Unemployment, Inflation and the Job Structure

by

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The brief for this paper was to sketch a point of intersection between "macroeconomics" and "structure." If I held to the conventional views of my profession, this would have been a fairly simple task. Macro is macro, and *structure* is microeconomics. This intellectual dichotomy underlies the way we are taught to think. It also leads to the common ground on policy which has come to permeate economics nowadays from the liberal center to the far right, according to which one set of instruments should set macroeconomic parameters while another assures that "markets work" -- for example by providing training and infrastructure, by removing distortions in pecuniary incentives and by removing barriers to the efficient adjustment of prices.

It is a peculiar feature of modern *macroeconomics* that in the conservative limit, it disappears. That is, if all of the canons of the new classical economics hold -- monetarism, rational expectations and market-clearing -- then macroeconomics ceases to exist except as a blown-up version of micro. Aggregate supply and demand models behave exactly as micro supply and demand models, and their message to the policymaker is, "hands-off."

As we shall see, even conservative policymakers usually do not go this far. Partly this is contact with practical reality -- if Robert Lucas were right, what would the policymaker do? And partly it is the influence of theories which compromise the conservative position, violating this assumption or that in a quest for context within which limited macroeconomic action becomes possible. So an asymmetric debate over macroeconomic policy lives on in practice -- asymmetric because those advocating intervention must acknowledge that their grounds are *ad hoc*, impure, *theoretically* problematic.

My dissent does not labor under this disadvantage, for I have come to reject the macro/structure dichotomy on theoretical grounds. To acknowledge the full extent of my heresy, I have come to believe that the core analytical categories of *microeconomics* -- supply, demand, price and quantity in flow markets for current inputs and outputs -- have little bearing on important policy questions and that policy measures addressed to improving the performance of such markets are inherently misconceived. Rather, the markets that truly matter are either asset markets for which the rules are dramatically different than for flow markets, or, as in the case of the "labor market," not markets at all but a deeply structural set of social relations.

Once one reorganizes thinking along these lines, it is *microeconomics* that slinks off-stage. Macroeconomic instruments of

policy (spending, taxes, interest rates and incomes policy) are then seen to be the major, certainly the critical, and perhaps the sole practical implements of power, affecting not only the gross level of activity in the economy but also through their differential effects on asset markets many features of distribution and redistribution. It becomes clear why conservatives always seek to control the high ground of deficit and interest rate policy, and why liberals no matter how committed to reforms on the "supply-side" defeat themselves from the beginning when they concede it.

This paper begins with an examination of the central market metaphor in modern macroeconomics: the labor market and its ostensible point of equilibrium, the natural rate of unemployment. I will argue that the idea of a "labor market" is incoherent. In that case, the "natural rate" cannot exist. This is the simplest and surely the central point.

The alternative construct is a structure of social relations, governed by lateral linkages and subject to institutional modification. Once one visualizes the economic world in this way, social and economic policy becomes largely a matter of making structural choices, and of implementing them with macroeconomic and political instruments.

The Importance of the Natural Rate Theory

In economics terminology is a marker. If you say, "Natural Rate of Unemployment" with a straight face, you have as good as declared yourself a fellow-traveler of what used to be called the Chicago School. If, on the other hand, you persist in using "NAIRU" -- Non-Accelerating-Inflation Rate of Unemployment -- then you are a retrograde American Keynesian, probably trained at MIT, Yale or Princeton, open to the thought that in the short run and within strict limits of prudence government policy can sometimes reduce unemployment.

The space between these competing terminologies virtually defines the modern debate among full-blooded academic macroeconomists in America.

What is the "Natural Rate of Unemployment?" It is the idea that there exists an organic equilibrium of the labor market, a single level of unemployment that is consistent with any constant, unchanging rate of inflation. The "natural rate" is what its name implies: the rate given by the free operation of markets, blessed by the Invisible Hand, graced as equilibrium in the Walrasian sense that once achieved neither excess supply of nor demand for labor disturb it.

