existence of anomalies. But little can then be predicted since anything is possible. In any case, wage nominalism is not well explained by implicit contracts.

*Menu costs.* Variants of implicit contracting other than the risk aversion approach do not escape this problem. Nominal wage rigidity can be rationalized by finding reasons why changing wages is costly—that is, menu costs. One version has it that constantly haggling about wages is wasteful and permits alternating bouts of buyer/seller exploitation as business conditions change (Williamson, Wachter, and Harris, 1975). Hence, it pays to fix a wage for some time in advance through employer decision making. This is an old idea, which can be found in Hicks (1964 [1932]).

As with other models, there is the suspicion that the menu cost idea arose from union bargaining, where there are obvious menu costs—

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<sup>13</sup> As Azariadis and Stiglitz (1983) note with regard to implicit contract models, “[Wage] stickiness . . . is a property of the *real* rather than the nominal wage rate, and it is the latter that is assumed to be rigid in Keynesian macroeconomics” (p. 16). Economists usually associated wage rigidity with unemployment and are prone to look for price vs. quantity trade-offs in markets. Yet the implicit contract version of such rigidity need not produce unemployment. In effect, the wage received by workers can be divided conceptually between the market wage and the insurance bonus. The market wage could still clear the labor market in this view, leaving no unemployment (Newbery and Stiglitz, 1987). More important, a contract that stabilizes the wage but does not stabilize employment does not stabilize income. Few U.S. employers make employment guarantees; hours and employment are more flexible than wages.

<sup>14</sup> It is always a puzzle why, if nonunion employers want to offer union-style contracts to their workers, they don’t make these contracts explicit.

<sup>15</sup> The *average* firm finds its product wage unchanged if the real wage is fixed, ignoring international complications, although *individual* firms may be adding or subtracting labor as market preferences vary.

disagreement can lead to industrial disputes, and both sides have an incentive to reduce the frequency of negotiations. This incentive is the classic explanation of the evolution of multiyear union agreements in the United States, but such stories do not fit well in the nonunion sector.

One response in new Keynesian literature has been to develop reasons why the costs do not have to be large. This approach has been applied mainly to the price side rather than to wages, but presumably a labor market variant could be developed. In the product market version, the firm is assumed only to approximate the profit-maximizing price decision, presumably because of some (minor) menu cost of getting it exactly right. Pricing is thus said to be “near rational.” The firm then decides whether to move to the “right” price, based on a private cost/benefit decision.

Even in a partial equilibrium (micro) analysis, it may turn out that the social benefit of adjusting the price is much bigger than the private benefit. Hence, there will be too little price flexibility and much social harm. At the macro level, insufficient price flexibility can translate into a significant real output loss. For example, in a simple quantity theory of money model, output losses are proportional to the excess of prices over their “correct” level. Yet firms will not have sufficient incentives to correct the misalignment (Akerlof and Yellen, 1985; Ball, Mankiw, and Romer, 1988; Mankiw, 1985).

But there is a difficulty in using this argument to explain nominalism. Essentially, the menu-cost/near-rational approach suggests that *if* wage and price setting is nominalist, small menu costs can have big output consequences. But the approach does not by itself explain why wage and price setting starts from a nominalist position. Nothing precludes fixing a wage *formula* rather than a wage *rate*. The wage formula could be an escalator, effectively fixing the real wage instead of the nominal. Nothing precludes setting wages and prices in terms of gold rather than dollars. There may well be menu costs connected with a *shift from* nominalism to a formula or to gold. But menu costs themselves do not explain why nominalism is the starting point.

*The toll model.* Not all stories are modeled on quasi-union processes. There is, for example, the Okun (1981) “toll” model, which focuses on labor turnover costs. Firms pay a toll when they hire someone, which may be thought of as a combination of recruitment, screening, and training costs. Hence, employers limit turnover by offering a wage premium. Low turnover implies an ongoing relationship between employer and employee. Since the toll is linked to the individual worker, the collective aspect is absent from the Okun approach; there is no implicit union bargaining.

Once an Okun-style relationship is established (the “invisible handshake”), firms have an incentive to keep employees content by providing fair treatment. Cutting nominal wages during recessions might be seen as unfair. The motivation for providing fairness, however, provides relatively little guidance as to what fairness might mean. If workers think nominal wage cuts are unfair, employers will tend to avoid them. But where did the notion originate that nominal cuts are unfair? Tolls do not explain wage nominalism; the model simply accommodates a nominalist norm if that is what workers want.

