

Not Yet Dead at the Fed:
Unions, Worker Bargaining, and Economy-Wide Wage Determination

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Transcripts of the Federal Open Market Committee of the Federal Reserve and related documents provide new insights into how macro policy makers characterized the labor market. Over the period of the 1980s and the 1990s, the Federal Reserve seemingly overemphasized the significance of union settlements, characterizing them in wage-push terms out of proportion to declining union density. Fed policy makers expressed surprise that the NAIRU dropped during this period and offered various ad hoc explanations to explain the drop. The underlying common element of these explanations is that they were based on a rhetorical bargaining framework, explicit or implicit: that workers bargain as active agents for wages. Along with ongoing direct discussion of union settlements, this tendency suggests a view of worker bargaining power that seems at variance with union decline and the reality of an increasingly nonunion labor market. While worker bargaining models can be reconciled in a formal sense with various theories of nonunion wage determination, the ability of such models realistically to explain the macro outcomes that puzzled and challenged policy makers can be questioned.

Pay setting and its potential inflationary impact was a major source of concern to academics and macro policy makers from the end of World War II until the 1980s.¹ (e.g., Okun 1975, Mitchell 1980) The literature of that era, both academic and popular, contained discussion of “wage-push” inflation and “wage-price spirals.” In response to these concerns, the U.S. imposed formal wage and price controls during World War II, the Korean War, and the Vietnam War. It utilized voluntary wage-price standards during the Kennedy-Johnson and the Carter administrations. And even when such programs were not in effect, e.g., during the Eisenhower and Ford years, there was general public concern about creeping inflation and its relation to labor cost pressures.

Such concerns were not limited to the U.S. Europe also had its "incomes policies" aimed at reducing inflation; analyses of these efforts abroad were imported back into the U.S. reinforcing the American programs and policy debate, and the U.S. experience also affected policy in other countries. Considerable research was done on evaluating the incomes policies of

the U.S. and other countries. (Galenson 1973; Goodwin 1975; Perry 1967; Sheahan 1967; U.S. Office of Economic Stabilization 1974; Weber 1973; Weber and Mitchell 1978) .

The not-so-hidden element in discussions of incomes policy and the various wage-price programs was that they were concentrated on behavior in the union sector. Unions were seen as the active agent in wage determination. It was widely thought by academics and policy makers in the U.S. that “key” union wage settlements set patterns that spilled over into wages generally. Early econometric work seemed to confirm this notion. (Eckstein and Wilson 1962). Control of wages meant checking overly-aggressive union bargaining that pushed up costs and therefore prices. And union officials clearly felt that they were the target of controls and guidelines. (Robinson 1981).

By the mid-1980s, however, interest among academics in wage-push and similar notions of wage/price setting rapidly diminished. For example, there is little discussion of the macro/inflation side of collective bargaining in the Richard Freeman and James Medoff (1984) watershed book of that era on union economic effects. When the Freeman-Medoff volume appeared, union membership was falling rapidly, not just relative to overall employment, but in absolute terms as well. Concession bargaining - wage and benefit freezes and cuts - had developed across a broad range of unionized industries. Inflation was rapidly decelerating.²

In this paper, we investigate how the Federal Reserve’s discussions of union bargaining activity – and the notion of worker bargaining power more generally - evolved over the Reagan, Bush (Sr.), and Clinton presidential administrations. As a monetary policy body, the Fed is of course not interested in unions per se – or even wage determination - but rather only insofar as wage setting has an effect on certain macroeconomic outcomes, particularly price inflation. By analyzing Fed perspectives as reflected in its published deliberations, we learn about the evolution of policy orientation during a period of union decline. More specifically, we learn about the stated views of the influences of union settlements and the perception of worker wage bargaining on macroeconomic outcomes. We investigate the assumptions behind and credibility of the implied mechanisms linking unions and the bargaining activities of non-unionized workers to overall inflation. Additionally, Fed deliberations suggest that analytical models that developed when policy makers still devoted attention to union pay settlements may have influenced policy perceptions of worker bargaining power. Those perceptions seem (to us) at variance with reality for the bulk of the workforce.

We find that at the Federal Reserve in the 1980s and beyond, policy makers seemingly continued to see union wage setting as important in the old wage-push sense. The fact that discussions of union settlements declined with the unionization rate did not surprise us. But although the slope of the trend was as expected, the absolute value was a surprise.

Even when not explicitly considering union settlements, Fed policy makers tended to put the concept of the NAIRU into bargaining terms.³ Discussion among policy makers often proceeded as if wages were negotiated by workers with bargaining power. Workers were described as “demanding” and “seeking” wage increases. They were not depicted as isolated agents in the labor market choosing to take or walk away from a market-determined or employer-determined wage rate.

We do not mean to imply that policy makers were unaware of union decline; at times that decline was explicitly recognized. Nor can we definitively establish that such a view of the labor market had a distinct effect on policy decisions. But at the very least, it can be said that bargaining rhetoric continued even though the primary instrument through which workers actually bargain, unions, came to cover a small fraction of the workforce. From the beginning to the end of the period discussed, the private unionization rate dropped from roughly one fifth to about one tenth of wage earners.

Of course, there are some workers (e.g., professional athletes, higher-level executives) who do have significant individual bargaining power. And there are theories of wage determination - noted below - that provide some rationale for nonunion “bargaining.” But we will disclose our bias in indicating that we are skeptical that the bulk of the workforce can be well described as having significant negotiating power absent unions. About two thirds of wage and salary workers fall outside the managerial and professional categories. And even within those classifications, many workers are not in a position to dictate their terms and conditions.

Although we have only fragmentary information for the period after 1998 and about macro policy-making outside the Fed, it appears that the wage bargaining/wage-push idea lived on despite continued de-unionization. Particular high-profile union settlements continued to be viewed as indicative of inflation tendencies, and workers were generally viewed as active bargainers. The wage-push notion was not yet dead at the Fed and seems likely to have persisted in other policy circles, at least into the Clinton years.

How can it be that in an era when prominent observers of the labor market – such as Freeman and Medoff – no longer thought that unions were important players at the macro level, policy makers continued to hold such views? Why did bargaining rhetoric persist into an era characterized by a decidedly nonunion labor market? Why was it assumed that nonunion workers would somehow bargain for their wages as if they were union-represented? After providing documentation of our findings on policy discussions, we offer observations about this seeming paradox.

Data Sources

Various sources of information have been used in this study. At the Federal Reserve there is a surprisingly rich documentation available in the form of transcripts of the Federal Open Market Committee (FOMC). These word-for-word transcripts go back to 1981 and are published with a 6-year lag.⁴ Originally only available in paper format, they now are also accessible on the Internet, along with various documents that were reviewed by FOMC members during their debates.⁵ We draw heavily on those transcripts and related materials for the period 1981-1998. More limited information on Fed deliberations is available for later years.⁶ There is even more limited documentation available at the Reagan presidential library concerning internal policy discussions,⁷ and various Reagan, Bush (Sr.), and Clinton policy makers have since written about their deliberations, adding to the official documentation now available. Finally, we spoke with policy makers to gain insight into the decision process.⁸

Monetary Policy During Reagan-Bush (Sr.)

The FOMC is the main forum in which U.S. monetary policy is made.⁹ Not surprisingly for a central bank committee, discussion at the FOMC primarily revolves around monetary/financial matters, e.g., interest rates, securities markets, and exchange rates. References to wage setting come up primarily during roundtable discussions of national and regional economic conditions. During such discussions, there is an exchange of anecdotal evidence as well as reaction to staff presentations and interpretations.¹⁰ Under incoming Fed chair Paul Volcker in the late 1970s, monetary policy shifted to a "monetarist" orientation, with much focus on the money supply and monetary aggregates as targets rather than on interest rates. Although some political advisors in the Reagan administration worried about Volcker's strict

disinflation regime, ultimately the administration went along with his approach.¹¹ (Neikirk 1987, p. 95; Feldstein 1994, pp. 8-12)

Under Fed chair Alan Greenspan, who took office in the late 1980s, monetary aggregate targeting was gradually abandoned in favor of setting interest rates. But whether the Fed was ever strictly monetarist in its approach has been debated by analysts. As one member of the Fed's Board of Governors put it during the monetarist period:

*“Let’s rely on the broader definitions
While eyeballing the level of rates
And pray that the economy does not suffer
The worst of all possible fates.”¹²*

For our purposes, we use the word “monetarist” below to encapsulate the general doctrine that inflation should be seen as a monetary phenomenon. A corollary of that view is that targeting particular wage settlements or trying to weaken unions directly is not an appropriate form of macro policy. But despite monetarist sentiments, in a pragmatic way monetary policy makers at the Fed were more likely than administration economists to use visible union wage settlements as a proxy for success in achieving disinflation. Wage-push seemed to live on at the FOMC, albeit hidden from public view.

Fed Chair Volcker apparently regarded the outcome of union negotiations as especially significant from a macro viewpoint. To Volcker, the foiled Professional Air Traffic Controllers Organization (PATCO) strike – in which President Reagan fired and replaced the strikers - was a blow to inflation. He saw a direct impact on subsequent wage setting and inflationary expectations. According to Volcker, “The significance (of PATCO) was that someone finally took on an aggressive, well-organized union and said no.” Volcker regarded the PATCO outcome as having “a psychological effect on the strength of the union bargaining position on other issues – whatever the issues were.” (Neikirk 1987, p. 110)

In short, Volcker viewed affecting union wage determination through monetary restraint as important for the Fed’s disinflation campaign. One commentator characterized the Fed chair’s view as founded on the idea that “inflation would not be securely defeated...until all those workers and their unions agreed to accept less. If they were not impressed by words, perhaps the liquidation of several million more jobs would convince them.” (Grieder 1987, quote on p. 431;

discussion on pp. 429-431) Others at the Fed apparently had similar wage-push ideas. (Grieder 1987, p. 454)

To Volcker, direct intervention in particular wage settlements was not desirable (and clearly not the province of the Fed). But a monetary squeeze that forced the union sector to hold down nominal wages in the hopes of preserving jobs was an appropriate policy instrument. Squeeze the unions and other wages (and prices) would fall into line. Below we document Fed policy during the period 1981-1992 under Volcker and, later, Alan Greenspan. We show how analysis of union settlements figured in policy discussions at the FOMC. Then we move to the Clinton era during which the focus on union settlements was reduced, but still persisted.

Monetary Policy During the Slide Into Recession: 1981-1982

Monetary policy in the early 1980s was faced with the legacy of stagflation of the prior decade. As Figure 1 illustrates, CPI-measured inflation by that period had reached double-digit levels, although the rate was exaggerated by anomalies in the treatment of home prices. Union wage inflation had generally exceeded the nonunion rate, and had been targeted by Carter's program of direct intervention. Subsequent concession bargaining in the union sector brought union wage inflation below nonunion and coincided with a decline in price inflation.¹³

Figure 1 about here

Not surprisingly given the history of union negotiations and membership trends during the Reagan-Bush era, attention at the FOMC gradually became less focused on unions per se, and moved toward more generalized concerns about “wage pressures,” a term used repeatedly during the period we examine. However, union developments were repeatedly cited, nonetheless. In March 1981, staff economists reported that economic slack was producing “some signs... of selected easing of wage pressures.” The notion that wage disinflation was necessary for price disinflation was repeated in the staff briefing of May 1981: “To achieve a sustained reduction in inflation will require a slowing of wage increases...” However, the staff reported “there is not convincing evidence of general progress on the wage front” yet.

