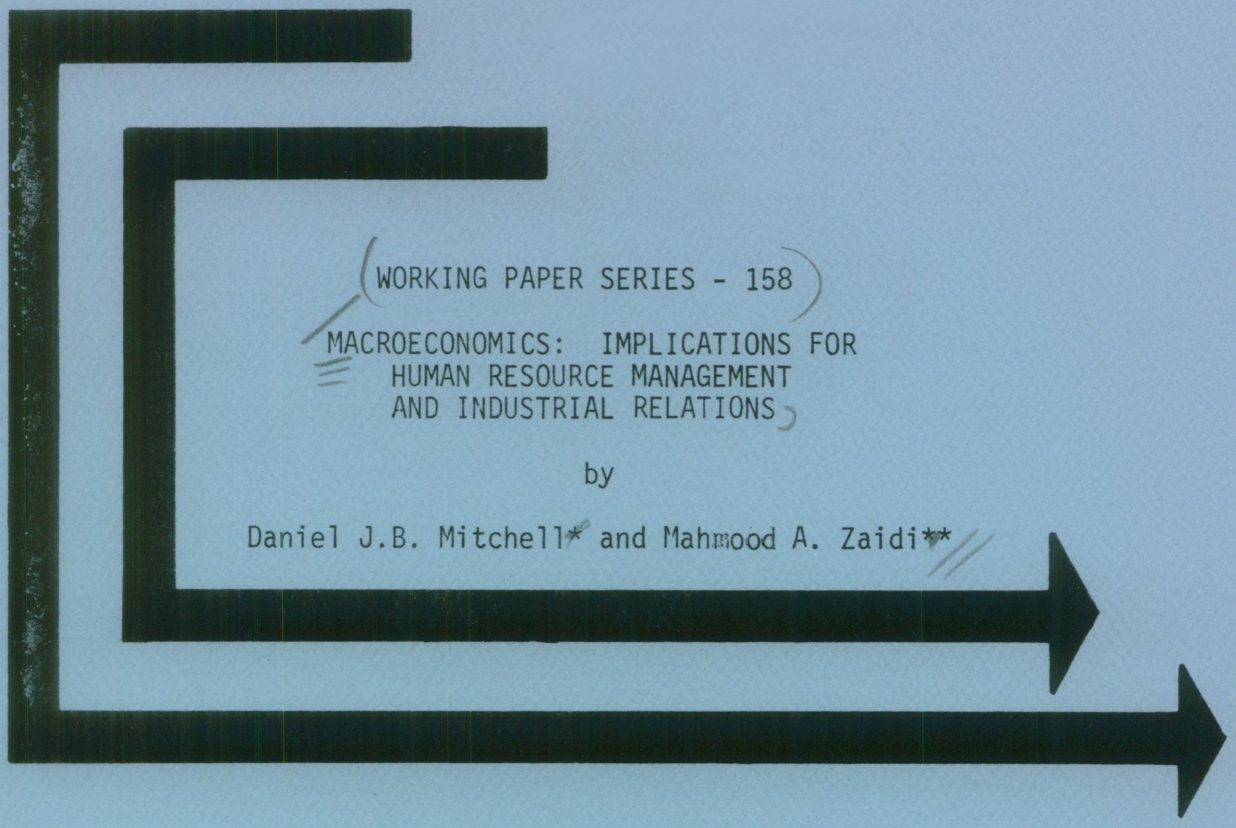

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MACROECONOMICS: IMPLICATIONS FOR HUMAN RESOURCE MANAGEMENT AND INDUSTRIAL RELATIONS

by

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Are there lessons from macroeconomics for human resource (HR) management and industrial relations (IR)? The question at first is strange. HR-IR inherently operates at the micro level, the level of the organization. It would seem, therefore, that while the aggregate behavior of HR-IR practitioners might influence macroeconomic performance, practitioners themselves would have nothing to learn from macroeconomics. Indeed, even academic researchers in the HR-IR field would appear to be far removed from the macro level.

We will argue below that this view of macroeconomics is incorrect. First, macro variables have an influence on behavior at the workplace, both of employers and employees. In our analysis below, we will discuss variables that are generally considered at the macro level, such as the rate of inflation, and point out the effects of these variables on HR-IR.

Second, we will argue that because macroeconomics tends to be an empirically-oriented and pragmatic field, observations made at the macro level can have an important influence on microeconomics. This influence of macroeconomics on microeconomics will in turn (we predict) affect HR-IR. Economics has had a history, at the micro level, of assuming a simple model of individuals optimizing subject to market forces. Macroeconomic difficulties, however, have led to re-examination of the simple model to make it more realistic, particularly with regard to labor market behavior. Newer micro models, which have roots in macro puzzles, will change thinking about HR-IR.

In addition, the pragmatic, empirical aspect of macroeconomics creates a climate of openness about its micro foundation which is receptive to a range of alternative views, including those outside the standard models. For example, the view that current micro practice in HR-IR is less a product of optimizing, and more one of institutional history and "accident," can be accommodated at the empirical level as easily as a more economically-deterministic perspective. Thus, lessons learned from the empirical regularities of macroeconomics do not require acceptance of a particular abstract model that some HR-IR practitioners

might find alien to their way of thinking.

At any rate, macroeconomics points to certain practices at the micro level which do not appear to be readily explained by simple optimizing. Such behavior may have good rational explanations. But in some instances it may point to missed opportunities for better performance. In the field of finance, rational models pointed to such missed opportunities and (for better or worse!) led eventually to applied innovations such as portfolio insurance. There may be similar possibilities in HR-IR.

Third, because of its aggregate nature, macroeconomics suggests that the whole may be more (or less) than the sum of its parts. Thus, even when there are good optimizing reasons for micro-level behaviors, these behaviors taken together may produce external benefits or costs. An example is the paradox of thrift in simple Keynesian models in which individual saving desires may produce insufficient consumption and, therefore, recession.

The existence of such potentialities of collective behavior suggests a need for corrective public policies, some of which have (or can have) a significant impact on HR-IR practices.[1] HR-IR practitioners who themselves intervene in the workplace to promote teamwork and cooperation, rather than individualist welfare maximizing of employees, can readily understand this notion. Past examples of intervening public policies in the macroeconomic setting have included intrusions into the workplace through wage-price controls. In the future, they may include tax incentives for certain kinds of pay systems.

I. Definition of Macro Variables.

The distinction between a macro and a micro variable is often imprecise. Observations made at the firm or industry level are typically considered to be micro. Those made at the economy-wide level are macro. But it is not unusual for macroeconomists to have some disaggregate interests, e.g., the breaking down of the Consumer Price Index into its volatile and its underlying components. And the determination of some variables with economy-wide implications, such as

the exchange rate, is often explained using microanalytic models. Particularly with regard to labor market variables, considerable effort in modern macroeconomics has gone into an attempt to provide a micro foundation for macro-level stylized facts.

Rather than try to draw an exact macro/micro dividing line below, we instead select several variables which are widely held to be important to macroeconomics. We then draw out their HR-IR implications. The main dichotomy we use is the distinction between demand-side influences, usually associated with short-term business cycle fluctuations, and supply-side influences associated with long-term trends in factor utilization and technology. We look mainly at decisions and practices at the firm, rather than at the individual level. Thus, relatively little attention is devoted below to issues of labor supply, even though in aggregate they are assuredly part of the macro economy.

i. Short Term Variables Identified with Business Cycle.

In the short-term, macroeconomics is identified with the study of the business cycle. The business cycle is usually taken to be a demand-side story in the short term, although there have been exceptions ranging from sunspot theories earlier this century (Garcia-Mata and Shaffner, 1934) to more recent attempts to link cyclical behavior to the supply side, e.g., changes in technology, exogenous shifts in labor supply, etc.[2] And in the 1970s and 1980s, there was much discussion of modifications in standard theory to take account of supply shocks from OPEC oil price increases, abrupt exchange rate shifts, and agricultural prices. For purposes of this paper, the source of fluctuations is less important than the reaction to them of key variables of relevance to HR-IR.

Employment.

In the long run, the level of employment is mainly a function of the size of the working-age population and the propensity of that population to participate in the labor force. The industrial and occupational composition of

the workforce reflects technical, production function requirements. These influences are regularly projected by the U.S. Bureau of Labor Statistics (BLS), and are readily available to HR-IR practitioners for employment planning.[3]

Real private GNP rises faster than employment in the long run, reflecting rising productivity. However, in the short term, as Figure 1 illustrates, the ups and downs of employment mirror fluctuations in real GNP. The figure shows two measures of private employment, a simple body count and full-time equivalent (FTE) employment, the latter approximating an annual hours approach. Employers adjust their employment levels by changing the number of workers they retain, and/or by changing the intensity of use of employees (through average hours per week or per year), options we discuss below. However, both measures - total employment and FTE - move together.

Although it is difficult to discern from the annual data on Figure 1, there is some evidence of a lagged response of employment change to real GNP change.[4] Firms apparently show some reluctance to hire immediately as product demand fluctuates. This tendency suggests firms perceive some costs in hiring and layoffs.

Unemployment.

Unemployment is defined for statistical purposes as a situation in which an individual is actively seeking work, or is on layoff awaiting recall, and is without a job in the survey period.[5] Individuals can become unemployed by losing their jobs, quitting their jobs, re-entering the labor force, or entering the labor force for the first time. To the extent that unemployment has frictional and structural components, the number of unemployed can be expected to grow in the long term with the labor force and employment. However, as Figure 2 illustrates, unemployment is highly cyclical in the short run.

The phenomenon of unemployment is important because it represents a failure of the labor market to "clear" in the auction-market sense of that word. Unemployed workers who are willing to work at the going wage may nevertheless be