*Efficiency wages.* The efficiency wage approach is a special case of the more general instance where variations in price cause variations in quality (Stiglitz, 1987). Efficiency wage models assume that by paying a premium in wages (relative to what the worker could earn elsewhere), the firm receives a benefit in the form of higher productivity or in some other cost-lowering behavior such as reduced turnover (Carmichael, 1990). Various reasons might be put forward for a productivity gain. For example, workers might shirk in the absence of perfect monitoring by management. But there is still some probability of being caught, and by paying a wage premium, the firm creates an expected penalty for shirking; the worker may lose his/her premium-paying job. Less conventionally, the premium might be viewed as a “gift” to the employee, who reciprocates with a gift of more effort (Akerlof, 1982).

Efficiency wage models have a union-sector flavor. Normally, the union sector is viewed as a place in which a wage premium is paid relative to what a classical auction market would suggest. In the union case, the wage premium is due to bargaining power. In the efficiency wage case, it is rationalized on other grounds.

When a time dimension is added to the premium, efficiency wage models tend to link up with implicit contracting. The premium might be offered in the future, that is, higher pay later in the employee’s career through an upward-sloping pay schedule tied to seniority. (Linking employee welfare to seniority is very unionesque, of course.) Workers who do not meet appropriate standards can be dismissed before reaching the premium period.

Obviously, all firms cannot pay a premium relative to each other. Presumably, firms array themselves into a wage structure. Those firms that can obtain the most benefit from a premium place themselves at the upper end of the interfirm wage hierarchy. But if the general level of pay is raised, the labor market will not clear. Unemployment, rather than a wage premium, becomes the disciplinary or incentive device (Shapiro and Stiglitz, 1984).



Although efficiency wage models may explain involuntary unemployment, they do not explain wage rigidity in the face of *changes* in unemployment over the business cycle. As unemployment rises, firms could (should?) lower their wage premiums since the greater cost of job loss would provide added discipline or added disincentive to quit. Moreover, efficiency wages do not by themselves explain nominalism; workers and firms ought to be making their decisions in real terms. Firms should look at the product wage in setting labor demand; employees should look at real wages offered (and real wages foregone in the event of unemployment) in making labor supply and effort decisions. Nominal wages would then have no particular significance.

*Insider-outsider models.* These presuppose an ongoing employer-employee relationship. Insiders (incumbent workers) defend their wage levels if these are threatened by job seekers who are willing to work for less than the inside wage. Insider resistance creates a static wage rigidity, which explains involuntary unemployment among job seekers.

The linkage between insider-outsider models and union practices is obvious. It is assumed that insiders have the power to make employers heed their wishes. In principle, nonunion insider workers might find ways of imposing costs on management; there is a long history in the personnel literature on the ability of nonunion workers to impose such costs (Mathewson, 1969 [1931]). But there is the important question of degree.

Can nonunion insiders really be said to have the same power over employer practices as union insiders? If so, why are there union/nonunion wage premiums? As Ulman (1990) shows, the institutionalist literature has long supposed that unions were more effective at resisting nominal wage cuts than were disgruntled nonunion workers.

There may be a national element at work. Proponents of insider-outsider models have, in fact, tended to come from countries where unions are strong (e.g., Britain and Sweden), and so it may seem natural to them to assume considerable leverage in the hands of insiders over employer wage policy (Lindbeck and Snower, 1988). In fact, there is a tendency for insider-outsider analysts to use union bargaining in modeling insider behavior (Carruth and Oswald, 1987a).

When combined with old Keynesian notions about decentralized wage determination, insider-outsider models could be used to explain downward nominal wage rigidity (Naish, 1989). But this approach leaves open—as did the original Keynesian argument—the question of *why* workers would worry about their relative wage rather than their real wage. Alternatively, it might be argued that any nominal cut is also a real

cut. Yet this will not be true in periods of falling prices, such as the early 1930s.

If workers thought in real terms, resistance to proportionate or less-than-proportionate wage cuts in the face of falling prices should not be observed. The experience of the Great Depression suggests that resistance did occur; nominal industrial wages in the United States were basically unchanged during 1929–30. But thereafter, money wages were cut, and strikes over wage issues began to rise despite adverse cyclical pressures. Nominal manufacturing hourly earnings fell by 22 percent during 1930–33 but remained stable in real terms (U.S. Bureau of the Census, 1975).