At the July 1981 meeting, the staff anticipated that “the prolonged period of slack labor markets should soon pay dividends in some easing of wage inflation.” Fed Chair Volcker in

August indicated that patience would be needed: “We have to play the game long enough so that we have a degree of confidence in the price outlook that begins to be inbred in behavior, including wage negotiations.” However, Volcker did not yet believe that such revised expectations had begun to occur, although they would do so “in the fullness of time.”

By October 1981, the union sector was beginning to slide into concession mode. Governor Frederick Schultz¹⁴ noted what he viewed as progress:

“I have never felt that there was any way to get inflation down without putting pressure on business and labor. Put pressure on business and they have to find a way to cut those costs because they don’t have [available] the path of least resistance of raising prices. And if you put pressure on business, labor begins to get the point that if they get too much in wages they won’t have a business to work for. I think that really is beginning to happen now and that’s why I’m more optimistic. Every business I know of out there is doing everything it can to cut costs. When the Teamsters open the master contract because they see some of their truckers going under, when the UAW talks about job security instead of wage increases, and when Pan Am workers are willing to take 10% wage cuts because the airlines are in trouble, I think those are signs that we’re at the point where something can really start to happen.”

Other FOMC members, including Volcker, agreed. Minneapolis Bank President E. Gerald Corrigan argued that people would be looking for signs in 1982 that the Fed would ease up. Thus, the key was to convince “the business people who set prices; the union leaders who negotiate wages; and the institutional money managers” that the Fed would remain on its anti-inflation course. In December 1981, FOMC members exchanged new anecdotes about the reopened Teamsters Master Freight Agreement (interstate truckers) and the possibility that the United Auto Workers (UAW) union would reopen its contracts with the major automobile companies and other employers. It was reported that General Motors (GM) was freezing nonunion white-collar pay as a signal to the union. But FOMC Vice Chair Anthony Solomon indicated that his business contacts thought that union settlements would run at 9% or more in 1982. Solomon was a believer in spillover to the nonunion sector. Even if the plants involved were nonunion, the same wage increases would apply as at union plants, he indicated, “as a matter of (personnel) policy.”

At the first meeting of the FOMC in February 1982, there was more talk about union concessions that were then occurring. Vice Chair Solomon fretted that some of the concession

contracts had reopeners that could reverse the downward pressure on wages if economic conditions improved in the future. Concern was also expressed that high unemployment was causing political pressure to develop that could undermine Fed policy. The possibility of bankruptcies at Chrysler, Ford, and International Harvester was also discussed in the context of general economic distress.

At the June-July 1982 meeting, the staff reported that “the prolonged period of slack labor markets has paid handsome dividends in an easing of wage inflation.” It cautioned, however, that relaxing monetary tightness might cast “doubt on the Committee’s longer-run intentions to curb inflation, with adverse impacts on whatever emerging tendencies there may be for labor and business to temper wage bargains and pricing decisions...” A bitter strike at Caterpillar that had begun by that time was discussed at the October meeting. It was argued that the UAW was basing its militancy on past conditions at Caterpillar and did not fully appreciate the firm’s worsened situation. Nonunion pay increases in financial services were still said to be running high – even at the Fed’s own regional banks – due to salary survey methodology that based pay on what other employers were doing. But at the FOMC’s final meeting for 1982 in December, the staff reported that “the wage sector in particular looks quite good...”

Early Recovery: 1983-1984

In February 1983, the theme of good wage performance from the FOMC viewpoint was repeated. Union concessions were having a dampening effect on wages. And the old 1980 contracts with high built-in wage increases from the era of inflation were going to expire and be succeeded by contracts with lower wage increases. By the March meeting, the staff reported that “...in general union settlements continue to reflect the realities of the labor market, and apparently a decline in inflation expectations.” The same view was repeated in May; wage settlements were now taking place in a low-inflation environment so that inflation expectations built into the new contracts would be low. In July, the staff reported that while one might argue that wage concessions are one-shot events, they were nonetheless continuing to occur. But better business conditions in the next year might lead to a reversal of some concessions.

FOMC Vice Chair Solomon argued in August 1983 that “I don’t see that the American labor movement is going to take the bit between its [teeth]...” Wage settlements, he said, would stay in a range compatible with 4-6% inflation. But Chair Volcker was concerned about an

AT&T settlement that featured annual increases of about 5.5% over three years according to his information. There was debate on whether other unions would follow AT&T. AT&T, Volcker argued, was experiencing high productivity gains that could absorb big wage hikes, but other sectors were not. In October 1983, notable union wage concessions in steel were discussed.

Some Chrysler workers voted against a generous contract because they wanted still more, it was reported; the problem was said to be that the ones who voted were the senior employees who were still working. Concern was expressed by Governor Preston Martin about younger leaders who were taking over unions. They would want to show the membership that the older leaders had made concessions because they “got tired.” But other FOMC members pointed to the uncertain labor relations situation at Eastern Airlines; some workers there – it was argued – were more willing to make concessions than were their union leaders. Volcker agreed that the wage outlook was uncertain; the outcome would depend on “psychology and expectations.”

In November 1983, staff noted that 1984 would be a relatively light bargaining year. The concession contracts made in 1982 would not expire until 1985. Cleveland Bank President Karen Horn indicated that it was difficult to convince unions of the need for productivity increases because they feared that job loss could result. But Preston Martin seemed to back away from his old leader/young leader paradigm. The young leaders might want to be more militant. But since unemployment was above the NAIRU and there was substantial foreign competition, the new leaders couldn't actually be more militant in practice.

FOMC staff argued that the NAIRU was in the 6-7% range because workers had grown used to productivity advances in the 1950s and 1960s that permitted real wage increases of 2-3% per year. But now those productivity gains were not occurring. The result was a boost in the NAIRU, which should gradually decline as worker expectations adjust. Still Governor Lyle Gramley argued in December 1983 that “the underlying factor driving inflation is wages... What we do now is going to affect wage bargaining throughout 1984 and 1985. That is what we have to worry about.”

Inflation worries continued into the new year. The Fed boosted the Federal Funds overnight interest rate significantly during 1984, slowing the economy and causing the unemployment rate to stagnate at a relatively high level. At the January 1984 meeting of the FOMC, staff reported that since unemployment was going to be falling below the top end of its

6-7% NAIRU range estimate, there would no longer be “downward pressure” on wages. Indeed, Governor Henry Wallich felt that staff estimates for inflation were understated.¹⁵

At the March 1984 meeting, Keehn reported that with wage contracts running in the 4-5% range, people were “very, very apprehensive about the (upcoming) auto negotiations.” But there were other views. One member noted that airlines were still obtaining wage concessions from their unions. Another reported that the mayor of Philadelphia was taking a hard line in negotiations with his municipal unions. The auto negotiations were again discussed in May. Concerns were voiced that GM might not be willing to take a strike to hold down its labor costs. But a hope was expressed that the ultimate contract might further link wages to profits.

In July 1984, Chair Volcker continued to indicate concern about the auto negotiations. Coal operators and unions were negotiating and their positions were “far apart.” On the other hand, the union settlements coming out of the deregulated industries such as airlines were moderate. And nonunion competition was holding down wages in unionized construction. Vice Chair Anthony Solomon felt that employers would be more reluctant than in the past to give big pay increases since it would be harder to pass wage costs into prices than before.

At the August 1984 meeting, fretting about autos continued. Chicago Bank President Silas Keehn said the auto negotiations were the “key.” But he thought that the auto companies might be able to get a 4-6% per annum settlement without a strike and absorb the pay increase through productivity gains. Governor Martha Seger, however, was not sure that productivity advances in autos were sufficient to absorb 4-6% wage gains. New leadership at the UAW was likely to be more militant than the old regime that had approved the earlier concessions of 1982. Other FOMC members wondered whether the anticipated 4-6% would include indexed cost-of-living adjustments (COLAs) or not. However, staff reported that wage numbers generally were coming in below expectations and no acceleration of wage inflation could be detected.

By the end of 1984, however, the auto negotiations seemed to have passed from the FOMC’s consciousness. Oddly, no mention was made about the actual auto settlements that had sparked so much prior anxiety. But there was a general sense that the union contracts of 1984 indicated that wage inflation was not accelerating. Cuts in the key Federal Funds interest rate had already begun as concerns about inflation eased.

Cautious Expansion: 1985-1987

At the February 1985 meeting, staff reported that despite the fact that the economy was operating around the NAIRU (assumed to be about 6.5%), union wage settlements were generally below 4%. This theme continued into May when one member opined that union negotiators were becoming very flexible on workrules as well as wages. Much of the attention of the FOMC for the year, however, turned to the U.S. dollar, which had begun to fall in international exchange markets.

Wage settlements were still moderate, it was noted in October 1985, but a declining dollar would expand exports and possibly cause selected skill shortages. Despite the falling dollar (which also had a direct price-raising effect), the staff reported it had become more optimistic about the inflation outlook. Notably, after 1985, the staff's "Chart Shows" stopped containing graphics based on major union settlements data from the U.S. Bureau of Labor Statistics (BLS).¹⁶ The Fed's staff apparently was becoming less concerned about union wage setting and its macro implications, even if particular FOMC members were not.

By early 1986, there began to be member concerns about the impact of demand on the nonunion sector. Chicago Bank President Keehn reported that union settlements were coming in at 3% with workrule relaxations. Governor Wayne Angell said he could see no signs in wage settlements that the NAIRU had been attained. But he had reports that "hefty" wage increases were coming in financial services, which are largely nonunion.

Keehn's assessment of union settlements became more nuanced by July 1986. Contracts were still coming in at 3% with workrule changes. Some steel companies had been able to eliminate their COLA provisions. The longstanding Caterpillar strike had been settled but the new contract's terms had not yet been disclosed. A Caterpillar competitor, Deere, was seeking a wage freeze and termination of COLA. But negotiations there were likely to be difficult. And Chicago construction workers had gotten a two-year contract with 5% per annum.

Still, the staff expected union settlements to be moderate and reported that pressure by business to hold down job-related health insurance costs was also making progress. Cleveland Bank President Karen Horn reported that business was on balance happy with the current labor situation. Again, there was discussion of labor shortages in nonunion employment. Boston Bank President Frank Morris reported that in the New England area, McDonald's was having problems finding workers even though it was paying above the minimum wage.¹⁷

The matter of relaxed union workrules came up again in September 1986 when Chair Volcker asked about a settlement at Weyerhaeuser and was told that workrules were the key issue. In November 1986, Volcker asked why he kept hearing about workrule relaxations but did not see the results in increased productivity. Philadelphia Bank President Edward Boehne suggested that the changes in rules involved quality improvements rather than productivity improvements. But staff indicated that most of the rule changes were in manufacturing and productivity gains could in fact be seen in data from that sector. In December, staff took note of the growing use of lump-sum bonuses in union settlements as opposed to base wage increases.

At the February 1987 meeting, Keehn was still reporting that union settlements were moderate and continued to contain workrule relaxations. The staff concurred and speculated that “‘wage norms’ in the minds of labor and management have generally been lowered, providing some inertial force toward moderate pay increases.” However, consumer price inflation – which had shown some acceleration – would eventually have an impact on wages “through formal and informal COLAs.”