Figure 1

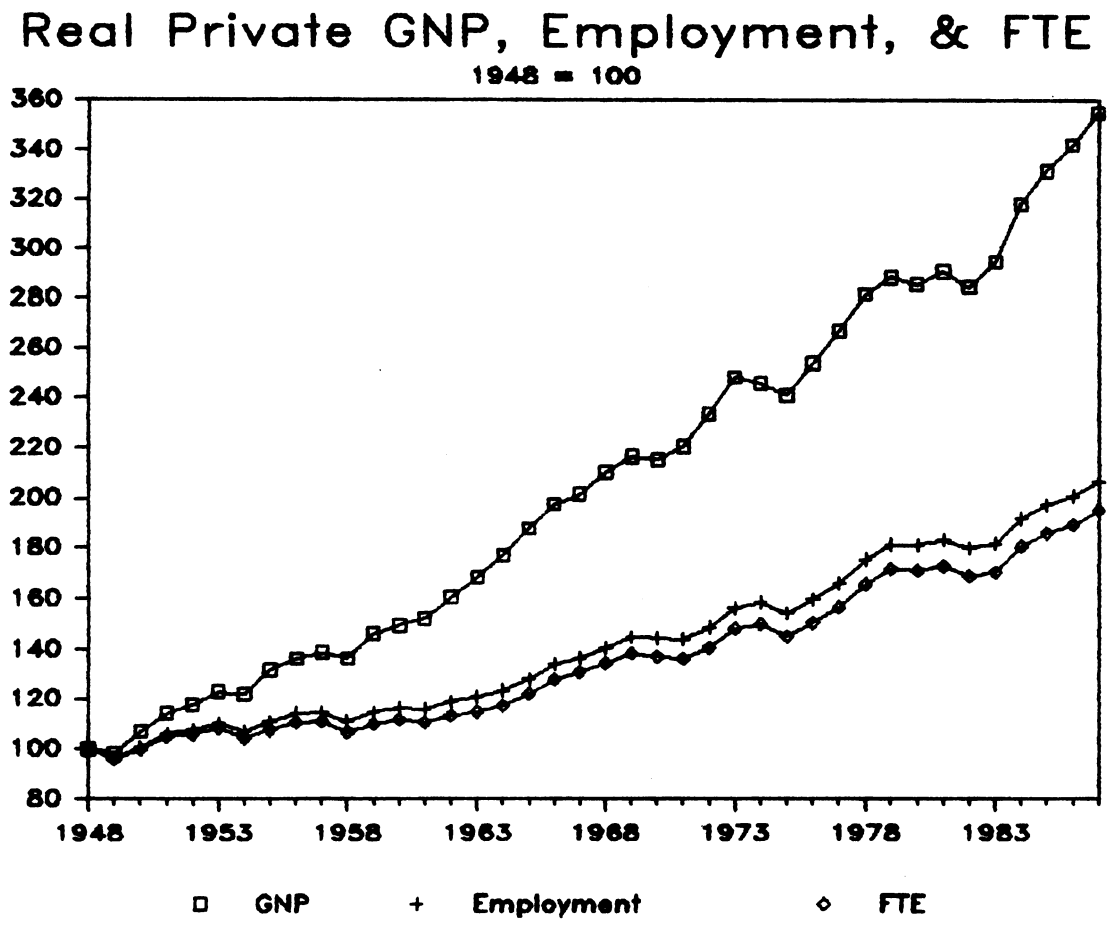
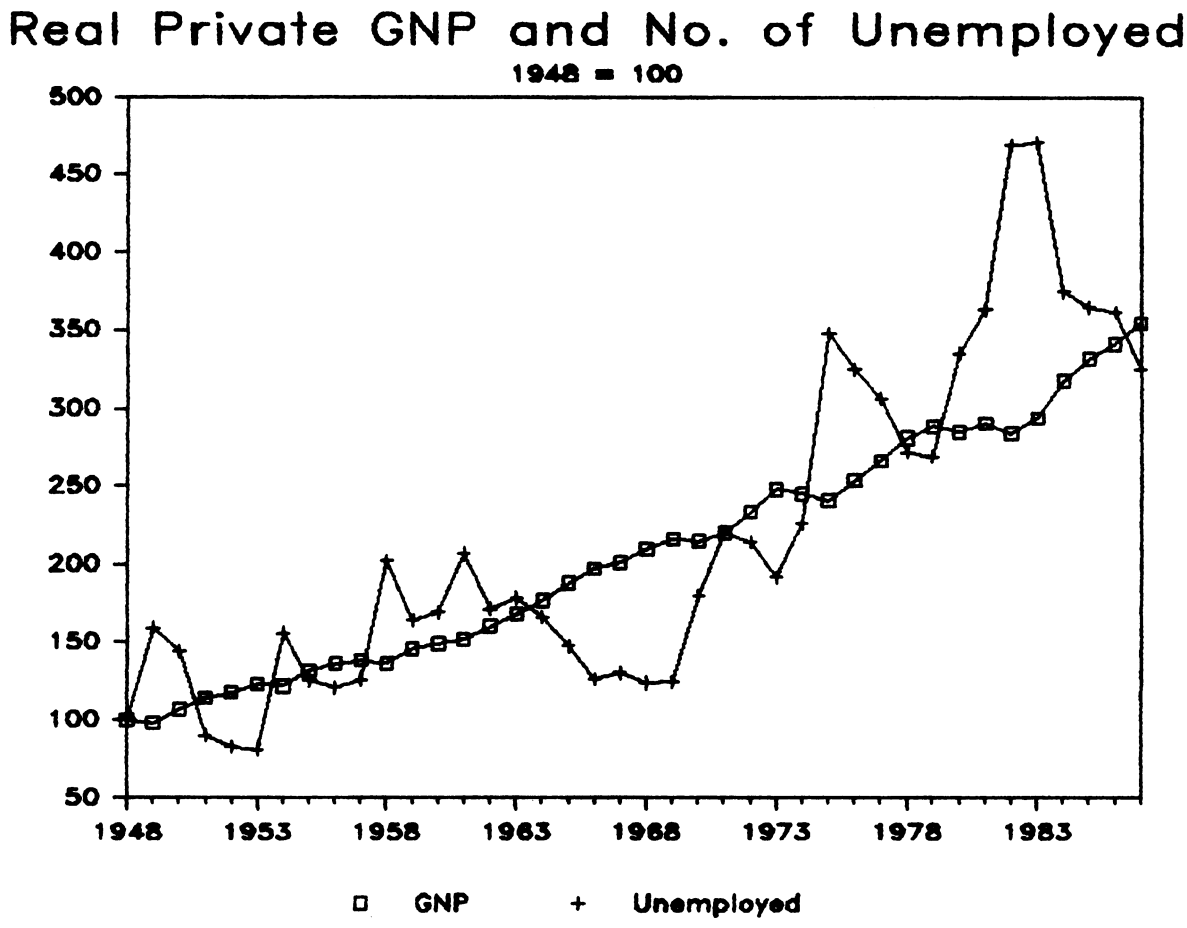

Real Private GNP, Employment, & FTE
1948 = 100
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
1948
1953
1958
1963
1968
1973
1978
1983
GNP
Employment
FTE

Figure 2


Real Private GNP and No. of Unemployed
1948 = 100
500
450
400
350
300
250
200
150
100
50
1948
1953
1958
1963
1968
1973
1978
1983
GNP
Unemployed

unable to find jobs. In the interests of "truth in packaging," we must state at this point our lack of sympathy for models which attempt to "explain" cyclical unemployment - particularly that attributable to job loss - largely in terms of worker preferences and leisure substitutions. It is not that such models are wrong in their own terms; rather they are just not particularly helpful. From a human resource perspective, they tend to blur the great significance for the employer-employee relationship that follows from the possibility of joblessness.

We can suggest reasons why the voluntary unemployment and labor market clearing views are not particularly helpful. These reasons are not original with us, however, and evidently do not dissuade adherents to such models. Thus, we simply list the reasons and leave it to the reader to decide their validity.

First, job losses (as opposed to quits) are employer initiated. It might be argued that the party originating the loss is irrelevant and that what is happening is simply the implementation of an efficient implicit contract in which it has been agreed that the employer will be the initiator. The problem with this approach is that most job losers are not on layoff awaiting recall.[6] Hence, job loss often severs their relationship with the employer, sometimes with very little advance notice. (GAO, 1987) It is difficult to view such events as the result of prescient contracts which "respect the value of the worker's time."[7]

Second, the social distress connected with unemployment suggests that it is not usefully viewed as elective. The fact that workers in the real world know there is a risk of unemployment does not mean they prefer it.[8] Although victims of an airplane crash presumably knew of the risks of flying when they boarded, we do not generally view them as choosing death or injury. The "voluntary" element of the disaster does not prevent us from asking whether changes in aircraft design might reduce the risk. Similarly, "voluntary" aspects of labor market disasters should not be used to prevent examination of whether a reconfiguration of institutions might reduce joblessness.[9]

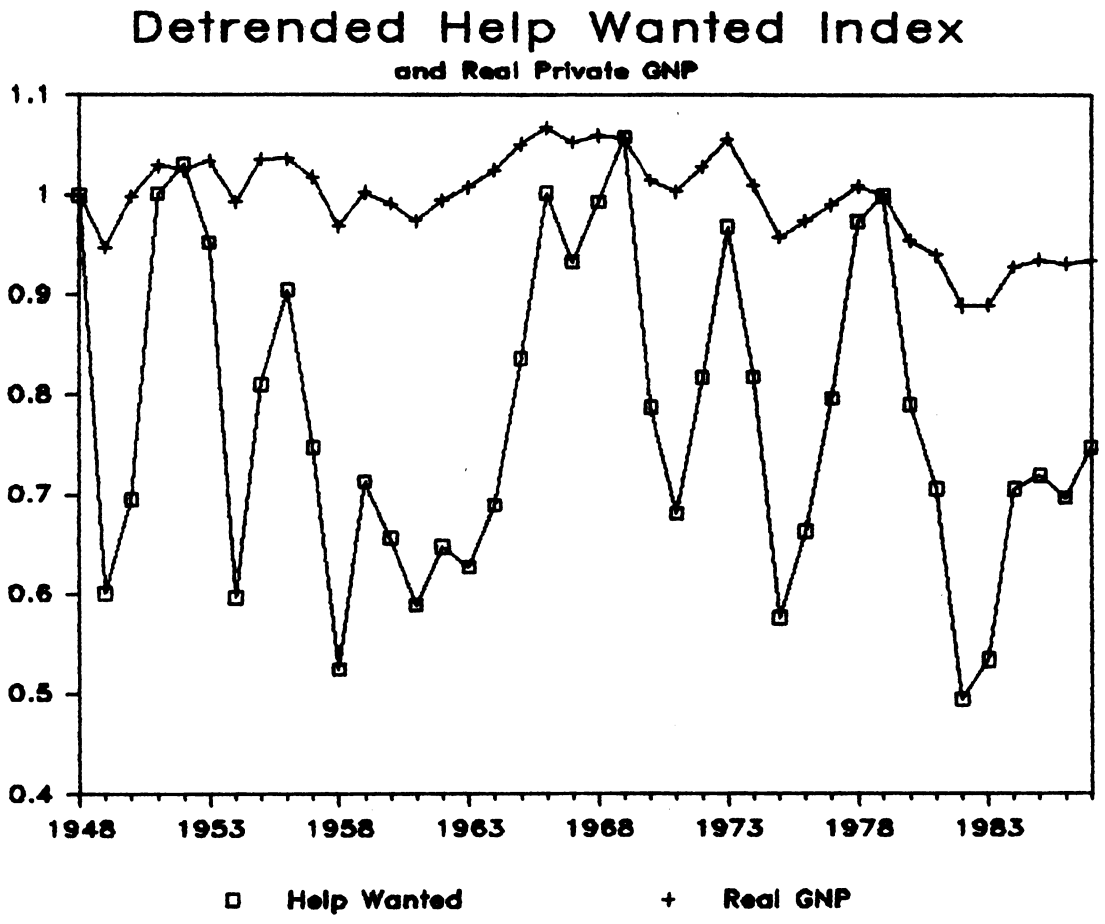
Third, it is not true, as some commentators seem erroneously to believe, that the Current Population Survey (CPS) counts people as unemployed who have decided to substitute leisure for work, so as to give a false cyclical picture of non-clearing behavior.[10] Except for those on layoff awaiting recall, the questions involve active work seeking behavior. There is no reason to believe that individuals pursuing voluntary leisure should be seeking work, or that - if they are doing so - their numbers should be strongly anti-cyclical. In fact, there are many individuals which the CPS excludes from the official count of the labor force despite the fact that they have some interest in having a job.[11]

It is the case that anyone counted as unemployed could in principle convert themselves to officially employed by employing themselves, i.e., by becoming self employed. They could offer to cut their neighbor's grass, for example.[12] However, the unemployed generally cannot simply employ themselves in their previous occupation due to economies of scale and other barriers which prevent workers from hiring capital. (Weitzman, 1982) There may be an incentive for the creation of more worker-owned firms during business cycle downturns.[13] But in the general case, capital hires labor, and rations job availability. Apart from the labor market significance of these observations, the forces involved are fundamental to an economic understanding of why firms are formed and why there are employers in the first place.

When unemployed workers hunt for jobs during "loose" labor markets, they may be told there are no vacancies. At other times, during "tight" labor markets, firms may experience long durations of vacant jobs. Unfortunately, except for a brief period ending in the early 1970s, the U.S. has not collected vacancy data. But a proxy, the volume of help-wanted advertising, is available. (Preston, 1977)

As Figure 3 illustrates, help-wanted advertising is highly pro-cyclical. Thus, vacancies and unemployment move inversely, as do unemployment and voluntary quits. When unemployment is low, workers can be picky about the jobs

Figure 3


Detrended Help Wanted Index
and Real Private GNP
1.1
1
0.9
0.8
0.7
0.6
0.5
0.4
1948
1953
1958
1963
1968
1973
1978
1983
Help Wanted
Real GNP

they take and may readily leave jobs they dislike. Employers must cater to employee preferences when labor markets are tight. The reverse occurs when labor markets are loose; during such periods, employer preferences tend to dominate in the employment relationship.