*Limits to contemporary economic theorizing.* Recent economic theory involving implicit contracts, efficiency wages, and insider-outsider arguments has pinpointed the paradoxes in labor market behavior. Often, these approaches appear to have been modeled on union behavior. The newer models do offer ways to understand labor market phenomena such as long-duration employment spells, the existence of (static) involuntary unemployment, and the structure of wage premiums.

Despite this very important contribution, the new models have not opened up the “black box” of wage nominalism; there has been little advance beyond the Keynesian decentralized bargaining approach. On the empirical side, contemporary wage equations often look remarkably like Phillips curves, modified to meet the Friedman-Phelps critique.<sup>16</sup> The record suggests that the search for an explanation of wage nominalism needs to move in a new direction.

### Lessons from Survey Research

To the extent that economists have looked outside the economics literature to understand wage rigidity, it has often been to the personnel-sociological literature on interfirm wage comparisons (Annable, 1977). In short, they have searched for confirmation of the Keynesian notion of wage comparisons and decentralized bargaining. But this effort to confirm one particular theory of asymmetric wage nominalism can hide other explanations, and it sheds little light on the sluggish version of wage nominalism.

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<sup>16</sup> For example, Blanchard (1988), after reviewing contemporary thinking, produces a wage equation where the log nominal wage is a function of the log expected price level and the log unemployment rate. Thus, the rate of nominal wage inflation is a function of the change in expectations about the price level (which might easily be a function of past price inflation) and the change in the unemployment rate. A 1960s Phillips curve estimator—inevitably a pragmatic individual—would probably not have been too offended by trying the change in unemployment instead of the rate of unemployment in the equation.

There is evidence in the psychological literature that perceived pay inequities can affect productivity, a finding that could support some types of efficiency wage models (Adams and Rosenbaum, 1962; Vecchio, 1982). Until recently, psychologists did not have an interest in the issues of wage nominalism that bother economists.<sup>17</sup> However, survey evidence shows that a real wage cut accomplished by a nominal wage reduction is seen as much more unfair than an equal real wage cut produced solely by price inflation<sup>18</sup> (Kahneman, Knetsch, and Thaler, 1986). This evidence does not involve detailed wage comparison information. Thus, the Keynesian suggestion of the *existence* of asymmetric wage nominalism as a worker feeling is supported, but there is little support here for the idea that resistance to wage cuts stems from unioesque worker concern about relative wages.

The psychological approach emphasizes the “framing” of questions in forging attitudes. Nominal wage cuts seem to be perceived as losses because something tangible is taken away. Employees may react to such “unfair” nominal takeaways by such behaviors as increased theft (Greenberg, 1990). In contrast, real wage erosion via price inflation is subtle; wage increases below the inflation rate may actually be seen as gains (Tversky and Kahneman, 1986).

Experiments in which arbitrary endowments are given to individuals suggest a tendency to value one’s initial endowment and be less willing to trade it for other goods than economic theory would suggest (Knetsch, 1989). If the nominal wage is viewed as such an endowment, the loss of a piece of it might be seen as especially severe. Feeling that a wage cut amounts to taking something away need not depend on information that the resulting wage scale would be less than someone else’s. Thus, in the context of an ongoing employment relationship, asymmetric wage nominalism is possible without Keynesian intergroup comparisons. Unfortunately, the psychological literature does not explain *why* the nominal wage is what workers think they possess rather than the real one.

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<sup>17</sup> Some economists have adopted survey methodology to deal with questions related to wage nominalism, e.g., Kaufman (1984) for Britain and Blinder and Choi (1989) for the United States. Economists, however, seem to survey employers rather than employees. There is a psychological literature on how much of a pay increase is “meaningful” to employees (Varadarajan and Futrell, 1984; Rambo and Pinto, 1989). But psychologically oriented researchers have tended not to deal explicitly with inflation rates in their studies, nor are wage decreases analyzed.

<sup>18</sup> McCallum (1986) suggests that to understand the lack of nonunion wage indexing, the reader should ask himself/herself introspectively why he/she does not have an escalated contract. McCallum explains that he has no such contract with his dean because it would be too costly, given the benefit. Curiously, if introspection is to be used to explain nominalism, McCallum does not go further and ask himself why he and his dean begin their contract negotiations on a nominalist basis.