During the May meeting, the staff in the context of a forecast for 1988 indicated it had moved its estimate of the NAIRU down to around 6%. Boehne, however, noted the dispersion of unemployment rates around the country so that a national average of 6% would mean some areas would be experiencing wage acceleration. Seger questioned the NAIRU concept. Nowadays, she argued, management has “backbone” in labor negotiations; employers would no longer just raise pay and pass the costs into pricing. Aware of import competition, management pushes for wage freezes, productivity gains, and linkage of pay to productivity. Kansas City Bank President Roger Guffey noted that in any event the calendar of union negotiations was light in 1987, except for the auto negotiations. The light union calendar should help hold down costs.

The stock market crash of October 1987 led to a downward revision of staff projections of real growth and inflation for the coming year. Alan Greenspan, the new Fed chair, and the FOMC eased monetary policy in an effort to provide liquidity and avoid recession. Given the uncertain economic outlook, staff reported that pay increases were coming in lower than expected due in part to concerns over job security. Boston Bank President Frank Morris, however, cautioned against over-stimulation that could lead to the loss of the existing “benign wage environment.”

The Expansion Tops Out: 1988-1990

By the February 1988 meeting, the FOMC seemed to feel it had steered clear of recessionary dangers. But Edward Boehne reported that there was still much public talk about recession even though labor markets were very tight and orders were backlogged. In fact, the economy was close to the point, in his view, at which wages would accelerate. Chicago Bank President Silas Keehn agreed that there was beginning to be price inflation; he had heard that price increases were beginning to “stick” in metals and chemicals. But wages in his view were not the cause of that problem since they were “continuing to perform very, very well.”

By March, however, the staff believed that economy was operating at the NAIRU. And Frank Morris again warned against waiting to see if inflation accelerated. Once that process started, he felt, it would be hard to reverse. Chair Greenspan, while admitting that some indicators suggested the economy was on the verge of inflation, said he thought the hypothetical inflation was not yet apparent. Staff reported, however, that its forecast indicated “a need to move the unemployment rate back up if wage pressures are to be held in check.”

The issue of perception vs. empirical evidence again arose at the June 1988 meeting. Greenspan noted that “while the wage data don’t show this, there’s a subliminal sense of changing wage demand pressures.” Robert Parry noted that the California minimum wage was going up and would have ripple effects. Moreover, a lumber strike was underway. FOMC Vice Chair Edward Corrigan noted that there were big union settlements in the public sector of New York State.¹⁸ Although by themselves these settlements have little importance, they were characterized as high profile. Dallas Bank President Robert Boykin, however, reported that there were no pressures on wages in the Southwest. Workers were said to be focused on job security, not wages. That observation was one of the earliest by an FOMC member to foreshadow Greenspan’s later development of a theory about worker fears that inhibited wage increases.¹⁹

Generally, the discussion continued with these discordant views. Atlanta Bank President Robert Forrestal said that while there were not actual wage increases yet, business expected them to creep back into worker expectations. But St. Louis Bank President Thomas Melzer said he had been told that even with the uptick in the Consumer Price Index (CPI), strong wage pressures were not expected by his contacts. In contrast, Minneapolis Bank President Gary Stern reported that he had heard that manufacturers were beginning to have trouble with “aggressive” unions.

Edward Boehne said that while there were fewer COLA clauses in the union sector than in the past, the remaining ones would transmit price pressures directly into wages. Frank Morris postulated that because wages should have grown faster in the past, they would now start to catch up. But Cleveland Bank President W. Lee Hoskins said that manufacturing employers had been burned in the past by wages and inflation and would not allow a repetition. Governor Wayne Angell warned that while the official data didn't show that there was an acceleration in wages and prices, it was "right under the surface."

The debate and anecdotes continued in August 1988. Atlanta Bank President Robert Forrestal continued his theme that unions were worried about job security. Business executives kept anticipating wage pressures that don't actually arise, due to these union concerns. But Richmond Bank President Robert Black said that upward pressures on wages were "becoming increasingly apparent." And the staff noted in its forecast that Congress might raise the federal minimum wage.

In September 1988, Cleveland Bank President W. Lee Hoskins said that while wage demands in manufacturing remained moderate, there was upward pressure on pay in services. The service gains would eventually spill over and then there would be across-the-board pay increases. But in November, Vice Chair Corrigan took note of the fact that there were still wage freezes and cuts occurring in the union sector. Perhaps foreign competition was playing a role. Boston Bank First Vice President Robert Eisenmenger noted in December that while pay was rising, the pressures were not in the union sector. Hoskins indicated that manufacturers could still get needed labor at the wage levels they paid. And Martha Seger noted that unionized construction workers were constrained by nonunion competition; management's bargaining power had thus increased in that sector.

At the February 1989 meeting, San Francisco Bank President Robert Parry indicated there was now definite upward pressure on wages. But Silas Keehn remained unconvinced:

"The common wisdom is that we are going to see some escalation, particularly on the wage side: yet the reports I get from companies are not necessarily consistent with that common wisdom. The labor market continues to tighten. We are continuing to hear comments about shortages of skilled labor. But despite that, I'm surprised by how favorable the contract settlements continue to be -- [increases in] wages and fringe benefits of 3 to 4 percent on an annual basis. And though labor attitudes certainly are hardening, they have at least not yet

begun to evidence themselves in significantly higher settlements. The price side of the picture, I suppose as always, is quite uneven.”

Greenspan, however, had become convinced by this time that wage pressures had appeared in recent data; they were no longer “subliminal” as he had termed them a year before. Possibly, the latest wage numbers were an “aberration,” according to Greenspan. But given low unemployment, such an aberration could not be assumed. Meanwhile, the staff seemed to be hedging on wage inflation. At the March 1988 meeting, the staff announced that the economy had overshot the NAIRU. But, on the other hand, it believed that the consequence of that overshooting would be less severe than other forecasters were projecting. The anecdotes continued. Robert Forrestal noted the phenomenon of Boeing borrowing workers from Lockheed. Vice Chair Corrigan said he had heard that when firms lose workers due to quits, they have to pay 9-10% more to obtain replacements.

In May 1989, Robert Parry noted that Los Angeles teachers had gone on strike after rejecting a 21% wage increase. In addition, given worker shortages in aerospace, the expiring union contracts there would likely be renegotiated with big increases. Cleveland Bank President W. Lee Hoskins took note of substantial wage increases at Bethlehem Steel. Other steel companies were likely to follow. And some parts of manufacturing would follow steel. But Governor Manuel Johnson viewed the big steel settlements as catch up for past concessions.

Greenspan seemed to agree with Johnson; the steel situation was probably a special case. But the teachers’ strike in Los Angeles showed an “aggressive” union attitude due to low unemployment, according to Greenspan. Despite this concern, Greenspan noted surprise during a June 1989 phone call meeting about how moderate wage pressures remained. He began to form a theory about how workers who become fearful about job security act as a wage retardant (an idea we discuss more fully in our final section because FOMC members used it in a context that suggested that workers bargain for their wages, even if nonunion).

We noted earlier that the notion of insecure workers reducing upward pressure on wages had begun to surface during 1987-88. But with the Fed chairman now ruminating about the impact of worker insecurity on wages, the staff followed up Greenspan’s proposition at the July meeting, suggesting that insecurity might be a cause of the lack of wage inflation. By the 1990s, this concept had further developed into what came to be called the “traumatized” worker view.

These themes continued into late summer and fall. In August, Minneapolis Bank President Gary Stern explained the lack of wage pressure as a diversion of growing “labor militancy” toward non-pay issues such as the union shop. In October 1989, Robert Parry forecast (incorrectly) that the Boeing negotiations would not lead to a strike. A settlement at Nynex was reported in November by Boston Bank President Richard Syron. “Sadly,” he noted, the result was less favorable to management than it had admitted.

Rising benefit costs at a Kansas City GM plant were reported by Kansas City Bank President Roger Guffey. There was some discussion of the risk of inflation. But Governor Martha Seger argued that recession would not solve the problem of medical cost inflation and a nursing shortage. At the December 1989 meeting, the staff made a presentation concerning the possibility of achieving complete price stability over a five-year period. In this context, the staff noted that its estimate of the NAIRU had now dropped to 5.5%.

Recession and Initial Recovery: 1990-1992

In early 1990, staff still was not forecasting the recession that was in fact to come later in the year. Inflationary price expectations at the February meeting were thought by staff to be placing upward pressure on wages. St. Louis Bank President Thomas Melzer said he was still hearing reports of labor shortages and upward pressure on wages. In May, Thomas Melzer reported that some low wage firms were complaining that an increase in the federal minimum wage was causing a “compaction” of the pay structure. Martha Seger noted in July 1990 that there would be a round of negotiations in autos later in the year. Staff in August again indicated concerns that unemployment was below the NAIRU and there was not sufficient slack in the labor market to reverse a gradual uptick in wage inflation.

However, the widening Iraq-Kuwait crisis quickly became the center of discussion for the remainder of 1990. Reports accumulated of a weakening economy and a falling dollar. By November, staff was predicting an economic downturn. The softening economy and a drop in oil prices after an initial spike led staff to “greater optimism about wage pressures.”

Early 1991 brought with it the (first) Gulf War and increased uncertainty about the direction of the real economy.²⁰ A spike in oil prices was reported to have caused a labor shortage in the petroleum sector in Louisiana. Despite the risk of recession (that in retrospect had already begun), St. Louis Bank President Thomas Melzer and others argued that the focus

should be on reducing inflation. Generally, however, the sluggish economy diminished FOMC concerns about wage issues and in 1991, most discussion of inflation was explicitly in terms of prices, not wages. And apart from the Gulf War, other external issues such as the collapse of the Soviet Union attracted FOMC attention.

Chicago Bank President Silas Keehn did report in July 1991 that “labor contracts continue to be favorable.” And the staff expressed worry about increasing employer expenses for health insurance, unemployment insurance, and workers’ compensation insurance. In August, Keehn reported that there were likely to be difficult labor negotiations at Caterpillar and Deere. “They can’t even agree on the sites where they’re going to hold the negotiations,” he noted. And in December, after a strike had begun, Keehn reported that while “the wage patterns continue to be favorable, ...there’s a growing level of anxiety about the Caterpillar strike, which at this point looks very, very difficult.”

At the first regularly scheduled meeting of 1992 in February, Silas Keehn reported a positive inflation outlook. Wage increases in manufacturing were modest and could be covered by productivity growth. But the Caterpillar strike was very bitter and the union had “an enormous strike fund.” The United Auto Workers had settled a contract with Deere and wanted Caterpillar to follow that pattern. Caterpillar’s management, however, argued it was in a different industry and would not accept the Deere package. According to Keehn, Deere had a bad strike in prior negotiations and had decided it needed to settle this time. Staff reported that corporate restructurings had led to white-collar layoffs as well as blue. And newly-appointed Governor Lawrence Lindsey complained that recent federal requirements for advance notice of mass layoffs were undermining confidence. Announcements of such layoffs were leading to a pessimistic psychology. These comments, it should be noted, tended to reinforce the evolving Greenspan model - noted earlier - of traumatized workers who don’t demand pay increases.

During the March 1992 meeting, Silas Keehn reported that union settlements in the paper industry were coming in with modest wage increases in very long-term contracts. The ongoing Caterpillar strike, however, was very bitter and each party adamantly rejected the other’s position. Following (or not following) the Deere pattern remained the sticking point. In May, Keehn repeated his story about moderate paper settlements. And he reported that “the Caterpillar strike just went ‘poof.’ When the company threatened and then began to bring in replacement workers, the union attitude just collapsed. They have not, of course, settled the

contract yet, but they're back at work. This won't necessarily set a pattern for the UAW negotiations with the auto companies this fall, but certainly it's going to have an effect on the tone as they go into those discussions.”