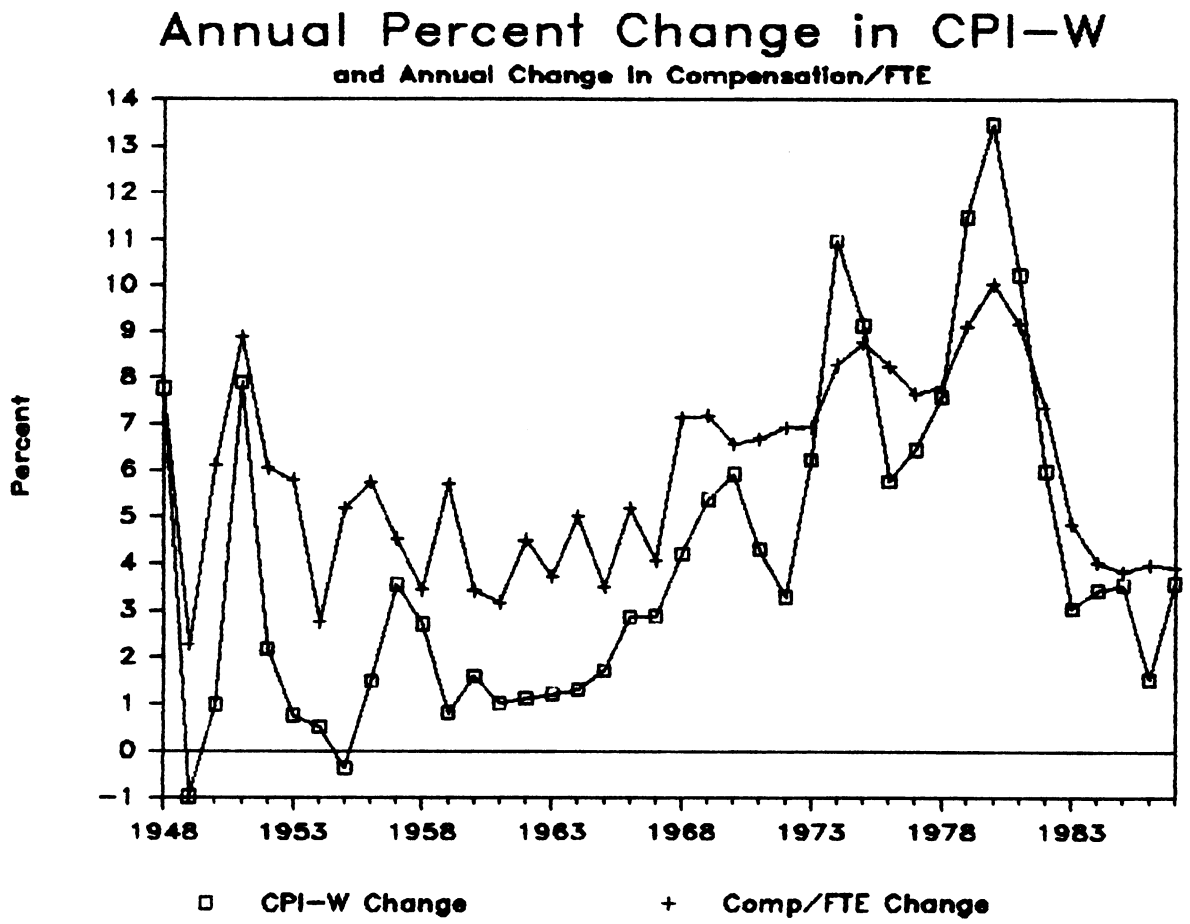
Price Inflation.

Unlike the variables discussed above, inflation of prices is a product market, not a labor market, phenomenon. Generally, it has been assumed that price inflation is very important as a guide to wage determination, although - as will be discussed below - some macroeconomists dispute that view. Figure 4 shows that price inflation, measured by the Consumer Price Index (CPI-W),[14] and wage inflation, measured by private compensation per full-time equivalent employee, are highly correlated. However, the figure also makes clear that 1) the real wage (the ratio of wages to prices) does not always advance, and that 2) real wage declines occurred during periods of external energy price shocks in the mid and late 1970s.

Apart from the impact of price inflation on wages, inflation is also widely viewed as an important influence on nominal interest rates. The newspaper explanation of this connection is often that lenders will not "accept" a reduction in their real return due to inflation. In fact, lenders must accept what the financial markets provide, and there were periods of negative ex poste interest rates in the 1970s.[15]

The impact of inflation on interest rates is especially important to HR-IR practitioners where deferred benefits must be funded, e.g., defined-benefit pensions. If inflation pushes up wages, without producing corresponding increases in nominal interest rates, the current funding costs of such benefits is increased. Similarly, a fall in interest rates and an increase in asset values (as occurred during the low inflation period of the mid 1980s) can lead to pension plan changes. Employers may retrieve "excess" assets from the fund or even terminate the plan and liquidate the assets. Changes in the costs and

Figure 4


Annual Percent Change in CPI–W
and Annual Change in Compensation/FTE
Percent
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
−1
1948
1953
1958
1963
1968
1973
1978
1983
CPI–W Change
Comp/FTE Change

status of pension plans have obvious employee relations implications.

Profits.

At the micro level, private firms must ultimately be profitable to survive. Profitability, therefore, is important for job security and job opportunities. In principle, profits could play an important role in wage determination. Increased profitability could be viewed as an increased "ability to pay" by employers. Where there are formal profit sharing plans, bonuses paid to workers do reflect profitability. However, an important question is whether the wage system itself functions as a de facto profit sharing plan, even where no formal profit sharing exists.

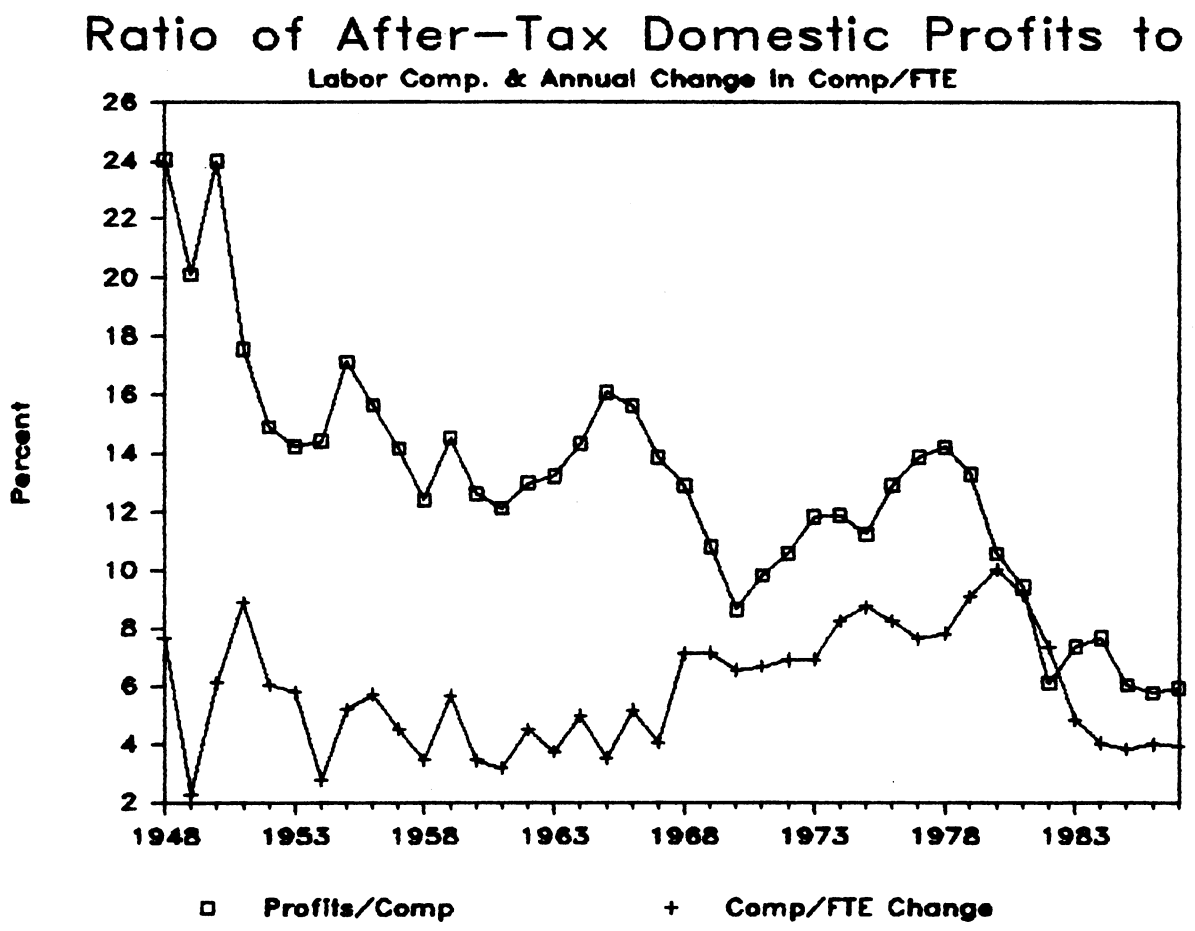
Recently, there have been proposals - based on macroeconomic considerations - to increase the proportion of the workforce covered by explicit profit sharing. The need for such coverage is lessened to the extent that the wage system has an implicit profit sharing component. However, Figure 5 plots the ratio of after-tax corporate profits to labor compensation and the annual change in compensation per full-time equivalent worker. Although some association appears in certain time periods between the two series, the linkage does not appear to be close or constant, and may reflect the intermediation of other variables.

ii. Variables Linked with Long-Term Economic Performance.

The term "macroeconomics" is often limited to the study of short-term economic fluctuations. However, the evaluation of aggregate economic performance has an important long-term component. An economy which avoided any cyclical fluctuations, but produced a steady decline in real per capita income, could not be considered a success, for example. Thus, long-run trends are as important as short-run variability.

Unemployment, a variable already discussed above from a cyclical perspective, is also of long-term significance. Although the unemployment rate

Figure 5


Ratio of After-Tax Domestic Profits to
Labor Comp. & Annual Change in Comp/FTE
Percent
26
24
22
20
18
16
14
12
10
8
6
4
2
1948
1953
1958
1963
1968
1973
1978
1983
Profits/Comp
Comp/FTE Change

shows little trend, the lowest rates achieved at successive business cycle peaks did show a marked upward trend through the late 1970s. Particularly in Europe, where joblessness was historically high in the 1980s, there has been recent discussion about whether increased labor market "flexibility" could improve the unemployment situation. (OECD, 1986) The word "flexibility" has various connotations in this discussion but generally is linked to HR-IR practices, particularly with regard to layoffs and wage setting.

Although productivity - the ratio of output to input - exhibits a pro-cyclical influence, its long-run trend has been considered more important as an index of economic performance. Until the early 1970s, an upward trend in output per hour ("labor productivity") of 3% per annum was more or less considered natural by U.S. economists. Empirically, real wages over long periods have risen at approximately the trend rate in productivity growth. This observation was built into wage guidelines used in wage-price control programs in the 1960s and 1970s (Mills, 1974), and into the "3% plus COLA" collective bargaining formula in certain industries, especially autos (Katz, 1987, pp. 25-29).

Lower productivity growth after the early 1970s, not only in the U.S., but in most other countries, led to a resurgence in productivity research. Over the long haul, the productivity trend can influence workforce composition and the social climate within which public policies toward the labor market are enacted. Sluggish real wage growth can disappoint workers who were expecting tangible gains in remuneration. Labor force participation rates can be affected; the growth of the female workforce in the 1970s was sometimes attributed to the need of families to make up for lagging real wages of the household head.[16]

II. Macro Variables and the HR-IR Function.

There are many aspects of the HR-IR function which might be influenced by macroeconomic conditions. For convenience, we divide these functions into four categories below. These are: 1) recruitment, retention, and layoffs, 2) the effective use of employees, 3) the employee relations climate, and 4) wage

setting. We then discuss how the variables identified in the previous section influence these functions.

i. Recruitment, Retention, and Layoffs.

Decisions on recruitment, retention, and layoffs are reflections of the firm's demand for labor. The strong cyclicality of employment fluctuations suggests that a good macro forecast would be of use to HR-IR practitioners for short-term planning. It would seem unwise for firms to make costly employment commitments, if the economy was soon to turn down. On the other hand, there might also be some benefit in hiring ahead of forecast upturns to avoid the skill shortages which can accompany decreased cyclical unemployment. Yet, as noted earlier, employment adjustments show some lag in responding to output.