The "natural rate hypothesis," write Cross, Hutchinson and Yeoward, "has come to dominate thought about what determines and what can be done about unemployment." Or as Adams and Coe put it:

> The closely related concepts of the natural rate of unemployment and potential output are central to many economic policy discussions. In the near term, these concepts summarize the extent to which inflationary or disinflationary pressures exist in labor and product markets; alternatively, they indicate the capability of the economy to increase the growth of employment and output without increasing inflation. Over the medium and long term, they determine the sustainable pace of non-inflationary output and employment growth. (1990, 232-3)

Thus we have, in effect, a holy grail for policy guidance, wrapped up in a single pair of ideas, namely the natural rate of unemployment and "potential output."[1] Above the "natural rate" (or below "potential output") disinflationary pressures are predicted. Below the natural rate and above potential output inflationary pressures will be found. In the long run, growth of employment at the natural rate of unemployment governs the "sustainable pace of non-inflationary employment growth."

All of this is amazingly non-controversial: the partisans of the natural rate terminology share these beliefs in full with the slightly more liberal devotees of the NAIRU. The distinction between them, so fine it can be captured in a subordinate clause, is merely over whether *policy* is implicated in the return to the natural rate or NAIRU if the economy happens to deviate from it. For the naturalists, the answer is naturally no: the economy will return to the natural rate on its own. To strict natural raters, doing nothing is always and everywhere the right prescription, because the economy will return to the natural rate irrespective of starting position.

But for the NAIRUvians, persistent unemployment above the natural rate is a legitimate possibility. It may reflect a disorder NAIRUvians acknowledge: failure of relevant markets to clear with satisfactory speed. That being so, there may be no harm in policy measures to speed the return to NAIRU so long as a "soft landing" at the NAIRU is carefully engineered. And thus, for NAIRUvians, the issue of whether the economy is or is not near the NAIRU carries a

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[1]The etymology of these two terms, the NRU and potential output, is in fact quite different, but that is another story.

policy significance that it does not for natural-raters.[2]

There is a catch, as Adams and Coe quickly acknowledge:

> Since neither the natural rate of unemployment nor potential output is observed, empirical counterparts of these theoretical constructs must be estimated.

A large literature now exists on estimating the NRU/NAIRU, going back to 1970. For a stationary NAIRU, simple expressions can be derived and calculated; alternatives rest on the individualized ratio of job-separation to job-finding -- a structural characteristic of the labor market in steady state (Hall 1979) -- or on a balancing of macroeconomic adjustment variables and productivity improvement in the economy (see the exposition in Galbraith and Darity 1992). As Juhn, Murphy and Topel (1991) have noted, Hall's original (1970) estimates placed the NAIRU at 3.5 percent for adult men.

But the damn thing does not sit still. Through the 1970s and 1980s, econometric estimates of the NAIRU showed an uncanny tendency to rise alongside actual unemployment. Thus, although actual circumstances in say 1974-75 or 1981-82 might be thought at first glance to support a NAIRUvian position on unemployment policy (a large gap indicating the need for expansionary policy in the short run), econometric estimates of the NAIRU undermined that position, and pointed instead to worsening conditions on the supply side (deteriorating demographic characteristics of workers, an increasingly unstable job-wage and wage-price dynamic (see the discussion in Gordon 1988). According to characteristic estimates by Adams and Coe:

> The natural rate of unemployment is estimated to have increased steadily from 3.5 percent in the mid-1960s to a peak of 7.25 percent in 1980, and then to have fallen back to about 5.75 percent in 1988... Thus, roughly half of the increase in actual unemployment rates from the mid-1960s to their peak in the early 1980s can be attributed to increases in the natural rate.

At each stage when the NAIRU was thought to be rising, uncertainty over where it was and where it might come ultimately to rest cut against the case for a policy of expansion. For who could say when

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[2] Dark Princes can sometimes also be seen operating in this camp, urging *sotto voce* that the engines be gunned before election time, knowing fully that an inflation/ recession price will be paid thereafter.

and where exactly an expanding economy might collide with a rising natural rate of unemployment and ignite an inflationary spiral?

The spectrum in modern macro thus ranges from a principled indifference to actual macroeconomic conditions, radical *laissez-faire* under all circumstances, to a very limited case for intervention in extreme circumstances. This limited case turns on two questions. First, does the economy behave such that policy intervention in the right circumstances to raise the actual rate of growth and reduce unemployment can ever be effective once the initial surprise wears off? Second, if so, is the actual gap between the actual unemployment rate and the NAIRU large enough, and known with enough precision, to justify taking the risk of an expansionary policy which might turn into over-expansion? This dual test forms a high barrier against active policy to fight unemployment or indeed for any other purpose.

Where is the NAIRU Now?