Despite these references to union sector developments, the discussion in 1992 was more focused on whether the real economy was recovering, how fast if so, and whether there was a danger the recovery might stall. Inflation was discussed in the context of concerns about whether the economic slack the recession had engendered had reduced inflationary expectations. Vice Chair Corrigan characterized the process of fighting inflation as very costly and slow at the May meeting. And at the June-July meeting, the staff’s presentation suggested they had edged up their estimate of the NAIRU to 5.75%. Nonetheless, because staff estimated continued slackness, wage inflation was expected to slow. The staff report cited evidence from the early 1960s – also a period of slack – that such a wage projection was realistic.

The economic picture remained uncertain and soft in the fall. Staff lowered its real output projections in October. But by November 1992, FOMC members began to report a more optimistic outlook. Foreshadowing a return to a tight labor market, Minneapolis Bank president Gary Stern noted that there were labor shortages in the Minneapolis area and that “help wanted signs are popping up everywhere.” Cleveland Bank president Jerry Jordan reported some areas of labor shortage in his district, too. Still, small businesses were raising pay only 2-3%, although the banking industry was in the 4-5% range.

Staff speculated on what the new Clinton administration might do in the area of fiscal stimulus and what that might mean for inflation: “...(I)t doesn't take a stretch of the imagination to envision a combination of fiscal impetus and revived animal spirits that might make it necessary to tighten money market conditions sooner or more than we've anticipated, to head off an eventual re-acceleration of wages and prices.” And Governor Lawrence Lindsey fretted about costs of possible social legislation that would be added by the new administration to employer expenses.

Monetary Policy During 1981-1992: A Summary

During the Reagan-Bush years, the FOMC and the two Fed chairs never came up with an elaborated theory linking union developments to the fall of the NAIRU. Staff estimates of the NAIRU were empirically based and tended to be revised down as the unemployment rate fell.

Union settlements were of interest as indicators of inflationary trends and as part of the old wage-push view of unions as economy-wide pattern setters. Volcker was taken with the idea that defeat of the PATCO strike had played an important role in disinflation. As time passed, and as the Fed moved into the Greenspan era, there was more discussion of generalized "wage pressures" - sometimes in the context of Greenspan's traumatized workers hypothesis – and less about union negotiations. Union-related anecdotes were more likely to be put forward by FOMC members from districts where unions were still prominent. Labor shortages in the late 1980s were referenced. But the implication that ongoing shortages were consistent with employers holding down wages was not voiced. Thus, the implication for the NAIRU of a shift in bargaining power from employees to employers was not an explicit topic of discussion.

Reagan-Bush (Sr.) Administration Policy Toward Unions

The Reagan administration had no particular liking for organized labor even apart from any macro effect unions might have. Unions in the U.S. tend to be linked to the Democratic Party. Only two unions of significance officially supported Reagan in the 1980 election: the Teamsters (fearing trucking deregulation and potential legal problems of the union's leadership) and – ironically - PATCO, the Professional Air Traffic Controllers Organization (hoping for support in its upcoming negotiations with the Federal Aviation Administration).

PATCO and its abortive strike figures large in popular accounts of Reagan policy towards unions; some have even found macro significance in the PATCO affair. But despite a general laissez-faire labor-relations philosophy, the Reagan administration could not take a hands-off approach with regard to the PATCO strike of August 1981. As federal employees, air traffic controllers were forbidden to strike and, for that matter, even to bargain over wages. Yet through job actions short of formal strikes in the past, they had pursued a de facto wage bargaining agenda.²¹

Press accounts after the fact depicted the PATCO strike as the cause of subsequent union concessions and union membership decline. The argument was that if it was all right for the President to take a hard line with a federal union, it was OK for private employers to do the same with their unions. When combined with a wage-push approach to inflation, that view is only a step away from the notion that defeat of PATCO was an anti-inflation macro policy. However, it

is difficult to demonstrate this domino theory of union decline empirically. (Farber and Western 2004)

Reagan-era economic policy makers have described the PATCO affair as a matter of dealing with strike disruption and not part of a macroeconomic strategy of reducing inflation. As Reagan insider William Niskanen noted, “The major lesson of the controllers’ strike was that the ... administration would not tolerate an illegal strike by federal employees, not that it would intervene in other labor disputes.” (Niskanen 1988, p. 194) And even apart from this assertion, there is good reason to believe that Reagan’s PATCO actions were not part of an anti-inflation strategy.

Planning for a possible PATCO strike had actually begun under Carter. A postal strike was also threatened at around the same time and softness in dealing with PATCO might well have led to an even more disruptive postal work stoppage. In any event, PATCO had never sought a cooperative relationship with other unions, including those in the airline industry, and was thus vulnerable in a confrontation with the federal government.²²

Of course, it cannot be said that no one in the Reagan administration saw any macro significance in union settlements. And the language used in the 1982 Economic Report of the President about the inflation process contained the implicit bargaining notion that workers “seek” higher wages when they anticipate inflation. The inflation process depended in part on what workers would “accept.” Words such as “seek,” “demand,” and “accept” are suggestive of a collective bargaining environment and they persisted in official and academic discussions throughout the period covered in this paper. Because union contracts typically run three years and because contracts set extended patterns and contain COLA clauses, it would take a long time to disinflate the wage process, according to the official 1982 Report. (U.S. President 1982, pp. 55, 58-59)

Council of Economic Advisors (CEA) Chair Murray Weidenbaum did track trends in union settlements and reported on them internally.²³ Neither Weidenbaum nor Fed Chair Volcker had been enamored with the Nixon administration’s wage-price controls. But both had played some role in that program’s design. (Neikirk 1987, pp. 146-147) Several years after the fact, Weidenbaum expressed the view that the PATCO episode had been “one of the most important labor events” of the 1980s. (Weidenbaum 1988, p. 7) But his view was in line with Niskanen's (cited earlier). The importance, Weidenbaum said, was that the PATCO episode

showed that the President would not become involved in private-sector disputes; involvement would be limited to those within the federal government. Reagan administration officials would certainly not force private employers to settle disruptive strikes at excessive wages.²⁴ Thus, it does seem to be the case that Reagan administration policy on union wage setting was limited to special instances and then based on micro rationales.²⁵

During the subsequent Bush (Sr.) administration, there was also no attempt to conduct anti-inflation policy through direct intervention in union wage setting.²⁶ Michael Boskin, chair of the CEA under Bush (Sr.), did not even mention PATCO or administration policy toward unions in his review of the Reagan years. (Boskin 1989) The political climate remained unfriendly toward unions, notably in the controversy over requiring “Beck” notices. (These regulations for federal contractors required notification of workers of their rights under a Supreme Court decision - CWA vs. Beck, 487 U.S. 735 [1988] - not to belong to a union.) However, as under Reagan, the impetus for such actions stemmed more from the tendency for unions to support Democrats rather than from macroeconomic considerations. When the Clinton administration came into office, Beck requirements were eliminated until Bush (Jr.) took steps to revive them.

All that being said, there were those within the Reagan-Bush (Sr.) administrations who – at least after the fact – attributed macro/anti-inflation significance to PATCO. Lawrence Lindsey, a staff economist at the CEA under Reagan and an assistant to the President for policy development under Bush (Sr.), saw the firing of the air traffic controllers as having established “credibility” in the fight against inflation. According to Lindsey, after PATCO “wage psychology changed virtually overnight, and inflationary pressures rapidly abated.” (Lindsey 1999, pp. 174-175) This view is the old unions-as-pattern-setters/wage-push approach. While Lindsey may not have been a key official within the Reagan-Bush administrations, he did become a member of the Federal Reserve Board of Governors in late 1991, and served in the Bush (Jr.) administration until asked to resign in late 2002. As noted earlier, Lindsey’s view was apparently shared by Fed chairman Volcker. And as we will see below, Fed chairman Greenspan apparently also held that view of the PATCO affair as late as 1997.

Monetary Policy in the Clinton Era

Like their predecessors, new Clinton appointees to the Fed's Board of Governors did not evolve a clear theory regarding the impact of wage determination and union developments on the macro economy. The new Clinton appointees subsequently reported themselves to have been pragmatic with regard to how far down unemployment could be pushed before the NAIRU barrier would be encountered. (Blinder and Yellen 2001) Thus, although the lowest unemployment level the economy was allowed to achieve in the expansion of the 1980s was 5.0% during 1989, the rate was permitted to fall as low as 3.9% during 2000. Monetarism in the sense of a focus on targeting the money supply was dropped under Greenspan. But notions of worker bargaining for wages persisted, even in a largely nonunion context.

The FOMC During the Early Clinton Years

The composition of the FOMC is altered only slowly over time as positions on the Board of Governors become vacant and as regional bank presidents change. Thus, it would be surprising if an abrupt change occurred in 1993 when the Clinton administration took office. However, some Clinton appointees did inject elements of recent academic theorizing that arose from the new economics of personnel into discussions of wage setting.

During the late Bush (Sr.) and early Clinton period, there was much public discussion of a "jobless recovery." In fact, at the first regular FOMC meeting in February 1993, the staff raised its estimate of the NAIRU back to 6%, assuming that downsizing and corporate restructuring would raise the level until the labor market adapted. Then the NAIRU would fall back to 5.75%.

Chairman Greenspan did note the decline in unionization at the March meeting. As he put it, *"I think everything we can see is exceptionally well behaved in the crucial area of labor costs, which on a consolidated basis obviously comprise a great deal of our underlying cost structure. There is no ambiguity here; wage rates are clearly under control. And we are not yet seeing, despite our saying that we might, any sign of a significant pickup in contract wage pressures on the union side, which incidentally is now a very small part of the economy – and it's an even smaller part if you take out the government workers that have unions. The major area of wages in our system is basically outside the union area..."*

Despite Greenspan's observation on union erosion, President Silas Keehn of Chicago continued to draw significance from union wage settlements. Steel negotiations were continuing

to occur, but the focus was on raising productivity by relaxing workrules in exchange for job security and pension improvements. "The steel industry hopes they will come out of this [negotiation] without an inflationary settlement," he reported. And at the July 1993 meeting, he updated the Committee with a report that steel had achieved a modest contract from the management viewpoint that was "far better than what they had hoped for..." With steel settled "on a non-inflationary basis, the bargaining focus will shift to the auto negotiations... that will certainly be a key item on the wage front."

While the news pointed to lack of wage pressures, the FOMC continued to fret about the possibility that such pressures were just around the corner. A view seemed to prevail that businesses were currently restraining hiring but would eventually be forced to enter the labor market for new recruits. Atlanta president Robert Forrester reported at the August 1993 meeting that his staff believed "that there's going to come a point when business will simply not be able to continue with the present level of temporary employees and overtime" as a substitute for regular hires. In addition, at the September meeting, worries continued about the possible cost of employer mandates - especially the proposed Clinton health plan (which eventually was killed in Congress). There were also fears that underfunded pension plans would require new and costly employer contributions.