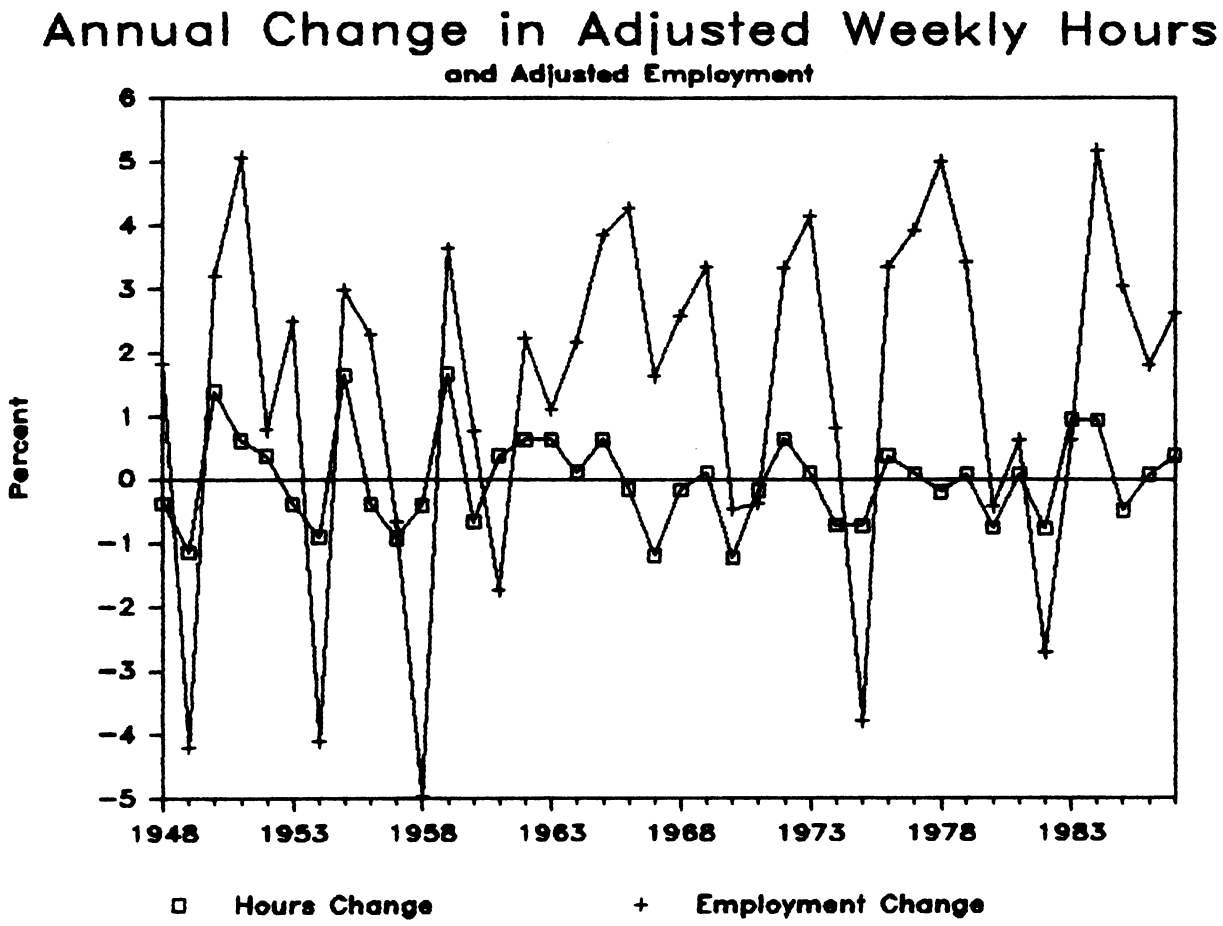
Trends in structural unemployment are usually attributed to long-term influences such as demographics. However, there could be a cyclical element, too, so that seemingly short-term internal firm policies could translate into a long-run social problem. If so, public policy issues arise. In this section, we take up questions relating to employment, business-cycle unemployment, and secular unemployment.

Employment Considerations: Hours vs. Jobs.

Firms have various options in meeting fluctuations in their labor demand. One possibility is to change the intensity of labor utilization by varying weekly hours rather than employment. Indeed, during periods of high unemployment, e.g., the Great Depression and the early 1980s, spreading work around via hours reduction is inevitably advocated as an offsetting macroeconomic measure. (U.S. Bureau of Labor Statistics, 1932; Reid, 1987)

Despite this history of advocacy, Figure 6 suggests that weekly hours variation, while correlated with employment variation, is of a much smaller magnitude. The figure shows detrended hours and employment. Hours variation from year to year stays with a ±2% range whereas employment fluctuations occur

Figure 6


Annual Change in Adjusted Weekly Hours
and Adjusted Employment
Percent
6
5
4
3
2
1
0
−1
−2
−3
−4
−5
1948
1953
1958
1963
1968
1973
1978
1983
Hours Change
Employment Change

with a ±6% range.

Various explanations could be offered for this tendency. Micro theorists might point to employee tastes for weekly income stability and the existence of legally-mandated overtime premiums as barriers to hours variation. We do know that workers not covered by overtime pay requirements tend to work longer hours, suggesting that the mandated wage premium after 40 hours per week does act as a constraint on employers.[17]

Other considerations resulting in hours rigidity might be seniority-related arrangements whereby juniors are most prone to layoff. Under such systems, the inframarginal worker might be unwilling to trade off hours (and income) variation for greater employment stability, since the added stability benefits primarily the marginal worker. (Similar considerations regarding wage flexibility are discussed below). We do know that workers are more likely to indicate they would like to work more hours, not less, other things equal. (Shank, 1986)

Public policy - in the form of unemployment insurance (UI) - may contribute to the preference for layoffs, as opposed to hours reductions, during downturns. The typical state UI system does not pay benefits to workers whose incomes decline due to reduced weekly hours. A number of states in the 1980s modified their laws to allow some benefits in cases of work sharing, however. These changes appear to have resulted in some employment stabilization for those employers who took advantage of the option. However, only a negligible fraction of employers participate. One factor is that fringe benefit costs are not proportional to hours and so rise on a per hour basis when hours are reduced. (Kerachsky et al, 1986)

In any case, the lower variability of hours relative to employment may also indicate an unexploited potential for achieving greater job security. HR-IR practitioners may not have carefully examined the employment/hours trade offs they are making. In the 1980s, after a severe slump in the early part of the

decade, and with employee nervousness due to mergers, acquisitions, exchange rate movements, etc., the taste for job security may have increased. Workers might accept more hours variability if it were packaged with assurances of increased employment security.

Employment Stabilizing Strategies.

Apart from hours variation (or pay variation as discussed below), firms have various options for increasing job security. It is possible to protect the employment stability of a group of core employees, by shifting the incidence of variable labor demand to a "contingent" group. Survey evidence suggests an increase in use of such contingent worker groups as temporaries, part-timers, and outside contractors in the 1980s. (Bureau of National Affairs, 1988)

It is not necessarily the case that those working in the contingent labor force prefer such arrangements. Use of employees from temporary help services accelerated in early 1983, just as the economy was beginning to recover from a very severe recession. (Carey & Hazelbaker, 1986) This timing suggests that employers were reluctant to make permanent commitments to regular workers, due to the uncertain economic outlook, and met rising employment demand through temporaries. Given high unemployment - lack of labor market clearing - it was possible to create a second tier of workers out of available job seekers. Nonetheless, for workers in the protected core, and for HR-IR managers seeking to have both flexibility to meet peaks of demand and a loyal core workforce, the contingent option is an important alternative.

Cyclical Unemployment.

Business cycle fluctuations are met with quantitative adjustments more than by nominal pay adjustments. During booms, employers react by expanding hours and employment, rather than just raising pay. (Okun, 1981, chapter 2) During downturns, hiring is frozen, layoffs occur, and a tightening up of merit and promotion opportunities is effected.

The cause of this preference for quantity rather than pay adjustment has long been at the center of macroeconomic debate. In the 1930s, wage rigidity was blamed for unemployment by pre-Keynesian economists. Keynesian theory tended to shift the blame away from wage determination, but nevertheless accepted wage rigidity as an empirical fact. (Mitchell, 1986) In the 1970s, wage determination was again seen as an important element in the quantitative adjustment process and new theories were developed to explain it. These new approaches include the various implicit contract approaches discussed in Wachter (this volume).[16]

All of these approaches, however, lead to circumstances in which "insiders" (incumbent workers) are protected by their employers from underbidding and/or displacement by queues of "outsiders" (job seekers). (Lindbeck & Snower, 1986) When insiders are laid off, they may remain attached to the employer through recall systems. (Feldstein, 1975) Even if all of this behavior can be explained as rational in standard economic terminology, there are still costs as well as benefits from the employer perspective to providing insider protections. The employer is foregoing the possibility of using outsiders who may be superior to incumbents.

Insider protections must themselves contribute to the level of unemployment, since they create hurdles for outside job searchers. The resulting unemployment contributes to the fears of displacement by insiders. Survey evidence concerning displaced workers in the 1980s revealed - not surprisingly - that they often experienced long periods of joblessness. (BLS, 1985) In a world of unemployment, it is rational to fear it.

It has been argued, as part of the recent literature on efficiency wages, that unemployment is a kind of disciplinary device. Under efficiency wage theory, employers need to have a penalty for misconduct. (Akerloff & Yellen, 1986) They pay higher than a market clearing wage so that employees will pay a penalty if they are dismissed.[17] The labor market always has a worker surplus

as a result. Thus, unemployment benefits individual employers through maintenance of employee discipline.

Nonetheless, since job insecurity can trigger public interventions which limit employer flexibility, employers as a group may be better off in a tight labor market (i.e., with low unemployment). The enactment in 1988 of federal requirements for advance notice of mass layoffs and plant closings is an example of such an intervention which was strongly opposed by business groups. During the past two decades, employee protections have grown also through court decisions - eroding the at-will doctrine, for example. Programs such as workers' compensation and EEO have been increasingly used to deal with worker grievances, including those arising out of discharges.

In addition, demands for legislation mandating employer provision of certain benefits, e.g., health insurance, are premised on stable employer-employee attachments. Were the labor market tighter, with low unemployment and more voluntary turnover, the attractiveness of using the employer as a provider of social insurance would decrease. Such demands might focus on means of handling social concerns other than through the employment situation.

Thus, employers who individually may be rationally following strategies which cause unemployment may be imposing eventual hardships on other employers and themselves. Because of the highly decentralized American economic system, such externalities are difficult for employers to confront. Business groups, such as the Chamber of Commerce, can lobby against public interventions in the workplace but have no authority to modify employer policies which lead to such interventions.

Despite the efficiency wage argument, high unemployment does not necessarily contribute to good macro productivity performance. Productivity growth, for example, was much higher during the incredibly tight labor markets of World War II than during the very loose labor market of the Great Depression.[20] Employers with stubbornly high rates of unfilled vacancies are

forced to find ways to economize on labor.

Labor Shortages.

General labor shortages have occurred less frequently than surpluses. They have been especially associated with wartime labor markets and historically have influenced subsequent HR-IR practices. During World War I, for example, the attributes of the workplace aspects of welfare capitalism were developed. Internal labor market practices were further enhanced during the labor shortages of World War II. (Jacoby, 1985, pp. 133-165, 260-274)

Defining the precise boundaries of the labor market has always been a problem. Even in 1982, a recession trough, more people who entered employment did so from being outside the labor force than from a state of unemployment. An average of over 4½ million workers entered the labor force each month while a similar number departed. (BLS, 1983, pp. 8, 11) The overall labor force participation rate fluctuates pro-cyclically, so that more people enter the labor force in Good Times than in Bad. This characteristic is one of the factors behind "Okun's law," which indicates that it takes a more-than-proportional jump in real GNP to lower the unemployment rate by a given amount. (Okun, 1970, pp. 132-145)

The evidence suggests that as the labor market tightens, not only are people sucked into the labor force, but also that job mobility increases. Quits rise as workers face improved external opportunities. And there is an upgrading of the labor force into better jobs as hiring and promotion standards are relaxed. (Okun, 1973; Vroman, 1977)

It is clear that employers seek to fill vacancies from all sources, not just the unemployed. There is in fact a spectrum of labor market attachment ranging from the presently employed, to the unemployed, to individuals not officially in the labor force who express some interest in working, to those who currently have no such interests but who might be enticed under appropriate circumstances. Thus, during periods of labor shortage, HR-IR managers must have

strategies to tap these potential pools of labor.

Structural Unemployment Issues.