To the (questionable) extent that the Federal Reserve has an operating macroeconomic theory, it is NAIRUvian rather than natural rate. As of mid-1995, with the NAIRU estimated by numerous practitioners at 5.9 percent *and falling,* NAIRU-based theories faced an interesting problem. Actual unemployment at 5.5 or 5.7 percent had fallen below the estimated NAIRU (where it remains at present writing). So how then to interpret the rest of the data? Had the economy exceeded the speed limits, indicating that inflationary pressures will emerge eventually and therefore a NAIRUvian need to tighten up? Or did the apparent lack of inflationary acceleration mean that the NAIRU has perhaps fallen faster than estimates allowed?

Figure One illustrates the issue. A constant six percent natural rate of unemployment does not work for the whole period from 1948 to the present. It is too high for the early years, and cannot account for the creeping inflation of the fifties. And it is too low for the seventies. Making these adjustments, one must ask, where is it now? The inflation rates of the nineties look too low and stable for a six percent NAIRU.

The issue was a delicate one. At the Federal Reserve, internal inflation-tracking equations were said in 1995 to match the flat trend of inflation (about three percent at an annual rate) quite well, and therefore to point to a future inflation rise that justified a policy of tightening aggregate demand. We had passed the NAIRU and so, in Robert Solow's ironic phrase, "acceleration [was] just around the corner."

The Federal Reserve is inflation-averse, and acts accordingly under uncertainty. It tightened in 1994 and 1995 hoping to organize a "soft landing" as unemployment fell below six percent. But then, the landing started to look *too soft* -- even though unemployment remained well below the six percent threshold and inflation pressures never even started! By July of 1995 the Federal Reserve had started lowering interest rates again, even though no official re-estimates of the NAIRU were ever, to my knowledge, made public.

The failure of the six percent NAIRU represents only part of the problem. The *components* of present inflation are also not consistent with the NAIRU or natural rate theory. In particular, wage compensation, two-thirds of all costs, *remains* flat. Therefore the whole of the inflation actually experienced stems from the boom in profits and rents, and the effects of this boom on commodity prices and other incidentals of the inflation process, with some contribution from the rising interest costs imposed since February 1994 by the Federal Reserve's own policy (see a rare discussion in the *New York Times*, April 13, 1995, C1). *None* of present inflationary pressure stems from wages.

This problem is illustrated in Figure Two. The old relationship between inflation and labor costs really has busted up since Reagan fired the air traffic controllers and he and Volcker overvalued the dollar. Prices may be rising at near three percent, but money wages are fluctuating near zero. Indeed we find that all inflation accelerations after 1960, with the sole exception of that accompanying Richard Nixon's election campaign in 1972, were led by prices and not wages. The "labor market" hasn't been tight since the fifties; the difference today is only that it is weaker still.

How is this to be reconciled with a *theory* of inflation acceleration based on the natural rate of unemployment in a aggregate labor market? It can't be. If labor is in excess demand, surely a good (new) classical economist must insist that real wages be rising. They aren't; not even money wages. Something must be wrong with the natural rate model. (Good economists at the Federal Reserve know this, and it bothers them, as it should.)

Nevertheless the pursuit of a "soft landing" continues, with confidence inspired by the fact that model outcomes converge to the natural rate. That this is a feature of solution algorithms and not of the real world, insofar as there is no recorded instance of a "soft landing" in the history of monetary tightenings, has so far not disturbed the ontological slumber on Constitution Avenue.

The Case Against Natural Rate Theory

As Ronald Reagan once put it, "Where's the rest of me?" If you happen to think that the performance of the American economy is on the whole poor -- too much poverty and unemployment, for example -- and that something ought to be done about it, what place is there for you under the macroeconomists' tent?

The NRU/NAIRU answer is: no place at all. For natural raters, this answer is not situationally contingent. But even under the NAIRU construction, present circumstances are a cause for concern about inflation, not unemployment. Policies to attack social problems are therefore relegated to the micro sphere: education, training, infrastructure, welfare and welfare reform. The frustrations that this produces, when for example training is provided for jobs that do not exist, goes unaddressed.

It is not legitimate practice to redesign economic theory around policies desired for ulterior motives. But it is equally illegitimate to reject, dismiss or ignore argument and evidence that have the effect of undermining core propositions. And this is the crime committed, again and again, by professional economics in defense of the NRU/NAIRU nexus and the narrow range of policies that it spans.