Despite the lack of general wage pressure, Minneapolis president Gary Stern reported - both at the February 1993 and the September meetings - that there were labor shortages in his region. But hiring difficulty "does not seem yet to have translated into demonstrable wage pressures." By the end of the year, the focus at FOMC meetings had turned to Mexican peso problems and the new North American Free Trade Area (NAFTA) agreement. Cleveland bank president Jerry Jordan noted that organized labor vigorously opposed NAFTA in his area but once it passed "labor organizations just simply have not been a factor."

Staff and FOMC analysis of the inflation outlook in 1994 was complicated by a switch in methodology at the Bureau of Labor Statistics regarding collection of unemployment data. The staff thought the impact of the new methodology was to raise the measured NAIRU, but how much was unclear. A jump of 0.2 percentage points to 6.2% was seen as likely. Moreover, a tightening of the labor market was being reported. Mr. Keehn reported in February that while some firms were continuing the no-new-hires approach, others were being forced to add employees. But at the same time, in the context of a discussion of the ability of households to

take on more debt for spending, Governor Lawrence Lindsey noted that labor's share of personal income was declining. Vice Chair William McDonough (New York) thought nonetheless that wage pressures would be showing up "soon." And by the March 1994 meeting, some members reported hearing of actual wage pressures, not just potential.

Still, the news was largely anecdotal. Stern noted that in the early 1980s, there was a structural change in the relationship of labor market tightness to wage inflation (but advanced no particular theory of the nature or causes of the structural shift). So one could not be sure that current reports of tightness would signal wage inflation. And Lindsey opined that the NAIRU might well be 5.5%, substantially below the staff's 6.2%. He continued to argue that government mandates might be pushing up labor costs rather than excess demand for labor. The staff meanwhile remained concerned about the interpretation of the new unemployment series over the summer. By some estimates, staff noted, the actual unemployment rate might already be below the NAIRU. In any event, the staff research director reported in August that unemployment was "in the ballpark of the natural rate." But new Clinton appointee, Governor Janet Yellen, argued that wages were quiescent and unemployment could come down by a few tenths more without causing inflation. Still, in the latter part of 1994, the Fed began pushing up interest rates to forestall an economic overheating.

September 1994 saw the occurrence of a major league baseball strike, a high-profile event even though few employees were directly involved. Clinton appointee, Governor Alan Blinder, thought the strike might have an adverse effect on forthcoming employment numbers through indirect effects on associated industries. Governor John Laware fretted, however, at the December 1994 meeting that 1995 would see "higher wage demands when contract negotiations" began. But Greenspan reported that he had talked with "some labor leaders" who told him that workers were reluctant to change jobs because of portability problems of health insurance and pensions. They wanted "just to stick with what they had," an attitude that "is a major factor in holding wage increases to a very sluggish pace..."

Although the Mexican peso crisis sparked a telephone conference call meeting in early January 1995, by the end of the month, debate returned to the NAIRU estimate. The staff indicated that 6% was its best point estimate, but under questioning suggested that the possible range of the estimate was 5.5-6.5%. Jordan pointed out that even with that range, the current unemployment rate was at the low end. Governor Yellen seemed to back off from her earlier

statement that the NAIRU was below 6%. Possibly the rate was lower, but she couldn't "endorse" that position. By March she was back to suggesting that if the wage inflation numbers remained low, the possibility of a NAIRU below 6% had to be taken seriously.

And, explanations for the falling NAIRU continued to be offered: productivity, technology, job insecurity. Chicago Bank president Michael Moskow, a former academic labor economist, reported at the September 1995 meeting that *"union leaders... emphasize the insecurity factor... in explaining wage increases. They emphasize the fact that corporate restructurings have continued even though the economy has recovered, so there is constant concern about losing one's job even though the economy is doing well."*

Governor Lindsey reiterated that labor's share of personal income was declining. *"It is not hard to understand how we can get both lack of inflation and an improvement in the unemployment rate when in fact wages are being suppressed."* The downside, according to Lindsey was that repressed wages would lower consumption and slow the economy below forecast levels. His position was an interesting throwback to thinking popular in the Great Depression and earlier that depicted wage repression as a consumption-limiting cause of the economic slump. We will return to that Depression-era view later.

Bank president Robert Parry (San Francisco) for the first time added stock options to the list of explanations for low wage inflation. High-tech firms – prominent in his district - were using such options, instead of wages, to attract workers. But lack of worker bargaining power, *à la* Lindsey, was repeated by Governor Susan Phillips: *"Perhaps at some point workers will be able to exert enough influence to move wages and real income to higher levels, but we don't appear to be at that point yet."*

In sectors where there remained powerful unions, large wage settlements might still occur. Thus, at the December 1995 meeting, a Boeing union wage settlement was described as "surprisingly rich" by St. Louis bank president Thomas Melzer. Yet Governor Yellen continued to couch the issue of general wage trends in terms of "worker *demands* for wage increases." (Italics added.) And Chairman Greenspan elaborated on his job insecurity theory at the December session by pointing to a proliferation of long-duration union agreements of 5 or 6 years, something that would not be relevant for the bulk of the workforce. He also provided a long discourse on advances in computer technology as an explanation for a (temporary) decline in the NAIRU. In any event, in the latter half of 1995, the Fed reversed course on its prior policy

of pushing up interest rates, apparently convinced that it had successfully prevented an overheating of the economy.

By early 1996, Greenspan was actually asking the staff to investigate whether too little inflation might be a bad thing. Perhaps, because of nominal wage downward rigidity, a little inflation was needed for "greasing the wheels of wage bargaining," as he put it in January. Yellen pointed to Yale economist Truman Bewley and his documentation of such nominal wage rigidity.²⁷ Meanwhile, the staff presented a chart showing a long-term projection of 5.6% unemployment, suggesting a lowering of the NAIRU estimate to that level.

In March 1996, Michael Moskow pointed to a local GM strike but generally supported the traumatized worker approach. But the staff research director thought that the strike and settlement might be a sign of growing worker demands for pay increases. Stern reported "a somewhat more aggressive attitude on the part of labor." But Moskow provided an example of a steel negotiation in which union demands were moderate. Job security, he predicted, would still be emphasized in upcoming union negotiations. Nevertheless, Kansas City bank president Thomas Hoenig reported that union business agents in construction reported very high demand for workers and that "their ability to negotiate favorable wage settlements has improved dramatically."

Melzer reported that a strike at a major St. Louis employer was imminent and noted that there would be auto negotiations later in the year. Stern felt that there had not been a "pronounced change" in the climate but that "labor is getting a little more aggressive." Jerry Jordan said his business contacts predicted a strike at GM in the fall. Greenspan returned to the theme that union workers represented only a small part of the labor force so what they negotiated was not especially significant.

Nonetheless, in July 1996, Moskow noted rising construction union wage settlements but - echoing Greenspan's earlier comments - indicated that workers were apparently less concerned about inflation than in the past. Union contracts now were longer in duration, he reported. Still, the tight labor market was favorable to labor. Melzer reported that in the case of a McDonnell-Douglas strike, Boeing had recruited away some striking machinists. Stern again noted that he had heard from a labor leader that job insecurity prevailed. And Yellen picked up the story of such nervousness having "a negative impact on the bargaining power of workers." (Italics added.) A decline in the NAIRU was now more likely, Yellen thought, although one could not

be sure. And she repeated an earlier theme; recent academic work had suggested that a low rate of inflation – as opposed to price stability - would "grease the wheels" due to resistance to nominal wage cuts.

By late August, Greenspan was concerned about a possible auto strike. Boston bank president Cathy Minehan wondered about the impact of a strike at a time when labor unions were declining and people are concerned about whether "Wall Street, shareholders, and management are enriching themselves at the expense of workers' standards of living." Maybe the strike would have some spillover impact on "nonunion relationships." Minehan seemed to think that a strike could have an indirect inflationary effect, regardless of how it turned out, through some uncertain mechanism. But Greenspan took up the Volcker view. He countered that union defeats, such as the air traffic controllers strike "which was quashed, did more to repress union power than almost anything else in the 20th century." Staff research director Michael Prell observed that it would be important to see if the auto strike led to a pattern agreement. Moskow noted that the United Auto Workers' target company might not be GM, even though it was widely thought that GM needed concessions. GM might then be stuck with an expensive pattern set by its flusher rivals.

In September 1996, discussion of the auto situation continued. Ford, as it turned out, was the target company and had settled without a strike. Whether a strike would occur at GM was uncertain. Yellen thought that the auto negotiations were tilted towards aging unionized workers who were trying to protect their jobs and benefits. In any event, by the November meeting, the auto negotiations seem to have been forgotten and the focus again was on the likely decline of the NAIRU – now explicitly set by the staff at 5.6% - and on widespread labor shortages. Such shortages, it might be noted, are not consistent with traumatized workers. Dallas Bank president Robert McTeer reported that "people are going into 7-Elevens and getting a job offer when they are not even looking for work." Nonetheless, Yellen expressed concern that the current bright outlook could degenerate into stagflation.

We note that, during the period of Clinton's first term, the FOMC members sometimes put the traumatized worker theory in terms of union bargaining and sometimes in terms of individual nonunion worker bargaining. This tendency suggests that there was not a clear-cut distinction being made between a union and a nonunion mechanism; it all was blended into a non-specific bargaining trade off. We will return to this point below.

The FOMC During Clinton's Second Term

Because FOMC transcripts are not available for the period after 1998, the Committee's deliberations cannot be monitored in detail after that year. We do know from prior transcripts that such deliberations - particularly in the labor-market area - had been influenced by staff presentations and the anecdotal evidence compiled by the regional banks in the Beige Books. Although we don't have access to post-1998 staff presentations at this writing, we do know that the staff's economic model - although revised in 1997 - continued to embody a conventional NAIRU assumption. The NAIRU was determined by a harmonized conjunction of product market price markups over costs and real wage determination in the labor market.

A staff description of the model depicted this harmonization using a graphic illustration along the lines found in earlier models developed by others. The approach represented by the graphic could be used to relate a falling NAIRU to de-unionization, i.e., decreased union bargaining power. (Mitchell and Zaidi 1992; Mitchell 1986) It is not known, however, whether the staff actually used that particular interpretation at any FOMC meetings in the post-1998 period. But it seems unlikely that the linkage was explicitly made.

The 1997 FOMC transcripts indicate there remained concern about inflation among FOMC members as the economy continued to expand. But there was ongoing discussion of whether the NAIRU had fallen. Comments at the February meeting of the FOMC suggest this theme. Reports of labor shortages were discussed. Chairman Greenspan continued to articulate his theory of traumatized workers who retard wage inflation. However, the staff - while aware of what were termed "new age" approaches to the labor market and the NAIRU - indicated that it was sticking to more traditional forecasting approaches, although with increased uncertainty.

Greenspan was also developing another pet theory of NAIRU decline related to new technology that was raising productivity, perhaps in ways that were not well measured. (Woodward 2000, pp. 168-169) Of course, simple arithmetic demonstrates that unit labor costs will rise more slowly if productivity growth accelerates and wage trends are unaltered. But the question then becomes why nominal wages don't begin to rise more rapidly so that the added productivity translates into a real wage enhancement with no particular anti-inflation effect. A bargaining model in which union negotiators are slow to appreciate the productivity gain, or in which long-term contracts retard nominal wage growth for a time, would produce a reduced

NAIRU, at least for an interval. But it is not clear that a productivity acceleration would have that effect in a textbook atomistic nonunion labor market.