Initially, the issue of structural unemployment was viewed skeptically by Keynesian economists. Such arguments were seen as diverting attention from the appropriate macroeconomic remedies. (Killingsworth, 1979) Macroeconomists became concerned about structural unemployment when it appeared that traditional monetary and fiscal policy might be unable to drive down the rate of unemployment without causing accelerating inflation. Milton Friedman (1968) suggested the concept of a "natural" rate of unemployment below which inflation acceleration was inevitable. However, the natural rate tended to be seen as determined by labor force composition and therefore susceptible to lowering by public training programs. These programs would match the skills of available workers with those required by employers, thus removing the structural barrier to lower unemployment without rising inflation.

Although the popular press has tended to present training programs as boondoggles, there is evidence that some of them, at least, did improve the lot of their clients. (Ashenfelter, 1978; Levitan & Gallo, 1988, pp. 103-4) However, even given such successes, it would be difficult to argue that the natural rate has been substantially lowered by government training programs. Indeed, it may be that the problem with persistent structural unemployment involves the wage-setting process and is not purely a matter of demographics and skills. Generally, economists who are willing to consider a role for wage setting prefer to substitute the acronym NAIRU (non-accelerating inflation rate of unemployment) for the natural rate concept.[21] (Siebert & Zaidi, 1988) The implication of the wage-setting view is to shift public resources and attention away from training programs - including training subsidies to employers - and towards modifying the wage system.

Much of the discussion of the interaction of the wage setting process and the natural rate has occurred abroad. In Europe and elsewhere, countries which

had remarkably low unemployment rates in the 1960s compared with the U.S., found themselves with high unemployment in the 1970s and 1980s, sometimes substantially exceeding American levels. A number of studies appeared, suggesting that real wages in Europe had become too high, and that therefore what was being observed was "classical" rather than "Keynesian" unemployment. (Sachs, 1983; Bruno and Sachs, 1985)

One explanation was that nominal wages were indexed, formally or through wage bargaining, to prices, and that external oil price increases in the 1970s had pushed wages up relative to domestic (internal) prices. The resulting profit squeeze would trim the demand for labor. Another view was that there was simply a worldwide increase in labor militancy - reflected in strikes and industrial unrest - which had pushed wages up. (Nordhaus, 1972) Whatever the cause, the possibility was also raised that once real wages rose, still-employed insiders kept the wage high at the expense of unemployed outsiders, creating "hysteresis" (continuation) in unemployment.[22] (Blanchard & Summers, 1986)

The interaction of wage (W) setting and price (P) setting could produce a rise in the NAIRU. Assume that over some period, the labor market attempts to set a real wage W/P and the product market tries to establish a price markup P/W.[23] Obviously, desired W/P must equal the inverse of desired P/W, or there will be disequilibrium, in the form of accelerating inflation or deflation. A heightened level of economic activity, as proxied by a fall in the unemployment rate (U), can be expected to raise desired W/P, either as a result of competitive employer bidding for labor or through changing union bargaining strength. It will also influence the ability of firms to obtain markups, as their demand curves shift. That is, we would expect a decrease in U to raise <u>both</u> desired W/P and P/W.

At any point in time, therefore, there is one level of the unemployment rate (U*) which reconciles labor and product market wage and price setting. Lower rates will accelerate inflation. Higher rates will decelerate inflation

and ultimately lead to deflation. The reconciling U* is the NAIRU in this model. However, rather than a fixed number geared to demographics and skills, it is a variable which will be raised by such events as spontaneous increases in labor militancy or OPEC oil price increases. If the monetary authorities wish to prevent inflation acceleration, they will keep the economy at or below the NAIRU.

While doubts have been raised about the real wage model in the European context (Gordon, 1987), there is at least casual evidence that changes in wage and price setting had an impact on the NAIRU in the U.S. In the 1970s, it seemed progressively difficult for the U.S. to lower the unemployment rate without inflation acceleration. Thus, in 1979, unemployment stood at 5.8%, an historically high level for the top of a business cycle boom. The 1970s were characterized by OPEC oil price shocks, which pushed up desired wage targets and markups.[24] Escalation of union contracts rose, thus incorporating oil price movements into wages as well as the inflation-biased treatment of housing in the CPI. Union wages rose relative to nonunion suggesting wage pressures in that sector, despite deteriorating productivity performance. (Mitchell, 1980b, chap. 4) Finally, long-term union contracts happened to be timed so that collectively bargained wages "missed" the impact of restrictive policy and recession in 1974-75. (Mitchell, 1982)

In contrast, in the 1980s, oil prices fell, unions were significantly weakened, escalation declined (see below), and wage norms seemed to shift downward (Perry, 1983; Mitchell, 1985a) Employers reported less of a propensity to look outward at wages, and more towards their own internal economic circumstances. (Freedman, 1985, p. 8) Unemployment declined below the levels of the late 1970s, but without sparking accelerating inflation.

There seemed, in short, to be a two-way interaction between macroeconomic policy and firm-level HR-IR policy. Economic shocks from macro policy caused changes in firm wage setting practices. The perceived change in these practices

allowed the monetary authorities to push the unemployment rate down further. For HR-IR managers - and for union officials - the evidence suggests that shifts in the macro climate occur from time to time, changing the balance of power in the labor-management relationship. We will return to this point in the discussion of wage setting below.

ii. The Effective Use of Employees.

Because the causes of the U.S. productivity slump in the 1970s are not well understood, attention was focused not only on traditional economic variables - such as capital/labor ratios - but also on the possibility that HR-IR policies and tensions in the workplace may have contributed to the problem. (Weisskopf, Bowles, & Gordon, 1983) More generally there has been interest in the impact of such policies on firm performance. (Kleiner et al, 1987) In this section, we consider a variety of macro influences on the effective utilization of the workforce.

Turnover Control.

Macro fluctuations clearly affect employee turnover. As noted above, quits are pro-cyclical, rising as external job opportunities increase. Layoffs are anti-cyclical, rising as the economy turns down. In both cases of employee departure, the firm faces an erosion of its investment in its employees. Firms can use wage policy to reduce quits although, as discussed earlier, they seem reluctant to do so. Deferred benefits, with less-than-complete vesting, also dampen voluntary outward mobility.[25]

Firms can limit their use of layoffs, through devices already discussed, such as hours variation, use of contingent workers, etc. Most firms do not follow a full employment policy - IBM is probably the only <u>major</u> U.S. firm which claims to do so. But other firms with "enlightened" HR-IR policies do use elements of layoff avoidance. They do not guarantee full employment, but they do try to enhance job security. (Foulkes, 1980, chap. 6)

Adapting to Secular Change.

One view of such policies is that market pressures inevitably drive firms to install the most efficient HR-IR practices in these areas. If firms do not vary wages to deal with quits, or if they choose to follow full employment policies, they are seen as pursuing optimal approaches, given their circumstances. Yet, norms of what is good practice seem to change over time, often in response to historical shifts and accidents. (Jacoby, 1985; Mitchell, 1986) At the very least, there may be a lag in adapting to changing economic circumstances. Those who develop appropriate HR-IR practices early on, i.e., who foresee changes in the HR-IR climate, have a competitive advantage in the marketplace.

For example, there have been predictions that the economy is evolving toward smaller firms which will produce customized products for changing markets. (Piore & Sabel, 1984) And there is evidence of a decline in average firm size in the U.S.[25] Smaller firms in more erratic markets would have to evolve HR-IR policies which enabled them to obtain needed skills quickly. But they would be less able to maintain a cadre of overhead workers to do it. Unions might function in such industries as referral services, as they do in fragmented industries today such as construction and film production. And given the potential weakening of employer-employee attachments which such a development might entail, unions might focus on providing individualized services to members other than traditional bargaining representation. (Heckscher, 1988, chap. 9)

Adjusting to such long-term macro changes will require redesign of existing HR-IR practices; it won't just happen. Simply going along with HR-IR fads - such as team production - will not necessarily improve performance. (Katz, Kochan, & Keefe, 1987) HR-IR managers who can design systems that reconcile employee needs for stability and firm needs for flexibility will provide a competitive edge for their organizations.

Productivity Measurement.

Since the early 1960s, macro perspectives on the sources of productivity growth have been enhanced by the use of "growth accounting," a term associated with Edward F. Denison. (1962, 1979, 1985) Such accounting breaks down the sources of output increase by considering both capital and labor inputs, and then adjusts these inputs for detailed quality changes where possible. What remains is a residual involving changes in technology and managerial technique, a factor that "explained" over two thirds of the growth of output per employed person in the nonresidential business sector during 1929-82. It also accounted for over half of the decline in this measure between the periods 1948-73 and 1973-82. (Denison, 1985, pp. 30, 37)

While Denison explicitly accounted for formal education, demographic shifts in the workforce, and time lost to strikes, remaining within his residual are the general climate of the employment relationship and the stock of human capital accumulated on the job or outside the formal educational system. By definition, we cannot say how much of the residual effect is due specifically to changes in the employment relationship. But micro-level evidence increasingly suggests that the climate at the workplace "matters."

Productivity movements are of obvious importance to the HR-IR function at the level of the firm and establishment, since they help determine trends in unit labor costs. Although at the enterprise or plant level, it would probably not be worth the effort to attempt to replicate a Denison-type study, HR-IR managers can measure output per hour. They could even use the multifactor framework to account for capital and materials inputs, as the BLS has started to do at the industry level. (Gullickson & Harper, 1987)

There are no comprehensive surveys concerning the extent to which firms measure productivity. But there are reasons to suspect that - despite the faddish nature of discussions of productivity improvement in the management community - productivity measurement is not systematically undertaken,

particularly outside the large firm setting. HR-IR managers and consultants would do well to adopt some of the techniques developed by economists in the macro productivity field and adapt them for use at the micro level.

The Labor Relations Climate.

As noted above, there is evidence that the labor relations climate affects firm performance within the union sector. Workplace frictions, as measured by grievances, strikes, etc., influence the effective use of employees by the firm.[27] Although less work has been done on analogous conditions in the nonunion sector, it is likely that the same basic conclusions would be ascertained.

It is known that the business cycle influences the climate of labor relations in complicated ways. For example, strikes seem to be pro-cyclical and are influenced by the degree wages keep up with, or fall behind, general inflationary trends in the economy. (Rees, 1952; Mitchell, 1981; Kaufman, 1981) During periods of union weakness as measured by low wage settlements, strike frequency also seems to decline.[28] Filings of unfair labor practice charges with the NLRB also are affected by the level of, and direction of change in, business conditions. (Mitchell, 1980b, pp. 116-117)

Apart from its impact on general wage trends (discussed below), unexpected price inflation can complicate labor-management relations by creating pressures for "catch up," especially if wages are not subject to an escalator clause. Because such clauses tend to award cost-of-living adjustments as flat cents-per-hour payments, they can narrow the relative (percentage) wage structure and give rise to pay inequities and reduced promotional incentives. (Mitchell, 1980b, pp. 149-151) Inflation variation, by increasing uncertainty over likely future inflation rates, can increase the probability of a strike when union contracts expire, especially if the parties do not follow the practice of using escalation. (Gramm, Hendricks, & Kahn, 1988; Gray, 1978)

An increase in price inflation can induce strife over union demands for

installation of new escalator clauses. And it can lead to management proposals to eliminate or cap escalation in periods when the inflation is external, e.g., due to OPEC, exchange rates, farm prices, or errors in CPI methodology, since full indexation is not optimal under such conditions. (Gray, 1976) All of these problems cropped up in the 1970s, and gave rise to limitations on both the "quality" of escalation and the number of workers covered by it during the concession years of the 1980s.[29]

Indeed, escalation in the 1970s may have been part of the mechanism which triggered union wage concessions in the 1980s. Union wages rose relative to nonunion during the 1970s, and escalated union wages rose faster than non-escalated. The widening union-nonunion wage differential is believed to have increased management incentives to resist unionization (Freeman & Medoff, 1984, p. 239) And the wage concessions that followed have been seen as "corrections" of the earlier widening. The dampening effect of import prices in the 1980s may also have reduced wage inflation. (Vroman & Abowd, 1988)

Although, as noted earlier, less is known about the effects of macro variables on the employee relations climate in nonunion settings, it is likely that inflation has a distorting effect there, too. Nonunion firms are more likely than union to rely on individual "merit" adjustments in wages. In fact, managements at nonunion firms may state that they make no general adjustments and award pay increases only on merit.