## Money as the Explanation of Nominalism

As resilient as the decentralized-bargaining approach has been as an explanation of wage nominalism, it is time to question its primacy and look for an alternative. First, there is a need to develop an explanation that is not dependent on unions. Second, there is a need to develop an approach that does not depend on intergroup or interpersonal wage comparisons. Such stories are union-oriented, whether their proponents realize it or not.

There are other phenomena, apart from the determination of across-the-board wage adjustments, that suggest nominalism and that, therefore, require explanation. For example, during periods of high inflation, employees under merit systems often receive individual merit awards along with general pay adjustments. Yet because the proportion of nominal pay adjustment devoted to merit increases shrinks, workers are less motivated by the merit component (Foulkes, 1980). Such behavior makes sense only if workers cannot clearly distinguish between real and nominal wages.

Finally, there is much evidence of nominalism outside the labor market. Nominal value comparisons are often made in the popular press on matters varying from government spending to the price of gasoline without recognition of the impact of inflation. Loans are seldom expressed in real terms. Studies of consumer behavior have long reported signs of nominalism in spending habits (Koskela and Sullström, 1979; Branson and Klevorick, 1969). Government prices, such as fines for violation of the law, are often fixed in nominal terms for long periods. Accounting procedures involving depreciation or inventory depletion often assume zero inflation.

*The adoption of standards: An alternative approach to nominalism.* In pure economic theory, the choice of numeraire is viewed as largely irrelevant since only relative prices matter. With perfect information, one could convert from one numeraire to another, much as one converts from Celsius to Fahrenheit. But, in fact, the choice of measurement standards is quite important. Standards often influence behavior and convey meaning.<sup>19</sup>

Of course, if standards are felt to be grossly deficient, they can be changed. But the costs are often significant, ensuring that changes of

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<sup>19</sup> For example, consider the selection of a language as a communication standard. While one can convert from one language to another, translation is often inexact. Some languages may be better than others for expressing particular thoughts. When there was a desire in the United States to promulgate the idea that job choice should not be restricted by gender, it was relatively easy in English to desex occupational titles, for example, change *fireman* to *fire fighter*. But in languages where nouns must be either masculine or feminine, the task is more difficult. A *pompier* (fire fighter) in French has a masculine connotation since the word is masculine. Money as a standard seems more akin in practice to language than it does to temperature measurement.

standards are not lightly undertaken. Sweden converted from driving on the left to driving on the right in order to be more like its European neighbors. The change required replacing street signs, reconstructing highway on-ramps and off-ramps, and scrapping streetcars (whose doors opened on the wrong side), not to mention changing driving habits. Japan has not made such a switch, even though its export-oriented automobile industry would probably benefit.

Often the change or adjustment of a standard requires a central coordinator, such as the government. Shifting from daylight to standard time and back requires such coordination, even though the need for such an adjustment is dictated by astronomical factors. The coordination requirement arises because the value of having a standard is primarily that everyone uses it, even if it is imperfect. A change to a better standard is difficult unless there is a guarantee that all users will adjust simultaneously.

Where there is no official coordinator, a standard can evolve for reasons of historical accident, such as the use of English for international commerce or the use of the QWERTY keyboard on typewriters and word processors (David, 1985). Even if there are theoretically “superior” standards available (Esperanto, the Dvorak keyboard), they are not readily adopted since what makes a standard truly valuable is widespread use. With standards, there are often increasing returns to their adoption; the more people who use them, the more valuable the standards become. Each marginal adopter gains more from the adoption because those who have gone before now use the standard.<sup>20</sup> Once a critical mass of users develops, still more users are attracted, and the standard becomes locked in place.

*Money as a standard.* Having a monetary unit as both a numeraire and as a means of exchange is an essential ingredient of modern economies. The alternative barter system entails such heavy transaction costs that exchange would be drastically limited. Designation of a monetary unit is usually the role of an official coordinator, such as a central bank. Wages and other prices are then denominated in the unit. In the context of an ongoing economic relationship (such as employment), they become indexed to that unit. Thus, U.S. wages—indexed to the dollar—rise and fall with the dollar in terms of other currencies or particular commodities. *Money as a standard is the missing link in explaining wage nominalism.*

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<sup>20</sup> Complex models of the economics of adopting standards have been formulated (Farrell and Saloner, 1986). These can lead to sluggishness in standard adoption or rapid momentum toward them, depending on assumptions. Since countries do not seem readily to switch numeraire, it appears that the monetary unit standard falls in the former category.