To obtain such an effect in the nonunion context, some wage-retarding mechanism has to be postulated. Perhaps the fact that pay is often set in reference to periodic surveys in which, effectively, nonunion employers find out what other employers are doing could produce contract-like lags. But note that an information system in which employers emulate other employers opens the door to a mechanism for tacit – or even explicit - collusion in pay determination.

In any event, difficult wage negotiations were anticipated in the (union) construction industry in 1997 by Bank President Jordan (Cleveland). However, in keeping with the times, there was also discussion of large bonuses on Wall Street and how these would figure in the calculation of the Employment Cost Index. Later in the year, the FOMC became preoccupied with the Asian financial crisis and what to do about an emerging stock market bubble.²⁸

Generally, and undoubtedly because of the erosion of the union sector, much of the anecdotal labor-market evidence discussed in 1997 concerned nonunion employment and the reaction of nonunion employers to labor shortages. A significant exception was a Teamsters strike against United Parcel Service (UPS), discussed at the August meeting. The UPS episode is startling because it led to a revival of traditional wage-push discussion.

Bank President McTeer of Dallas – not a bastion of union activity - thought the UPS settlement had done *"a good deal of damage in the past couple of weeks. The settlement may go a long way toward undermining the wage flexibility that we started to get in labor markets with the air traffic controllers' strike back in the early 1980s."*²⁹ Similar sentiments were voiced by Chairman Greenspan: *"The air traffic controllers' confrontation with President Reagan set in motion a fundamental change in policy for this country more than 15 years ago. It is conceivable that we will look back at the UPS strike and say that it, too, signaled a significant change."* And at the November 1997 meeting, Jordan reported that *"as the unions view developments, business earnings have been so good because the benefits of increased productivity and efficiency have all gone to owners and not to workers, so now it is the workers' turn."*

In 1998, a lack of wage-change acceleration in union contracts was reported, with low price inflation and international competition seen as the cause. There were reports of increased strikes or strike threats. But a strike ending in a plant closure and layoffs - apparently in the auto

parts sector - was reported at one location. Another strike in the aluminum industry was reported to have gone on for an extended period without resolution. Thus, it seems likely that FOMC members would have read these reports as indicating continued union weakness despite labor shortages.

However, in nonunion industries - such as financial services - there were reports that "the employee is in the driver's seat." Yet wage pressures were often described as "mild" or "moderate," although some "pick up" was noted. In short, it was not clear what was meant by workers being "in the driver's seat." One-time signing bonuses were cited as a recruitment tool, although it is not obvious that a worker in the driver's seat wouldn't prefer a "permanent" higher pay level rather than a one-shot bonus. Persistent labor shortages – and the use by employers of devices other than wage increases in response – are more suggestive of workers in the passenger seat and employers doing the driving.

In 1999, we have only the Beige Books as indirect evidence of what the FOMC was discussing. The FOMC began raising the Federal Funds interest rate again to avert an overheating. Union wage increases were described as holding steady in some cases or edging upward. To the extent that NAIRU concerns were driving the interest rate decisions, the fact that the unemployment rate was holding well below 4.5% undoubtedly played a role. Significant upward pressure on employer health insurance costs was reported. Some upward movement in union wage settlements in construction was noted. But the job insecurity theme was repeated for unionized steel workers. Strikes were noted at several points, but in the context of production disruption rather than wage patterns. And in 2000, when the Federal Funds rate was pushed to an expansion high of 6.5%, the reports of some edging up of union settlements continued, but ongoing union worker worries about job security were also noted.

Health care costs were depicted as being of concern to union leaders, but more general union attempts to protect against inflation through COLA clauses were not occurring. Public-sector union wage gains were outpacing those under private contracts, according to one report. Due to rising asset values in the stock market, unions were reported as able to enhance pension benefits in amply-funded plans.

From the limited available evidence, it appears that by the end of the 1990s, union-sector developments were not often cited at FOMC meetings. When they were, the citation was more likely to be a strike-related production impact rather than one suggesting a leading indicator of

wage pressure (although the latter interpretation was still sometimes made). Labor costs more generally, in contrast, remained a concern. But the FOMC and staff struggled to provide an explanation of why labor shortages did not provoke a major acceleration in wage inflation in the context of a largely-nonunion labor market.

The NAIRU concept remained in place in staff thinking. But the theoretical concept by itself did not provide guidance as to its actual empirical level or its determinants. It is likely that the FOMC staff further scaled down estimates of what unemployment rate was compatible with non-accelerating inflation, based on pragmatic experience in the 1990s.

Clinton Administration Views

Some indication of the thinking of Clinton administration economists on the NAIRU issue can be found in the annual Economic Reports of the President. It might be expected that there would be similarity of thinking among the professional staff of the Council of Economic Advisors and the FOMC. Staff members were likely to come from the same set of graduate schools and to read the same macro literature. They may have conferred with one another informally. Moreover, there was some crossover between members of the CEA and FOMC; Janet Yellen moved between the two institutions.

Like that of the FOMC staff, analysis at the President's Council of Economic Advisors sought to determine whether the NAIRU was changing. And like the FOMC staff, the CEA in its February 1994 Report, gave some credibility to the notion that corporate restructuring of the early 1990s might be raising the NAIRU (pp. 109-113). But the CEA was sure the actual unemployment rate was above the NAIRU so that "wage-push inflation is unlikely to be a factor constraining economic growth in the near future."

Implicit in this view, however, was the notion that workers would have the ability at some point to push up wages. Absent strong and widespread unionization, it is not clear how that pushing might occur. Indeed, the February 1995 Report acknowledged union decline as a source for some of the increase in wage inequality since the 1970s (p. 182). And in the February 1996 Report, the CEA suggested that the NAIRU had in fact fallen to 5.5%-5.7% and that declining unionization might be one cause – along with worker concerns about job security (p. 53). Lower inflation might itself reduce the NAIRU as institutions adapt, according to the CEA. Among the adaptations might be a decline in use of COLA clauses (p. 55).

In the February 1997 Report, the Clinton CEA provided an extended discussion of the NAIRU concept. It continued the union-like language: the NAIRU would depend on “workers’ real wage expectations” which would be expressed as “workers’ demands.” (pp. 45-50). The CEA tilted toward “cautiously expansionary policies,” despite the risks that the unemployment rate might fall below the NAIRU. It picked up on the academic research – discussed also by the FOMC – that a zero inflation rate might be costly because of downward nominal wage rigidity. By February 1998, the CEA’s estimate of the NAIRU was down to 5.4%, i.e., 0.5 percentage points above the average actual unemployment rate for the prior year. Cited again as possible factors in the NAIRU’s decline were decreased unionization and worker insecurity, so that “workers may be relatively unwilling to press for the wage gains they could normally command...” (pp. 57-63; italics added).

Still a further decline in the NAIRU assumption appeared in the February 1999 Report, in the form of a projection table and accompanying text showing a long-term projection with unemployment steady at 5.3% (p. 97). The economy then was operating below the NAIRU, but the official NAIRU estimate was still edging down. Curiously, in another section of the 1999 Report, the CEA sought to debunk the notion of the death of the traditional employment relation by pointing to reduced job displacement (p. 126). Such a reduction would not accord with the traumatized worker theory of the falling NAIRU, cited in earlier CEA Reports. However, the text of that section made no attempt at reconciliation.

By the February 2000 Report, the projection table cut the NAIRU down to 5.2% (pp. 87, 92). There was more discussion of the possible factors behind the decline: use of temps, productivity gains, the Internet. De-unionization was not mentioned. The final CEA Report of the Clinton administration, issued in January 2001, repeated the table, now with a long-term NAIRU of 5.1%. The lack of inflation in the 1990s at unemployment rates below that level was attributed to a “productivity surprise” that would eventually wear off (pp. 71-74). However, NAIRU estimates under Bush (Jr.) remained in the 5% range, suggesting continuity on that issue even beyond the Clinton years.³⁰

Possible Mechanisms Linking Union Settlements and Labor Market Activity to Inflation and the Declining NAIRU

The arguments that arise explicitly and implicitly in the Fed transcripts – that union settlements continue to have macroeconomic significance, and that traumatized workers or productivity shocks somehow altered the NAIRU – seem to violate conventional wisdom about the role of unions in the contemporary economy and about the functioning of nonunion labor markets. What are the possible interpretations of these perceptions on the part of key macro policymakers? To gain insight on those perceptions, we spoke informally to individuals who served on the FOMC. Below we suggest some interpretations but stress that the views expressed are those of the authors.

(1) Patterns from the Union Sector to the Non-Union Sector

It is possible that union settlements continued to set patterns in a significant manner in the nonunion sector and that notions of patterns led to a seemingly disproportionate emphasis on the union sector in policy discussions. There is an historical conventional wisdom that union settlements had large “spillover” effects to the nonunion sector during the height of the “New Deal Industrial Relations System” in the 1950s and 1960s. But it is likely that those spillovers have weakened (and perhaps even reversed) in recent years (Kochan, Katz, and McKersie 1986).

Evidence from the 1990s on information about union settlements indicates a remarkable lack of awareness of the terms of “key” settlements, even within the union sector (Erickson and Mitchell 1995). By the mid-1990s, the U.S. Bureau of Labor Statistics dropped its regular reports on major union settlements. The institutional literature on how wages are determined provides a set of possible mechanisms by which union settlements might still exert an influence on the nonunion sector, e.g., through specialized wage surveys. But few would deny that both the structural and psychological links from “key” union settlements to nonunion wage setting have weakened over the past few decades.

At times, emphasis at the Fed seemed to hark back to the old wage-push days, when union settlements set the pattern for a much larger portion of the overall economy than was the case by the late 1980s and the 1990s. Such talk did decline over time and was concentrated among FOMC members from areas where unions were still significant. But the general discussion of the UPS strike in 1997 suggests that wage-push thinking was not dead, even at that late date.

(2) Individual Bargaining and the “Traumatized” Worker

Greenspan's traumatized worker theory has an intuitive appeal: that individual workers, concerned about future job security, might be less willing to seek wage and salary increases in times of rising uncertainty.³¹ But, what type of nonunion wage-setting model would produce this result? The simple model of perfect competition has workers paid at their marginal revenue product, so a traumatized worker model must deviate from that approach.

Of course, a literature has developed on individual employee "bargaining" (e.g., Gibbons and Waldman 1999). But this view largely involves uncertainty about workers' productivity, unobserved risk premiums, and other factors that seem remote from the "rent sharing" models of union bargaining; the assumption is that absent something like a compensating differential for risk or unpleasantness, rents are captured by firms in a nonunion labor market. Less common are models where individual workers sacrifice wage increases for job security.

There is little evidence that nonunion employers were offering workers an explicit menu of increased job security for less pay in the 1990s. The 1990s were a period in which popular accounts of the end of the traditional job were common and employees were being told to manage their own careers. And, the traumatized worker theory does not seem to be consistent with the labor shortages and job-hopping characteristic of the late 1990s.

An alternative model that was advanced within the Fed was that of efficiency wage premiums (Shapiro and Stiglitz 1984; Katz 1986) being altered by workers' nervousness. The efficiency wage story is that workers are more productive or are less likely to quit if they are paid above-market wages. Perhaps a traumatized worker would require less of a premium to work hard and stay on the job. We'll leave it to the reader as to whether this constitutes a credible general explanation for the slow wage growth and declining NAIRU of the 1990s.³²

Basically, it is a matter of degree. Union wage premiums have commonly been estimated as rather large. But is it likely that the rents (or efficiency premiums) that might be available to the typical nonunion workers would be of the magnitude available to unionized longshore or auto workers? Is it likely that nonunion rents would have more than transitory effects on macro-level wage outcomes?