Such merit-only policies pose obvious problems during periods of high inflation, since some way must be found to keep average wages increasing. There is weak evidence that claimed exclusive reliance on merit falls in such periods. (Jacoby & Mitchell, 1983, p. 323) But firms which persist in merit-only policies find themselves having to find almost all workers to be meritorious in order to keep up with external wage trends. Such practices tend to undermine the incentive effect merit awards are supposed to have.[30]

The deterioration of long-term productivity growth in the 1970s seemed to

be felt initially more in the nonunion than in the union sector. (Mitchell, 1980b, pp. 43-45) That is, real wage trends in the nonunion sector appeared to reflect the productivity trend more than was the case in the union sector. Perhaps the "3% plus COLA" principle continued to influence union wages, even after the 3% productivity factor had disappeared from the national economy. Thus, the productivity decline may have contributed to the widening union-nonunion wage gap in the 1970s, and - therefore - to the subsequent union concessions and membership losses. It has been argued that unions may have made a deliberate choice in the 1970s to obtain short-term gains despite long-run consequences. (Lawrence & Lawrence, 1985) However, the trade offs may not have been clear. With the benefit of hindsight, union officials may want to take a longer-run perspective on issues such as escalation and annual improvement factors in the future.

Fair Dealing.

Recent economic literature, with its emphasis on implicit, long-term contracts in the labor market, suggests that firms make an investment in "trust" between employer and employee. Where physical capital is concerned, it is sometimes said that managers can act to maximize short-term (accounting) profits - at the expense of long-run owner interests - by cutting back on maintenance. The temptation to do so may be particularly great when economic circumstances are adverse. And much the same may be true about the firm's investment in the trust and the goodwill of its employees.

The onset of the Great Depression ultimately produced a substantial burst of unionization, despite the fact that historically union membership had been pro-cyclical. As firms fell on Hard Times, they apparently dropped some of the more humane features of welfare capitalism, triggering a backlash from their workers, both directly and through the legislative process. (Jacoby, 1985, pp. 217-223) It may be that the soft labor markets of the early 1980s, which for certain industries remained soft for several years, created a similar change in

climate. Under a banner of a need for "competitiveness," firms may have spent previous accumulations of worker goodwill. Some of this pressure can be seen in contemporary legislative developments, e.g., plant closing notice requirements.

Other macro variables may have interacted with the general economic climate to produce situations in which trust was allowed to depreciate in the 1980s. For example, falling nominal interest rates and a rise in stock price values (until the October 1987 crash), led to "overfunding" of some defined benefit pension plans. There were instances in which managements terminated such funds, and reclaimed the assets, giving vested workers annuities only for what they were legally owed. However, legally-required funding rules do not correspond to the liabilities of such plans when viewed as part of implicit contracts. Workers tend to suffer effective capital losses when plans are terminated, even if they are paid what they are technically owed.[31]

iii. Wage Setting.

While there is a long-term close correspondence between real wage trends and productivity trends, in the short run, considerable divergence occurs. There is a substantial literature involving the estimation of short-run (quarterly or annual) econometric equations explaining wage change.[32] While this literature is far too voluminous to summarize, it has some basic features. The wholesale estimation of wage equations goes back to the Phillips curve study which found that nominal wage inflation slowed during periods of high unemployment in Britain. (Phillips, 1958) Subsequent studies added other variables and modified the original specification in many ways.

The modified Phillips curve approach was subject to both theoretical and empirical criticisms. On the theory side, although the inclusion of unemployment seems to give the relation a demand-supply flavor, that flavor is not consistent with an auction market. Wages are typically not predicted to fall when there is excess supply by the Phillips curve; rather they are forecast to rise more slowly. Moreover, the modified equations are not necessarily

consistent with constant natural rates of unemployment or NAIRUs.

These criticisms, although they seemed to be devastating to some theorists, in fact may simply reflect the deviation of the real world labor market from the theoretical model. In the post-World War II period, nominal wage cuts - while not unknown (especially in the concession-prone 1980s) - seem to be unusual. (Mitchell, 1986, pp. 46-47) Lags operate to prevent wage changes from immediately reacting, or reacting fully, to unemployment increases. And the NAIRU may well be a variable, not a constant, for reasons explored earlier.

More of a problem for the econometric wage equations is the fact that they seem to be empirically unstable. Their coefficients vary considerably, depending on the time period chosen for estimation. Thus, it seems unwise to draw conclusions from nuances in any one specification or estimate.[33] Some very general conclusions, however, can be reported.

Inflation Effects.

The evidence suggests that two kinds of variables influence short-run wage change: inflation variables and activity variables. There are three basic candidates for inflation variables: 1) the official CPI, 2) some other price index in which volatile external price elements may play a smaller role than in the CPI, and 3) past wage trends. In addition, some researchers have been interested in separate specification of external (versus domestic) prices. (Vroman & Abowd, 1988) The official CPI is an obvious candidate for a price inflation measure, since we know that escalator clauses are virtually all based on it.[34] However, nonunion workers - who constituted 6 out of 7 private employees in the mid 1980s - rarely have formal escalation. And the majority of union workers are also not covered by escalators. Thus, the existence of CPI escalation for a small minority is not evidence that the vast majority of workers have their pay set based on the CPI. Indeed, the existence of only a small union sector and an even smaller escalated subsector within it may well account for lesser real wage rigidity in the U.S. than in other countries.

(Siebert & Zaidi, 1986)

Movements in the CPI may reflect factors external to most employers, such as jumps in energy prices or farm prices, and, hence, do not necessarily indicate employer "ability to pay." For that reason, a price index which is less sensitive to external forces, might be preferable. Generally, price indexes taken from the national income (GNP) accounts are less volatile than the CPI and are more domestically oriented.[35]

It is possible, however, that the inflation effect on wages is not through prices directly, but through wages themselves. Some studies have argued that the relevant explanatory inflation variable for current wage change is lagged wage inflation. (Gordon, 1988) Note that such a view would imply that wage determination is largely unhinged from general economic forces in the short run. As will be seen below, real activity measures and other variables do not strongly influence short-term wage change. So if prices do not influence wages, wages would be left to determine themselves.

Activity Effects.

Since the original Phillips study, it has been traditional to use the unemployment rate as a measure of the state of the labor market. Sometimes, unemployment rates for specific groups are used instead or the overall unemployment rate is corrected for demographic shifts in the labor force. (Perry, 1970) These studies implicitly assume that the state of the job market - proxied by excess labor supply - is of concern to wage setters.

Alternative views are possible. For example, given the non-clearing nature of the labor market, a variable geared to excess demand, i.e., unfilled job vacancies, could plausibly be suggested as the appropriate activity index. The insider-outsider view suggests that the queue at the factory gate would matter less in wage setting than an absence of needed job applicants. Finally, it might even be the case that labor market variables such as unemployment are simply a reflection of the overall stage of the business cycle. In that case,

what matters is the business cycle itself - which influences employer "ability to pay" - rather than the state of the labor market per se.

Other Possible Effects.

It could be that variables other than those relating to inflation or the level of economic activity influence wage determination. Obvious candidates are profits and productivity, both of which seem linked directly to ability to pay. Of course, these variables are themselves heavily influenced by the business cycle.

Actual Data.

On Table 1, we present some annual wage equations estimated over the period 1954-87. Our purpose is simply to illustrate general tendencies and to give the reader a sense for what wage researchers are likely to find. In all cases, the dependent variable is the annual percent change in compensation per full-time equivalent employee (%W) from the national income accounts.

To measure price inflation, we use the annual change in CPI-W (%CPI) and the less volatile annual change in the private GNP deflator (%PGNP), both lagged one period.[36] The alternative notion that lagged wage inflation determines current wage inflation simply involves using lagged %W as an explanatory variable rather than price inflation.

Various alternatives were used to construct activity measures: the inverse of the official civilian unemployment rate (1/U),[37] the ratio of help-wanted advertising to trend (HELP), the ratio of average weekly hours of production and nonsupervisory workers (standardized to 40 hours) to trend (HOURS), and the ratio of real private GNP to trend (GNP).[38] Also included in some regressions on Table 1 are equations utilizing the ratio of after-tax corporate profits to corporate labor compensation (PROFIT), lagged one period, and a productivity variable - the percent change in business output per hour (%PROD).

The first lesson from the table is that all specifications perform

Table 1: Annual Wage-Change Regressions

Equation number	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Dependent Variable	%W	%W	%W	%W	%W	%W	%W	%W	%W	%W	%W
Constant	-.13	-.54	-.07	.29	-.90	-73.87*	-16.76**	.07	-.40	-58.81*	-14.50**
$\%CPI_{-1}$	.54**	-	.54*	.54**	.49**	.52**	.60**	-	-	-	-
$\%PGNP_{-1}$	-	-	-	-	-	-	-	.71**	.60**	.74**	.73**
$\%W_{-1}$	-	.85**	-	-	-	-	-	-	-	-	-
U^{-1}	20.57**	7.69	20.80**	19.53**	-	-	-	15.06**	-	-	-
HELP	-	-	-	-	6.09**	-	-	-	4.85**	-	-
HOURS	-	-	-	-	-	1.92*	-	-	-	1.53*	-
GNP	-	-	-	-	-	-	20.17**	-	-	-	17.36**
$PROFITS_{-1}$	-	-	-.01	-	-	-	-	-	-	-	-
PROD	-	-	-	-.12	-	-	-	-	-	-	-
ar(1)	.42*	-	.43**	.36	.27	.52*	-.02	.05	.07	.15	-.20
$\bar{R}^2$	.78	.59	.77	.78	.83	.72	.81	.74	.78	.70	.80
Standard error	.95	1.32	.97	.96	.84	1.09	.89	1.04	.96	1.11	.91
Durbin-Watson	2.17	-	2.17	2.15	2.11	2.15	1.90	2.00	1.95	1.96	1.95
n	34	34	34	34	34	34	34	34	34	34	34

Note: Period of observation is 1954-1987. See text for details.

*Significant at .05 level.
**Significant at .01 level.

reasonably well, with fit as measured by the adjusted R^2 ranging from just under .6 to just over .8. Some are better than others. But given the known sensitivity of such equations to period of estimation and to precise variable definition, it would be best not to draw strong conclusions from minor differences.

Second, it appears that profits and productivity do not work well in aggregate wage-change equations, as can be seen from equations (3) and (4). Thus, arguments that U.S. wage setting functions as a de facto share economy are not supported. It is quite possible that there are firms and industries which reflect profitability and productivity in their wage decisions. Profit variables have been found to influence wage setting in disaggregated union situations, for example. (Mitchell, 1980b, pp. 151-152) Profits have been found to play a role in macro-level wage determination in other countries. (Siebert & Zaidi, 1984) But they are not important enough in the aggregate to move the overall wage index for the U.S. used for the regressions of Table 1.[39]

Third, the use of lagged wage change, rather than lagged price change, in the equations does not improve the results. To the contrary, the lagged wage equation (2) exhibits the poorest fit of any on the table.[40] Employers may well look at wage changes around them as a guide to their own wage decisions. But price movements - if they are of domestic origin - reflect the demand for labor. Thus, they provide "information" on demand as well as the cost-of-living effect. A boot-strap model of wage setting, in which wages set wages, does not appear realistic.

Fourth, the coefficients on lagged prices (all equations except (2)) are less than 1. This result is common in wage equation estimates. It could be that the price effect is being incorrectly measured by the specifications chosen, biasing down the coefficient. But the equations seem to be saying that wages react less than fully to inflation, at least in the short run. Wage setters may look to price inflation as a guide, but they see it as an external

indicator which need not be mechanically followed. Thus, periods of unexpected inflation acceleration or deceleration may lead to real wage losses or gains.

As for the choice of price index, some of the equations involving the CPI require autoregressive corrections; those using the GNP deflator do not.[41] This difference suggests that the CPI for an extended period deviated from what wage setters considered relevant to their decisions. Problems with the CPI in the 1970s, particularly regarding housing costs, seem to be the main cause. Apparently wage setters, especially those without mechanical escalators, will discount the CPI when it departs from reality as they see it.

Use of lagged prices in wage-change equations can have two interpretations. There can be a backward-looking process, in which today's wages are adjusted to make up for yesterday's inflation. Or there can be an expectations process in which yesterday's inflation is used to forecast tomorrow's inflation. In practice, it is very difficult to distinguish between these effects. We did not include direct measures of inflation in the regressions. However, studies using direct measures indicate that such expectations move sluggishly with past inflation, suggesting that the two processes - backward looking and forward looking - are virtually the same. Even when people explicitly try to forecast inflation, they have historically looked back at recent inflation in an adaptive expectations process.[42] This tendency seems to be a stylized fact of American wage setting.