*Keynesian decentralized bargaining models, implicit contracts, menu costs, and the like are not. If there is a coordination failure surrounding nominalism, it is that government has not promoted indexation.*

There is an analogy between the use of the money standard and Schelling's (1963) concept of a "focal point" in bargaining and other games. Schelling noted that in games where agreements must be reached, there are often environmental clues that allow tacit coordination. If two people are given \$100 on condition that they reach an agreement on how to share the money, they usually end up with a 50–50 split. Absent other information, such a solution seems "natural," and any other proposed division is likely to be measured against the 50–50 outcome. Similarly, the money standard is the focal point for wage and price setting; any other approach is on the defensive.<sup>21</sup>

Once adopted, monetary standards are difficult to change. Values are perceived in the standard, even if the standard is an imperfect measure of value over time. Whatever the deficiencies of the dollar as a value standard, it is blessed with the overriding virtue of widespread usage. The CPI is not so blessed. As McCallum (1986) points out:

In a typical monetary economy . . . a seller who quotes price in units other than the monetary unit of account forces potential buyers either to convert those prices into money prices or to agree to a bargain expressed in unfamiliar terms. (p. 409)

As in the near-rational story, even if there were significant social benefits in moving away from nominalism, these would not be captured privately by the atypical transactor.<sup>22</sup>

Obviously, a desirable characteristic of a monetary standard is relative stability of its purchasing power over a broad range of goods. By that criterion, some monetary units are better than others, such as the Swiss franc, which is a better currency than the Italian lire. Yet the Swiss franc has not replaced the lire as the measure of value *in Italy*. Unless inflation reaches very high levels and creates great uncertainty, individuals will continue with the local money standard and rely on such devices as periodic renegotiation of contracts to correct inflation-caused errors. Monetary nominalism is a powerful force affecting all markets, not just the labor market.

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<sup>21</sup> I am indebted to an anonymous referee for this analogy.

<sup>22</sup> Whether there would be such benefits is beyond the scope of this essay.

*Use of escalation.* Price indexes and escalation are basically twentieth-century inventions. Although these innovations could, in theory, correct problems of instability in the nominal monetary unit, their adoption is more difficult than economists may recognize. The monetary unit as a standard of value is sticky, just as are many other standards. It might be “better” to specify the terms of labor and other contracts using a CPI standard in place of the dollar. But switching standards is difficult.

In various countries, government collection of data on prices was, in fact, associated with the perception that there were deficiencies in the monetary unit as a numeraire for wages. Typically, early in this century, attempts were made to determine a just wage in terms of the minimum budgets that were needed to maintain a designated living standard. Then it was recognized that changes in prices would affect the nominal sums required. Hence, it was necessary periodically to reprice the budgeted items. In the U.S. case, these developments occurred in association with government arbitration of union-management disputes during World War I (Goldberg and Moye, 1985); regular publication of retail price indexes developed from these origins. However, it is a long step from the official measurement of price changes to its regular use in wage setting. Since unions employ research departments and have experts who can understand price indexes and adapt them to wage setting, their partial adoption of indexing is understandable. Even so, it took many years for the idea of escalation to come into use, even in union contracts. Although the CPI had its origins in the World War I period, use of escalation in union agreements is largely a post-World War II phenomenon (Jacoby, 1985), and only a minority of union workers have escalators.

In an economy in which most people are on a dollar standard, wage escalation poses a problem for firms who price ahead in nominal dollars. Wage escalation is comparatively rare in the unionized sector of the construction industry since builders often make long-term pricing contracts in nominal terms with their customers. There is considerable literature on the incidence of escalation in union wage contracts (Hendricks and Kahn, 1983, 1986); this literature usually depicts escalation as a mechanism for workers to transfer the risks of inflation to their employers, some of whom are better able to bear those risks than others (Card, 1986). Unions “pay” for this insurance as part of the negotiating trade-off.

Such views take the nominal dollar standard as the norm for wage and price setting. The dollar standard does pose an inflation risk for workers. Those groups of workers who receive escalator coverage shift this risk (partially) to their nominally pricing employers. But escalator/risk models

do not explain why all wage and price contracts are not usually set in real terms (why the CPI standard is not the norm). Since the monetary unit is the norm, departing from the norm poses a risk. If the CPI were the norm, setting wages by the CPI would not create a special risk.