Workers might have been made insecure by the stories in the popular media about the end of the career job and the downsizing of previously-secure middle management employees. (New York Times 1996) Reportedly, FOMC staff looked for survey evidence of worker nervousness. But survey evidence is not especially supportive of a high level of trauma, at least in terms of

perceptions of opportunities in the outside labor market. Figure 2 shows responses from a Conference Board survey in which respondents are asked to characterize labor market conditions. The proportions who feel jobs are either "plentiful" or are "hard-to-get" move in expected relationships with the business cycle.³³ But except for the recession of the early 1990s, respondents were not especially pessimistic about job prospects as compared to the "stagflation" era of the 1970s. Indeed, if anything they were more optimistic.

Figure 2 about here

In short, the traumatized worker theory seemed to be based on an implicit bargaining model since the nervousness of workers in an atomized nonunion market would not have much effect on their wage trends. In a collective bargaining context, of course, tradeoffs by unions of job security for wages are not unusual. Since the union exacts a rent from the employer, it can take that rent in various forms. There are significant questions about the nature of the trauma facing nonunion workers in the 1990s (i.e., security of current job versus availability of outside jobs) and whether - even if such workers were fearful - their insecurity would have made much difference in the rate of aggregate wage inflation.

(3) Productivity Increases Drive Down the NAIRU

Greenspan's other favored theory, a technology/productivity boost that would rein in labor costs for a time, also seems rooted in bargaining. A technology surprise might catch unions unaware, or in the midst of long-term contracts, so that nominal wages might not rise to capture the potential real wage gain. But an atomistic nonunion labor market - in which wages are determined by market forces with (no more than) an annual frequency - would not seem to offer an improved NAIRU in the face of a positive productivity shock. In such a "free" labor market, workers are presumably paid closer to their marginal revenue product; productivity increases should be quickly captured by individual workers, especially in a period of labor shortages.

Perhaps there might be lags entailed in nonunion wage setting somewhat akin to union contracting. Maybe it takes time for information on labor market trends to diffuse through wage surveys into employer wage decisions. But it is hard to see how these lags could have more than very transitory effects. Again, the issue comes down to magnitude. Union contracts typically

run three years in duration. Is there any plausible nonunion mechanism that would likely produce lags that long?

Final Observations

Underlying discussions that went on at the FOMC seems to be a basic assumption that worker-initiated bargaining takes place over wages. Workers (traumatized or not) “ask” and “demand” wage and salary increases. Yet, in the textbook atomized non-union labor market, wages are either determined by market forces (under perfect competition) or by the employer (under monopsony). Workers are wage takers either way.

Of course, models of individual negotiation do exist, and such models can always be used on an ad hoc basis to rationalize almost any explanation (e.g., traumatized workers require less of an efficiency wage premium). Yet, we think that a reader of the FOMC transcripts might reasonably ask whether the Fed’s discussions of labor markets remained rooted in the concept of workers exercising bargaining power, which is most likely where unions are strong. The Fed seemed to have had a tendency over this period to mix together theories involving unions and non-unionized workers into non-specific wage bargaining theories. While it cannot be definitively established, there is at least a possibility that perceptions of a persistence of worker bargaining power - despite union decline - might have led the Fed to be slow in recognizing a structural change in the labor market that was leading to a drop in the NAIRU.

Without collective bargaining power, rents tend to go to employers and wages generally decline relative to a situation in which workers have true bargaining power. We note in passing that this view is consistent with the prevalent pre-Wagner Act institutional notion that nonunion labor markets featured autonomous employer bargaining power. Put another way, the older view – circa 1935 and earlier, when union density was also low - was that the normal state of wage setting in a nonunion labor market was a form of employer-monopsony/oligopsony rather than a union/worker monopoly.³⁴ In such markets, employers – not workers – are the active agents in wage setting.³⁵

It is certainly possible to dismiss the bargaining rhetoric at the Fed as simply careless talk. In that view, FOMC members "really" knew that workers don't bargain for wages and were just humanizing a market process. The problem with that explanation is such rhetoric seems confined to labor markets. If the yen rose in value, it was not explained as the result of yen

sellers who “demanded” more dollars for units of their currency. If wheat prices rose, it was not attributed to some form of “farm price push.” Still we do not know what FOMC members really meant when they talked about wages, whether individual members meant the same thing when they used similar language, or whether “old language” was being used metaphorically to describe new processes.

In the end, all we really know is what they said. An economist from the 1960s or 1970s would likely have felt very comfortable reading the discussions at the FOMC and at the Council of Economic through the late Clinton years. Union settlements continued to be characterized as significant determinants of inflation trends, even after a period of dramatic de-unionization. Estimates of the NAIRU tended to be empirically driven; lengthy periods of low inflation and low unemployment led to downward revisions of its level. However, discussion of how the NAIRU was determined continued to use bargaining rhetoric – with workers demanding and seeking wage increases – despite acknowledged de-unionization.

The surprising persistence of bargaining rhetoric may have its root in the evolution of macro thinking about wage determination. Economists developed the NAIRU concept in the late 1960s and early 1970s. It was natural in that era to portray pay determination in bargaining terms, since unions were still viewed as important players in the inflation process. Notions of what workers would “demand” – which carries connotations of bargaining power – would not have seemed unrealistic at that time. Once the bargaining language was embodied in theorizing about the NAIRU, it apparently remained in place.

We fully recognize that readers may have credible alternative explanations of what we describe. But, the interpretations we offer suggest the importance of a reconsideration of the nature of contemporary labor market institutions, or at the very least the language used to describe them. The lesson for labor economists and macro policy makers is clear. Be careful about what you say. It might be what you think!

Finally, these findings also indicate the possibility of a larger socioeconomic significance of union wage settlements and unionized industrial relations more generally. If the Fed was spending time discussing unions, despite their apparent loss of significance as drivers of macroeconomic outcomes, unions may have some societal meaning and significance beyond the directly quantifiable impacts on unemployment and inflation. In other words, if the Fed members were talking about unions, that may suggest a designation of unions and collective

bargaining outcomes as important to the society (either tangibly or symbolically), in and of themselves.

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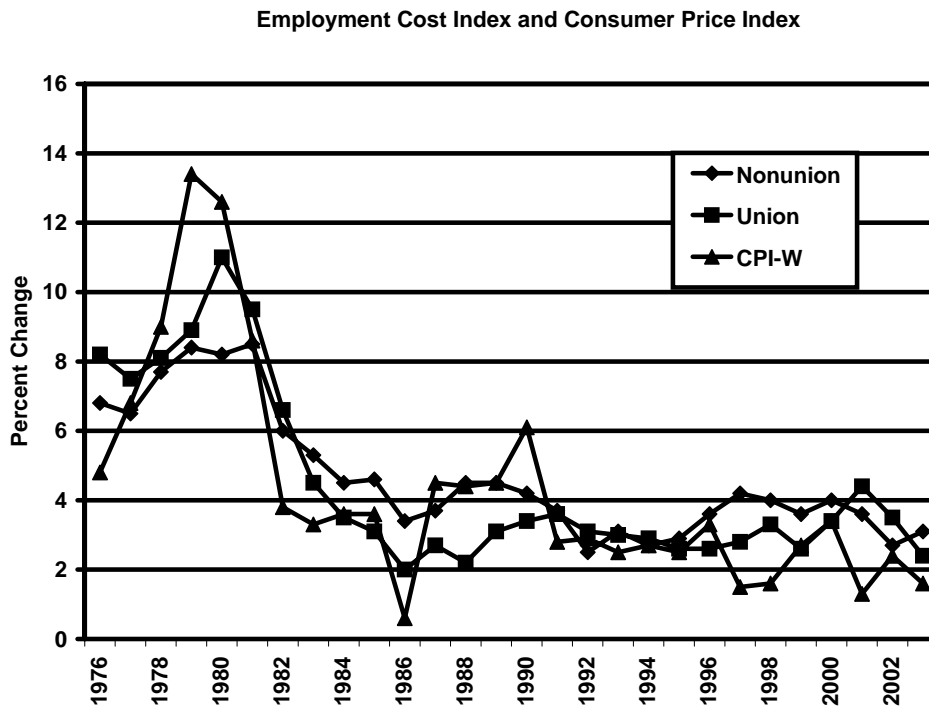
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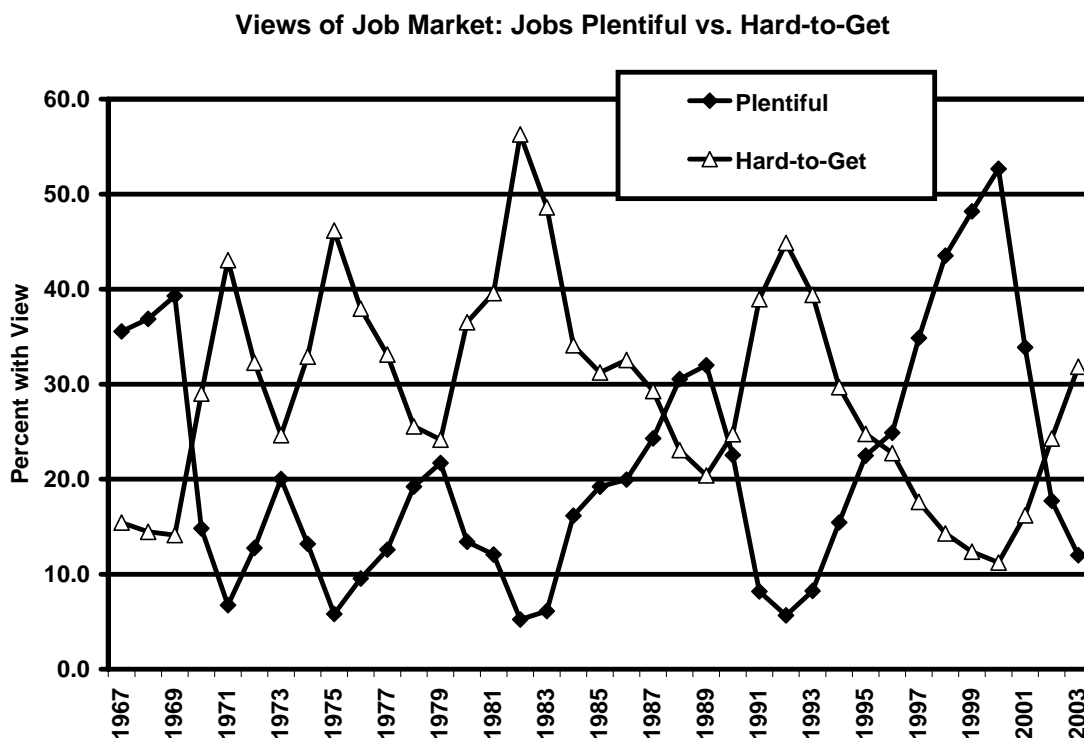
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Figure 1:



Note: The Employment Cost Index refers the percent change (4th quarter to 4th quarter) in wages and salaries in the private sector for the union and nonunion sectors. The Consumer Price Index (CPI-W) refers to the percent change (December to December) for urban wage and clerical workers. CPI-W is the version generally used for escalator clauses in union contracts.

Figure 2:



Source: Survey data provided to the authors by the Conference Board.