In any case, for the union sector, the escalator option can be used to deal with future inflation, if it is considered to be a problem. And in the nonunion sector, wage decisions are basically annual and can be "re-opened" by management at any time. Thus, there is little need to worry about future inflation.[43] That may explain why the effect of inflation on wages is essentially a backward-looking process.

Fifth, it is difficult to distinguish the activity variables in terms of which one is "best." The GNP variable works about as well as the labor market

variables. Help-wanted advertising seems to work better than the other labor market variables, but this feature is a function of the estimation period chosen. All we can say is that in Good Times, nominal wages rise faster than in Hard Times, other things equal.

Sixth, the effect of Good Times and Hard Times is attenuated. For example, the unemployment coefficient in equation (1) indicates that a one percentage point increase in unemployment from 6% to 7% would slow wage inflation by only 0.5 percentage points. It is this type of observation which gave rise to the implicit contract research described earlier. Firms react to Hard Times with layoffs much more than with changes in wage policy.

Economists have suggested possible rationalizations for such behavior; if those rationalizations do not ring true to HR-IR specialists, perhaps they need to articulate and examine the causes of this deviation from the market model. Perhaps the insensitivity of wage decisions to real economic conditions - which long puzzled economists - would also puzzle HR-IR practitioners, if they explicitly considered it. Indeed, perhaps such consideration would lead to more flexible pay policies. The fact that wage rigidity seemed to increase significantly after World War II suggests that its postwar magnitude is not an eternal characteristic. (Allen, 1987; Mitchell, 1985b)

III. Micro Interventions for Macro Reasons.

Dissatisfaction with macroeconomic performance can lead to public policies which intervene at the micro level in the HR-IR function. Fears of inflation, particularly the wage side of inflation, have led to use of wage-price controls and guidelines with varying degrees of legal force. The tax code could in principle be used to influence wage-setting behavior and the choice of pay systems. Such use of the code has not occurred in the U.S. - yet - but it has been suggested. Finally, if the concern is over an intractable, high unemployment rate with a structural component, subsidies - through the tax system or otherwise - could be used to encourage employers to hire the

disadvantaged. All of these macro-oriented policies affect internal firm behavior in the HR-IR function.

i. Wage-Price Controls and Guidelines.

During the Kennedy/Johnson administrations, "voluntary" guidelines were imposed on larger, more visible firms and bargaining units which could be subjected to "jawboning" by the President or other officials. Wage-price controls were made mandatory by the Nixon administration, although the precise rules varied as the program went through various phases. Finally, during the Carter administration, "voluntary" guidelines were backed up with a stick: a threat of losing federal contracts for firms doing business with the government.

Under the Carter program, there was also supposed to be a carrot of "real wage insurance," tax relief to workers if their wage compliance led to real wage losses due to rising inflation. This feature was never adopted by Congress. However, it was the first attempt to use the tax code in order to change micro-level HR-IR incentives for short-term macro-oriented reasons.[44]

Controls programs and guidelines influence the HR-IR function in a variety of ways, some of them inadvertent. For example, they strengthen the position of HR-IR managers within the firm, since these managers become the interface with the enforcement authorities. Controls and guidelines also require more record keeping and documentation than many firms normally undertake, with regard to labor costs, productivity, etc. The climate of employer-employee and, where relevant, employer-union relations is changed, since the government becomes a third-party decision maker with regard to pay determination.

Wage-price interventions typically favor certain practices over others. In the U.S. case, deferred benefit plans have typically been given preferential treatment relative to cash wages, for example. Escalator wage adjustments have been given preference over non-contingent wage increases. Merit pay and promotion systems are favored since they may be used by firms to escape ceilings on wage adjustments, or may be given explicit preferential treatment by the

authorities.

In the union sector, tandem pay relationships may be encouraged. To make the job of regulating wages across the economy manageable, the authorities will necessarily gravitate to systems of precedent, whereby one major pay decision sets a pattern for many others. But such practices encourage wage imitation, especially in the union sector, practices that may persist even after the program lapses.

While the re-imposition of mandatory wage-price controls is most unlikely in the U.S. in the foreseeable future, the use of guidelines again is not so farfetched. Although the Carter guidelines did not appear to have an influence on inflation, the Kennedy-Johnson program did seem to encourage wage moderation for a time. (Perry, 1967; GAO, 1980) Were the political winds in the U.S. to tilt in favor of a form of "industrial policy" (under some name), and should an inflation problem to develop while such a policy were in effect, a wage-price guideline might well evolve.[45] Controls and guidelines have been mainly applied during Democratic administrations, but the Nixon experience showed that either party is capable to resorting to their use, given the right combination of economic and political pressures.

Studies of the experiences outside the U.S. have cautioned against viewing "incomes policies" (the European euphemism for wage-price intervention) as panaceas, but have suggested limited roles for such approaches. (Flanagan, Soskice, & Ulman, 1983, pp. 688-694; Zaidi, 1986) In certain countries with centralized wage setting mechanisms, it has been argued that "incomes policies" have had an anti-inflation influence. Use of incomes policy did not end in the 1970s; Australia's government-business-labor national accord was created in the mid-1980s within that country's wage arbitration system. Thus, the HR-IR field may in the future be influenced periodically by wage-price interventions, however remote the prospect seems in the immediate future for the U.S.

The fact that wage-price policies may be best applied to economies with

centralized wage setting raises another issue for HR-IR specialists in the U.S. Since the U.S. system is not centralized, anti-inflation policy is more likely to be pursued by traditional "tight" monetary policy. (Tarantelli, 1986) The painful side effects of such policy - both at the macro level and at the level of the firm - could be eased by having more flexible pay systems which absorb some of the declines in demand associated with monetary restriction. Firms are more likely to consider the micro level benefits to themselves of flexible pay rather than the external macro advantages to society. That is, they may be less likely to install flexible pay than is optimal from the macro viewpoint. Thus, use of the tax system to foster a modification of the current wage system is raised as an option for policy makers.

ii. Use of Tax Incentives.

As noted above, the Carter administration - as part of its wage-price guidelines - at one point proposed using the tax code as an incentive to hold down nominal wage increases. Had its proposal for real wage insurance been enacted by Congress, the Internal Revenue Service would have had its role with regard to employee compensation substantially enlarged. The IRS already has a significant role in policing deferred benefit plans which qualify for favored tax treatment. But the real wage insurance proposal would have given it authority over all types of pay adjustments, including cash wages. Even such areas as the granting of promotions would have been subject to scrutiny, since otherwise tax rebates might have been claimed on the basis of phony promotions designed to provide otherwise restricted pay increases. (Mitchell, 1980a)

While the extensive intrusion into the HR-IR system of firms inherent in real wage insurance is unlikely ever to appeal to Congress, more conventional tax incentives might be given in the future for macro reasons. The Weitzman proposal (1984) to encourage profit sharing envisions tax incentives as the primary stimulus. In Britain, tax code modifications have already been adopted in response to Weitzman's suggestion. Obviously, if profit sharing were to

become more widespread than it is, the lack of correlation between compensation and profits (after standardizing for the business cycle) seen in wage equation studies in the past might be reversed. In 1986, however, only 22% of employees at medium and large sized firms were covered by profit sharing.[46]

Weitzman assumes that if firms shift toward profit sharing, the expected share bonus will substitute partially for ordinary wages. Thus, the wage rate will be lower, firms will therefore expand their demand for labor, and a labor shortage will be created as all firms increase hiring. Since there will be a permanent labor shortage, he argues, fluctuations in the economy will be generally accommodated by reducing the vacancy rate, rather than by increased layoffs. The unemployment rate will be lower and employment stability will be enhanced.

Should a substantial shift toward profit sharing be induced by changes in the tax code (or come about for other reasons), there could be other important changes in the employment relationship. If workers are asked to share financially in the firm's economic condition, they might eventually press to participate in the decision making process which influences that condition. Particularly where unions are involved, workers might be in a position to voice such demands.[47] Indeed, unions might find new roles as auditors and monitors of management decisions in a share economy. (Mitchell, 1987)

There could also be changes in the dynamics of relationships between employees. Under profit sharing, new hires tend to dilute the amount of the bonus available for incumbents, as critics of Weitzman like to point out. (Nuti, 1987) In short, insider workers might pressure management to avoid hiring outsiders.

Although conceived as a macroeconomic reform, a switch to a share economy would have important HR-IR implications. There are elements in the proposal that have broad political appeal. To the left, a share system can look like ersatz socialism; to the right it can be seen as teaching workers the virtue of

capitalism. HR-IR practitioners should be monitoring this debate (if not participating in it) and should be considering what substantial profit sharing might mean for their own firms.

iii. Job Creation Programs.

One possibility - if there is concern over high structural unemployment - is for government to hire workers directly. Such hiring - unless it is completely isolated from other public jobs - affects the HR-IR function within the government sector. It may also affect the level of hiring of other government workers, since the jobs created may substitute in part for work that would otherwise be performed. This issue arises particularly when federal money is used to promote job creation at the state and local level, although strict eligibility rules can reduce the substitution effect significantly. (Adams, Cook, & Maurice, 1983) Generally, the less targeted the subsidy is on marginal hiring, the less expensive it will be per job created. (Bassi, 1985)

During the late 1970s, the U.S. embarked on various policies which provided subsidies to private employers through the tax system for hiring of target groups. Two options are available. Either targeted job seekers can be given eligibility certificates which they present to employers. Or the task of searching out eligible workers can be left to employers.[48]

There is some evidence that certificate-bearing workers are in fact stigmatized as poor job risks, making their job search more difficult, despite the available subsidy. (Burtless, 1985) Substitution issues again arise; employers might fire non-subsidized workers and hire subsidized employees to replace them. Generally, the targeted tax programs were relatively little used by employers, perhaps because of the complexity of administration. (U.S. Depts. of Labor & Treasury, 1986).

While direct job creation programs have not had a great impact on employers to date, they have affected individual firms. HR-IR specialists, particularly in firms which depend importantly on the federal government for contracts, must

be sensitive to affirmative action requirements. Programs which provide subsidies to hiring or training of the disadvantaged thus may complement activities the firm would undertake in any case. Executives of such firms often serve on local boards, such as Private Industry Councils, which disseminate information about such programs, and are in a position to benefit from them.

IV. Conclusions and Implications.

Macro variables, such as price inflation and the state of the business cycle, have an important effect on internal firm policies such as hiring, layoffs, and pay setting. In addition, they can trigger public policies which intervene at the micro level in the labor market and affect the HR-IR function. During the 1980s, some firms involved in belt-tightening eliminated or reduced the general forecasting function of their economic research departments. Whether an individual firm needs a house forecaster is something we cannot evaluate; economic forecasting can be purchased, like other services, from outsider vendors. However, knowledge of the general state of the economy, and its likely course, is important to those who carry out the HR-IR function.

By definition, individual firms will be reactors to macro fluctuations, unemployment, and inflation. A single firm cannot noticeably alter the aggregate national growth of productivity, even if undertakes dramatic steps to improve its own productivity performance. However, macro problems point to anomalies at the micro level, which firms should consider.

The key macro riddle in the short-term is why firms are quantity adjusters, rather than price and wage adjusters, as the level of demand varies. Economists have come up with various rationales for this deviation from the simple market model. These rationales undoubtedly shed light on current practices. But it is not necessary to assume - as economists often do - that these practices are inherently social or firm optimums.

In some cases, HR-IR practices may be conditioned by social norms. If rules such as wage rigidity and layoffs of low-seniority workers are common

practice, they will be perceived as equitable over time. It may be costly for individual employers to deviate from the norm. Public policies, such as unemployment insurance, may be built up based on these norms, thereby reinforcing them. In order to change the rules, there may be need for a coordinating signal. Just as government sets standards for weights, measures, time, and the currency unit, so it may be required to change HR-IR "standards." Weitzman's proposal for a shift away from a quantity-adjusting wage economy to a share economy via a coordinating signal from the tax code falls into this category.