The reason wage nominalism and other forms of nominalism are commonplace is that initial conditions entailed use of a nominal dollar standard long before the CPI was invented. Wage nominalism also predates modern unionism. Given that history, it is now exceedingly difficult to shift to a real standard. When a shift is made for just a few wage-setting units in an otherwise nominal world, complications arise, such as the widening wage premium between escalated union workers and other union and nonunion workers in the 1970s.

*Determining the rate of inflation.* If all wages were to be set in real terms, there would have to be general knowledge of, and agreement about, the rate of inflation. The CPI has been available for many years and provides one measure of the inflation rate. However, other price indexes that can diverge from the CPI are also available. Even within the context of the CPI, there have been methodological controversies.

CPI methodology is sometimes changed, making the seemingly continuous index inconsistent over various periods. For example, during the 1970s, there was significant debate over the treatment of housing costs and the resulting sensitivity of the index to mortgage interest rates (Mitchell, 1982). Other issues surrounding the CPI have concerned the appropriateness of the index's weighting scheme for particular demographic groups and its treatment of the costs of mandated automobile smog and safety equipment. During the Cold War, the U.S. CPI was even attacked by the Soviets at a UN-sponsored meeting as a capitalist tool for exploiting labor (Goldberg and Moye, 1985).

Apart from methodological issues, there is the basic fact that few employees understand the CPI or how it might be used. Periodically, the Bureau of Labor Statistics publishes pamphlets explaining the CPI in the most simple terms, illustrating how to calculate the percentage rate of inflation and demonstrating the CPI's use in indexing. The fact that the Bureau feels it necessary regularly to explain the arithmetic of calculating inflation rates from the CPI is itself evidence of public ignorance. Indeed, how many professional economists know more about the intricacies of the CPI than the Laspeyres formula they learned in graduate school?

Purists will argue that setting wages in real terms does not strictly imply their determination in accord with any particular price index. Rather, it means a free auction market for all goods and services (including labor),



in which only relative prices matter and money is a veil. Use of the CPI is simply an approximation to this ideal notion. As a practical matter and certainly in any theory of ongoing implicit contracting, wages must be specified in some unit. If that unit is to be real rather than nominal, a price index must be specified. Which (imperfect) index should that be? What would it take to make virtually all wage setters shift from the traditional dollar standard to the CPI standard or to some other price-adjusted standard? Evidently, decades of inflation are not enough to cause such a shift.

### Fisher Was Right

This survey has defined two types of wage nominalism. First, there is the sluggish response of wages to prices represented by a less-than-unity price coefficient in a short-run Phillips curve. Second, there is asymmetric resistance to nominal wage cuts. A variety of explanations of these behaviors has developed, ranging from the old Keynesian notion of decentralized union bargaining and wage comparisons to modern theories of implicit contracts, efficiency wage models, menu costs, and insider-outsider stories.

When examined closely, most explanations of wage nominalism start with the hidden (nominalist!) assumption that the norm in wage determination is to index wages to the currency unit. While the assumption is valid as a descriptive fact, making the assumption—rather than explaining it—begs the true question. In a nominal standard world, workers will measure fairness in nominal terms. Any theory that leads to the conclusion that employers maximize profits by accommodating worker notions of fairness will thus “explain” wage nominalism. But the challenge is explaining why nominalist behaviors are considered fair.

I argue that nominalism is more than just a labor market phenomenon. Fisher noted back in 1928:

Money illusion so distorts our view that commodities may seem to be rising or falling when they are substantially stationary, wages may seem to be rising when they are really falling, profits may seem to exist when they are really losses, interest may be believed to be rewarding thrift when no real interest exists, income may seem to be steady when it is unsteady. (pp. 175–76)

In short, the denomination of values in monetary terms is not just an accounting convenience. Money is not a veil. Wage setters, union and nonunion—and everyone else—do more than use dollars as units of ac-

count; they “think” in dollars and then make rough accommodations when inflation causes problems.

In any case, wage nominalism should not be singled out as more peculiar than nominalism in other facets of economic life. It would be peculiar in a monetary economy if wage nominalism did not exist. Elaborate explanations about wage relativities, decentralized bargaining, risk aversion, menu costs, and the like are at best supplementary explanations. Money as a value standard is the basis of wage (and price) nominalism.

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