Endnotes

¹ The authors thank library and other staff members at the Federal Reserve Board of Governors, the New York and San Francisco Federal Reserve Banks, and the Reagan presidential library for their assistance. Errors and interpretations are those of the authors. In the course of our research, we interviewed in confidence several individuals who served on the Federal Open Market Committee (FOMC). These individuals offered various perspectives on the topics discussed in this paper and their interpretations may be quite different from ours. We thank those individuals and reviewers of an earlier draft of this paper for their insights.

² See Mitchell and Erickson (Forthcoming) for further discussion of macroeconomic implications of the decline of unions, in the context of the Freeman and Medoff (1984) framework.

³ The NAIRU concept held that a drop in unemployment below a certain level would lead to accelerating wage and price inflation. Conversely, unemployment above the NAIRU level would cause inflation to decelerate. NAIRU stands for non-accelerating inflation rate of unemployment.

⁴ At this writing, the authors had transcripts through 1997. Although the transcripts are supposed to be literal dialogue, they have been subject to grammatical editing. In some cases, portions are blanked out to avoid disclosure of confidential information. Occasionally, particularly in telephone meetings, parts of the discussion were apparently lost or inaudible.

⁵ The transcripts are available at <http://www.federalreserve.gov/fomc/transcripts/>.

⁶ The Federal Reserve makes available on a timely basis its official statements explaining policy decisions, abbreviated minutes of FOMC meetings, and its “Beige Books.”

⁷ Normally, non-secret documents are supposed to become available to the public with a 12-year lag. However, various limits have been placed by the Bush (Jr.) administration on internal documents at the Reagan library.

⁸ See footnote 1 for further information.

⁹ Details of the operations of the FOMC can be found on the Federal Reserve website: <http://www.federalreserve.gov/pubs/frseries/frseri2.htm>. The FOMC is chaired by the chair of the Federal Reserve Board of Governors (Volcker and Greenspan during the period covered in this paper). It includes the other members of the Board and a rotating group of presidents of the regional Federal Reserve banks, always including the president of the New York bank. Top staff members also attend FOMC meetings and make presentations on different aspects of financial and economic developments, sometimes through "Chart Shows." Various colored books are available to the FOMC members, notably the "Beige Book" which contains anecdotal evidence from the regional Fed banks and the "Green Book" that contains forecasts from the staff model. Beige Books are available on the web. We obtained Green Books from Fed staff.

¹⁰ Some of the anecdotal information comes from the Beige Books. (See footnote 9.) But often the anecdotes are personal observations of the FOMC members. We attempted to derive statistical evidence from word counts on such key words as "union", "strike," etc. However, problems arose because such words often were used outside the labor relations context, e.g., Soviet Union, Union Pacific, State of the Union, etc. In addition, the web versions of the transcripts use a variety of pdf files, some of which cannot be readily downloaded into other word-processing formats.

¹¹ The acquiescence to painful monetary disinflation was partly due to the intense internal dissent within the Reagan administration on macro policy and – indeed – the Republican Party. Supply siders, gold bugs, and more pragmatic types who were worried about the federal deficit, competed for executive influence, leaving the Fed free to follow its own course. (Weidenbaum 1988, p. 16; Feldstein 1994b, pp. 24-25; Sawhill 1982; Stockman 1986, pp. 62-63, 400; Grieder 1987, p. 645; Niskanen 1988, pp. 18-20, 165-166; Mitchell 2000; U.S. President 1982, pp. 22, 49, 73) Even in the mid-1980s, when the link between money supply growth and inflation seemed to have broken down, and when the Fed was perceived to be targeting real economic growth rather than the money supply, the Council of Economic Advisors could do little more than note these developments. (U.S. President 1986, pp. 27, 54-57)

¹² Member Lyle Gramley at the Federal Open Market Committee meeting of Feb. 2-3, 1981 (from the transcript for that date). See below for web source of FOMC transcripts.

¹³ The correlation between union and nonunion wage inflation (and with CPI inflation) is extremely high. Causation cannot be teased out of the simple times series shown on Figure 1. Our text discussion is based on our views of how policy makers understood the inflation process.

¹⁴ In what follows below, we identify those FOMC members who are members of the Board of Governors of the Federal Reserve as "governors" with the exception of the chair (Volcker or Greenspan) and vice chair of the FOMC. The vice chair of the FOMC, as noted above, is always the president of the Federal Reserve Bank of New York. We identify the other members of the FOMC by their bank affiliation. The Federal Reserve has twelve regional banks. Regional bank presidents serve on the FOMC on a rotating basis. However, the president of the New York bank is always a member.

¹⁵ There was a feeling that the exchange value of the dollar would soon decline, pushing up prices. (Actually, the dollar did not peak until early 1985.)

¹⁶ Chart Shows consist of a series of graphics showing major economic indicators the staff thinks are important along with an oral and written presentation. The BLS data on major union settlements remained available from that agency until the mid-1990s.

¹⁷ In Mitchell and Erickson (Forthcoming), we link deunionization to a tendency toward labor shortages. However, FOMC discussions of this period do not connect the two phenomena. As we note later, even in the 1990s, the linkage was not made by FOMC participants.

¹⁸ Corrigan had moved from the presidency of the Minneapolis bank to the New York bank in 1984.

¹⁹ As noted above, the staff made reference to the idea in October 1987.

²⁰ FOMC meetings are not without levity, even in the midst of serious policy deliberations:

Mr. Lee Hoskins: ...And you're probably all waiting for my stainless steel strip index, but I'm not going to give it to you because I've latched on to a new one: the Smuckers Index! I had a chance to talk with Paul Smucker, an elderly gentleman who has been through many business cycles and he told me that apple butter sales remain relatively soft. And that's a good sign because during deep recessions apple butter sales soar. [Laughter] So, I'll be reporting to you on apple butter.

Chairman Greenspan: It sounds to me as though business is in a jam! [Laughter/hoots]

²¹ Details of the PATCO strike have been described elsewhere. (Northrup 1984; Northrup and Thornton 1988) In essence, Reagan fired the controllers and banned them from future federal employment. New controllers were then hired and trained.

²² It is interesting to note that organized labor did not see itself as the next domino and was slow to come to PATCO's defense. PATCO was not part of the AFL-CIO and – as noted above - had supported Reagan in 1980. Moreover, its job actions in the past had been costly to members of airline unions, including those affiliated with the AFL-CIO. AFL-CIO officials met with Reagan in late 1981 and asked him to reconsider his permanent ban on future federal hiring of the controllers in any position. The president of the Pilots wrote to Reagan thanking him for the meeting and pointedly noted that his union had supported Reagan's action against PATCO. Earlier, a White House official reported to Labor Secretary Elizabeth Dole that the AFL-CIO realized they had gotten "too far out" on the PATCO issue and wanted to put it behind them. This communication may have been referring to an AFL-CIO complaint at the International Labor Organization about the firing of the controllers. The Teamsters president similarly asked Reagan to do something for the fired controllers. Eventually, Reagan revised the hiring ban to three years for jobs outside the Federal Aviation Administration. Relevant documents appear in Reagan library, OA6850. No internal Reagan documents in this collection refer to inflation or economic policy in connection with PATCO, although there are newspaper columns purporting to see a domino effect in the presidential files. If one wanted to make the argument that the Reagan administration was targeting labor more generally, a better case might be made concerning its appointments to the National Labor Relations Board (NLRB), since that agency covered the private sector. But the NLRB does not regulate wage settlements directly and any effect it might have would be through impediments to new union organizing – which had collapsed prior to the change in Board control. (Farber and Western 2002)

²³ Murray L. Weidenbaum, Memos to Cabinet Council on Economic Policy, October 30, 1981 and June 4, 1982. Reagan library, FG010-02 018976 and FG010-02 077303, respectively.

²⁴ Weidenbaum (1988, pp. 139-140) argued that union wage and workrule concessions were sparked by "the new competitive reality," as was the drop in strike incidence. Thus, he tended to see the outcomes in the union sector as responding to broad economic forces such as import competition. He seemed less inclined to view union outcomes as contributing to macroeconomic performance in any short-run sense.

²⁵ Similarly, the Reagan administration supported a subminimum wage for teenagers on the grounds that this would create more youth employment opportunities. And it sought to push defense contractors to take a tougher stance in union negotiations to hold down military-related budget costs. (John H. Stanford to Roger Porter, December 2, 1981. Reagan library folder FG010-02 050103) Some outside supporters of Reagan-era reduced taxes argued that these lower tax rates would raise after-tax real wages; workers would therefore "moderate their demands for higher wages at the bargaining table," according to this view. (Evans 1983, p. 109) But supply-siders within the Reagan administration tended to focus on alleged labor supply effects of lower marginal tax rates rather than on any supposed anti-inflation impact.

²⁶ The Bush (Sr.) presidential library is not yet open to the public and so sources there were not available to the authors.

²⁷ Bewley's work was later summarized in his 1999 volume.

²⁸ Chairman Greenspan had earlier given his famous "irrational exuberance" speech but confessed at the August 1997 FOMC meeting that he did not know what to do about such situations.

²⁹ One of the anonymous reviewers of an earlier version of this paper wondered whether FOMC members from districts with concentrations of union workers were more likely to tell stories of, and attribute significance to, union settlements. It is quite true that in sharing anecdotes, a Fed bank president from the Midwest was more likely to reference union-related events than one from the South. However, as McTeer's comments show, notions of the importance of high-profile union settlements could be held by FOMC members from regions where unions were not prevalent.

³⁰ The Economic Report of the President for 2002 shows a long-term projection of unemployment at 4.9% (p. 53). That estimate was upped to 5.1% in the 2003 and the 2004 Report (p. 63 and p. 98, respectively).

³¹ Meyer (2004) refers to this as the "worker insecurity hypothesis."

³² A third model of the determination of the NAIRU has to do with reservation wages at the bottom end of the skill distribution, characterized by Blanchard and Katz (1997) as the "competitive approach." This explanation would seem to be independent of the "traumatized worker" story, insofar as it involves the reservation wages and job opportunities of those who are unemployed and seeking lowest-paying jobs (hence, the suggestion by Blanchard and Katz the appropriate measure for this approach is the nonemployment rate). Note as well that Blanchard and Katz argue that, under the competitive approach, technological progress should lead to an *increase* in the NAIRU (p. 58).

³³ The third (middle) choice for respondents is "jobs not so plentiful." Data are part of the Conference Board's survey of consumer confidence. A limited description of the survey is available at www.conferenceboard.org. It was reported to us that FOMC staff looked at these series when it pursued the "traumatized" worker hypothesis.

³⁴ The preamble to the 1935 Wagner Act states that *"the inequality of bargaining power between employees who do not possess full freedom of association or actual liberty of contract and employers who are organized in the corporate or other forms of ownership association substantially burdens and affects the flow of commerce, and tends to aggravate recurrent business depressions, by depressing wage rates and the purchasing power of wage earners in industry and by preventing the stabilization of competitive wage rates and working conditions within and between industries."* We earlier cited a comment in 1995 by Fed Governor Lindsey in which he expressed concern that "suppressed" wages might lead to lower consumption, a view in keeping with the Wagner Act's interpretation of wage repression by employers as a cause of the Great Depression.

³⁵ The monopsony/oligopsony approach - in which employers, not workers, are the active agents can explain many of the macro puzzles seen in the 1990s, including persistence labor shortages. (Mitchell and Erickson, forthcoming)