Not all innovation, however, must await action from on high. The fact that researchers concerned about productivity have found very wide variation from plant to plant suggests that HR-IR approaches make a big difference in performance outcomes. There appears to be wide variation in many HR-IR practices. Newer firms, for example, tend to devote more effort into planning their human resource policies than older firms. (Delaney, Ichniowski, & Lewin, 1988) Existing practice may not be best practice; a practice may be followed simply because it has been the norm in the past. While individual firms cannot solve macro problems, macro problems may be indicators of potential micro level needs for improvement and innovation.

Footnotes

1. An adjustment of fiscal policy was the Keynesian prescription for "excess" thrift, for example.

2. The real business cycle theory has been associated with Edward Prescott and others. See Prescott, 1986. Views by others on the real business cycle approach appear in the same volume. Shapiro and Watson (1988) find important roles in output and other macro variable fluctuations for demand and supply influences (including labor supply). It should be noted, however, that fluctuations involve more than simply recession and recovery. If the primary interest is in the cause of recessions (rather than all period-to-period fluctuations), demand considerations - combined with OPEC shocks in the 1970s - are likely to be seen as major factors.

3. BLS projections appear periodically in the Monthly Labor Review. See, for example, the September 1987 issue.

4. Simple regressions of the percent change in private full-time equivalent employment (CF) against the percent change in real private GNP (CGNP) are improved by adding a lagged change in real GNP term. For 1949-87, the regression is:

$$CF = -1.59 + .77CGNP + .23CGNP_{-1} \qquad \bar{R}^2 = .78$$

and all coefficients are "significant" at the 1% level. The equation suggests that three fourths of the employment adjustment to a change in output is made in the first year and the remaining fourth in the second year.

5. Unemployed persons are those in the noninstitutional population, 16 years of age and older, who did not work in the survey week but were available for work except for temporary illness and looked for jobs during the proceeding four weeks. Persons who did not look for work because they were on layoff or waiting to start new jobs within the next 30 days are also counted as unemployed. These data are gathered as part of the monthly Current Population Survey, involving over 55,000 households, undertaken by the BLS and the U.S. Bureau of the Census.

6. In 1982 - at the bottom of a recession - only about one third of job losers were on layoff. Recessions magnify the proportion.

7. Hall (1980) suggests the efficient contract view as a possibility. The quote is from him.

8. Some economists would argue that the observed behavior in the labor market is a form of clearing and that unemployment is due to lumpy costs of labor supply. For example, in order to supply labor, minimum hours of commuting may be required, so that reduced hours may lead to nonemployment, if not unemployment. (Hansen, 1985) We wish to avoid a semantic debate over whether the behavior in such models clears the market. However, they require such unrealistic institutions as "lotteries" under which selections by employees (not employers) determine who works.

9. We are not arguing that any reform which reduces the risk of joblessness should be adopted, without consideration of cost. As in the airplane case, there are undoubtedly measures that could reduce risk, but which are not economically efficient to undertake.

10. For example, Knieser and Goldsmith state that some workers might "interpret the Current Population Survey as asking 'Would you take a job at your normal wage. w(0)?' instead of asking, 'Would you take a job at the current wage, w(1)?" (1987, p. 1249) In fact, as the text notes, the CPS does not ask about wages at all, only about search behavior and layoff status.

11. In 1987, for example, 5.7 million people aged 16 and over in the noninstitutional population said they wanted a job, but were excluded from the BLS count of the labor force because they did not seek work. About 1 million fell into the category of so-called "discouraged workers" who state they did not seek work because they though they could not get a job. The only strongly cyclical element within this group were the 672,000 who said job-market factors were responsible for this inability. There is as much to be said for the viewpoint that the CPS definition of unemployment is too exclusionary as the reverse. See National Commission (1979, pp. 44-49). However, all reasonable definitions of the unemployed show pronounced cyclical variation, although the absolute count at any time will be changed by the definition.

12. The self-employment option generally would involve a substantial cut in earnings. As Greenwald and Stiglitz point out (1987, pp. 10-11), the existence of a sector in which displaced workers can be employed at earnings substantially below the going rate in the sector from which they came is inconsistent with classical labor market clearing behavior.

13. Avner Ben-Ner reports to us that his research indicates an increase in the creation of worker-owned firms in recessions. We are grateful to him for his information on this point.

14. CPI-W covers "urban wage and clerical workers." It was the only version of the CPI available until 1978 until CPI-U was produced. CPI-U covers all urban households. The two are currently basically the same except for budget weighting. However, for a two year period in the early 1980s, the indexes had a different methodology with regard to the housing component. Both now use a rental equivalency housing measure, but CPI-U introduced the new method - which avoided direct input of mortgage interest rates and house prices - first. CPI-W is more widely used for purposes of formal wage escalation than CPI-U. We will discuss the issue of escalation below in the text.

15. Real interest rates can be defined objectively (comparing nominal interest rates with actual inflation rates) or subjectively (comparing nominal interest rates with expected inflation rates). It can always be argued that even when the objective measure produces a negative number, transactors in financial markets were expecting lower inflation rates than actually occurred. This argument carries less force for short maturities, however. Thus, for example, real interest rates on Treasury bills were negative in the mid 1970s, when prices were pushed up by the OPEC oil price increases and other influences. See also Summers (1983).

16. Evidence from the National Longitudinal Survey indicates that other family income has a negative effect on female participation, especially for women who did not previously plan to work. (Shaw and Shapiro, 1987, p. 10)

17. The longer the workweek of those working more than 40 hours, the less the chance they received overtime pay. Thus, in 1985, 64% of those who worked 1-8 hours of overtime received a premium, 22% of those working 9-15 extra hours, and 14% of those working 16 or more hours. See Carr (1986, p. 38).

18. See also Rosen (1985).

19. In theory, workers could post a bond for good performance. However, such a hypothetical system would face severe hurdles since if employers were the judge of good performance, a moral hazard situation would arise. They might be tempted to declare performance to be unsatisfactory and seize the bond, even for good performers.

20. Official productivity indexes do not go back to these periods. However, real GNP per full-time equivalent employee rose by only 0.5% per annum during 1929-41 and by 4.9% per annum during 1941-45.

21. The distinction between the natural rate and the NAIRU concept was not initially made in the literature, although economists noted that wage push, as opposed to search behavior, could affect the natural rate. (Zaidi, 1974, p. 135)

22. An alternative explanation for hysteresis might be that job skills of the unemployed deteriorate with disuse, reducing the employability of the jobless.

23. Price markups at the firm level involve markups over materials costs as well as labor. At the aggregate level, the materials costs net out, since materials are intermediate goods which firms purchase from one another. Hence, the aggregate markup becomes P/W. For more details, see Mitchell (1987), pp. 319-325. It should be noted that we are dealing with adjustment over an extended period of time. If one argues, as Gordon (1988) recently did, that wage costs empirically have little to do with price trends and vice versa, then the model of the text breaks down and a natural rate of unemployment or NAIRU would have to depend on other explanations. Many would be reluctant, however, to accept a lack of any linkage between wages and prices.

24. Since most firms were not energy producers, and since energy is an input into production, target P/W would rise with energy prices as larger markups over labor costs would be needed to cover energy costs.

25. As will be noted below, even when employees are officially 100% vested under defined benefit pension plans, it is often costly for them to leave before retirement age because of the construction of plan benefit formulas.

26. Continuous comprehensive data on firm size are not available. However, during the period 1975 to 1985, the proportion of employee in establishments with 1,000 or more employees fell from 15.4% to 13.1%. (U.S. Bureau of the Census, 1988, p. 499).

27. The relationships can be complex. For example, Katz, Kochan, and Keefe (1987) find that absenteeism was linked to poor productivity but that grievance filings were not. Apparently, workers filing grievances thought that improvements were possible; those that avoided the work site may have lost hope. On the other hand, Ichniowski (1986) and Norsworthy and Zabala (1985) found grievance rates negatively tied to productivity. Flaherty (1987) finds a two-way connection between productivity and strikes. Periods of rapid productivity improvement can trigger frictions and strike activity. But strikes by themselves have a productivity-lowering effect.

28. The early 1960s and the 1980s were such periods.

29. Escalators rarely give a full 1% adjustment for each 1% increase in prices. In the 1980s, limits were commonly placed on the escalator formulas which reduced the ratio of indexed wage increase to price increase. See Mitchell (1985, pp. 595-597).

30. A merit plan which has been distorted by inflation may still provide some differentiation between good and bad performers. Inflation, however, tends to reduce the signal-to-noise ratio of the plan.

31. Defined-benefit pension plans typically have "lumpy" benefit schedules, e.g., no vesting until 5 years of service, early retirement at age 55, normal retirement at age 65, etc. Thus, workers who fall short of the discrete points in the benefit formula are shortchanged in pension terminations. For example, a person who worked for 4 years and 11 months is technically owed nothing by a plan with cliff vesting at 5 years. Yet that person had every reason to expect that he/she was shortly to become vested.

32. In principle, wage change really refers to movements in total compensation (wages plus benefits). Often, however, actual studies rely on wage-only indexes, mainly for reasons of data availability.

33. This advice often has <u>not</u> been followed in the literature!

34. Although there are two CPIs, as discussed above, it is impossible to differentiate between them statistically. They move together closely. Moreover, the separation into two indexes began in the late 1970s; before that, there was only one official index.

35. Despite this advantage from the employer viewpoint, such indexes are not good candidates for formal escalation because they are frequently revised. In contrast, the CPI is almost never revised, since the BLS realizes such revision could play havoc with wages tied to escalator clauses.

36. Experiments with alternative lag schemes suggested the one period lag "worked" best. Studies with more elaborate lag schemes tend to be those using quarterly, rather than annual, data.

37. Somewhat different results are obtained if alternate unemployment rates for particular groups, e.g., adult males, are used. However, the general conclusions about the unemployment variable discussed in the text are unaffected.

38. In all cases, the trend was based on 1948 to 1979, with both years being cyclical peaks. The ratio variables - other than HOURS - were thus equal to 1 in 1948 and 1979. HOURS is equal to 40 in both years. (In 1948, average weekly hours were just 40).

39. Early studies by Kuh (1967) and by Siebert and Zaidi (1971) found significant effects of productivity in U.S. wage equations.

40. If both lagged price change and lagged wage change are entered in the same regression, lagged wage change is insignificant. Note that the use of annualized data does not permit exploration of very short term lags.

41. All equations, except the one with the lagged dependent variable, include an autoregressive correction. The autoregressive parameter, however, is not significant in the equations not involving the CPI.

42. Thus, Vroman and Abowd (1988) find little difference when they use an expected inflation measure based on lagged CPI changes, or one based on the Livingston expected inflation survey, in wage equations covering over 2,700 union contracts in U.S. manufacturing. The adaptive expectations process regarding inflation does not seem to be a phenomenon unique to the U.S. One study find the same process in Britain. (Holden & Peel, 1979). It is likely

that similar findings apply in most countries, excluding those experiencing hyperinflation. We experimented with inclusion of actual future inflation and with bond yields (which presumably include an inflation expectations element) in our wage equations, but the results were less satisfactory than the equations shown on Table 1.

43. The U.S. has never experienced hyperinflation in this century, which requires constant adjustment of wages in order to avoid drastic real wage declines.

44. It might be argued that the tax incentives given to deferred savings arrangements such as pensions have the macro goal of encouraging long-term national saving and growth.

45. The view that wages play an important role in aggregate price determination has been at the heart at American experiments with wage-price controls and guidelines. As noted earlier, this view has been challenged by Gordon (1988) who argues that "both prices and labor costs live a life of their own." (p. 282) However, the price components of wage-price intervention programs usually insist on markup behavior, even if it is not the norm absent the intervention.

46. See U.S. Bureau of Labor Statistics (1987, p. 81). There are no reliable estimates of profit sharing coverage in smaller firms. Use of profit sharing in the 1980s expanded among blue collar workers as part of the wage concession movement. The most substantial expansion occurred in the automobile industry.

47. Survey evidence suggests that managers in unionized firms are in fact more prone to believe that profit sharing leads to demands for decision sharing, than their counterparts in nonunion firms. See Mitchell and Broderick (forthcoming).

48. Initial experiments with such programs in the late 1970s simply rewarded employment expansion, regardless of the type of employee hired. Hence, determination of eligibility by the employer was based on internal firm records rather than employee characteristics. Later programs targeted specific types of employees, and certification was made by local agencies. Sometimes job seekers were given vouchers. In other cases, employers received vouchers directly from referral agencies.

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