This section will argue the case in two particulars.

First, I will argue that the historical evidence can be interpreted quite well without recourse to any natural rate. There is a tendency for inflation to accelerate late in the business cycle. Who can deny that? But there is no tendency for it to accelerate past any particular unemployment rate --- and in fact the actual unemployment rates past which inflation accelerated have differed in every business cycle.

Second, I will argue that the natural rate construct depends on an *a priori* theoretical siting of the wage/employment relation in a "labor market." This is a metaphor, and a weak one. When it is dropped, one finds oneself back at the doorstep of Keynes's General Theory, with quite a different roadmap for the theoretical and policy task ahead.

The Nomadic AIRU

Every macroeconomics textbook sports a version of Figure Three, on the breakdown of the stable short run Phillips trade-off in the late 1960s and its replacement by the non-relationship

predicted in the late 1960s by Milton Friedman and E.S. Phelps. Robert Lucas has called this "as clear-cut an experimental discrimination as macroeconomics is ever likely to see." (Lucas 1981) High inflation does not (necessarily) reduce unemployment; the actual relationship is close enough to indeterminate that one can draw a vertical line on the graph and call it the "natural rate of unemployment."

It is a measure of something, not very flattering, about economists that this argument was as persuasive as it was. For it is easy to show that annual data with no indicated time-path give an impression of scatter that other forms of analysis contradict. A version of the same story, which I call the "ultimate Phillips Curve" is presented as Figure Four.

Figure Four uses a centered 12-month moving average of monthly data for both inflation and unemployment. The advantage of months is many more data points; that of moving averages is to smooth out noise in the monthly data. The empirical picture one arrives at is very different..

As the figure shows, and conservatives may take some satisfaction, the Phillips curve does move from shallow to steep, and ultimately to vertical, as the business cycle expansion proceeds. This happened in 60-69, in 71-74, in 77-80. However, on no two occasions did the AIRU (accelerating-inflation-rate-of-unemployment) coincide. The NAIRU is a non-observable constant. The AIRU, in constrast, is observable but nomadic.

Further, the pattern of widening gyres reversed itself after the deep recession of 1982. Through the 1980s, unemployment fell without wage pressures and without sharp rises in inflation. The recession of 1989 supervened while inflation was low by historic standards. And in the past three years, 1992-1994, there has been falling unemployment with falling unit labor costs and no rise whatever in inflation. We do not know where the nomadic AIRU is now, or even if it still exists. But there is no case in this data for a single natural rate, nor even for one shifting in line with known changes of labor supply. The case for an end-of-cycle supply-shock interpretation of rising inflation is just too strong.

The Labor Market as a Social Myth

Let us turn to a more theoretical issue. What does it mean in principle to say that "the" labor market is tight, or slack, or in equilibrium? To the economist these notions rest on the familiar notion of supply and demand: a slack labor market is one in which labor is in excess supply (there is unemployment), and therefore

downward pressure on the real value or purchasing power of the money wage. A tight market is one in which unemployment is low and *therefore* real wages are rising.

To an economist, a market is defined by the plausible presence of demand *and* supply curves, which is to say of schedules of price and quantity, of bids and offers, on both sides of the transaction. It is this, and only this, that makes possible systematic statements about the effects of change (such as, "a decrease in price will raise the quantity demanded"). Such statements are plausible in the case of apples, for example (even though there are many varieties and grades of apples) or for fish (though an even wider variety exists), because in the aggregate different apples and different fish are reasonably close substitutes for one another, and because we can plausibly imagine prices adjusting in response to shortage and surplus or changes of consumer mood.

The labor market has never been a market in this sense. Each individual worker brings a complex package of characteristics, skills, job history and reputation to each possible job match. The range of substitutability is extraordinarily narrow. While people do change jobs after an early age most never change from one line of work to another. Jobs themselves are, perhaps, not so complex as the people who hold them, but they too are highly differentiated. Neither individuals nor jobs are close substitutes for one another.

The idea that people can readily be switched from job to job would appear to stem from the idea that *labor time* is a commodity with a coherent meaning, and this is an extension of 19th century abstractions about labor which have if anything lost their slight purchase in real world conditions over the course of the present century. The manual worker with general skills hired out by the day for odd jobs at a negotiable wage is a fringe case. *Everybody else* is linked to a social network that dictates within broad bands terms of employment specific to their skills and background. The small actions that lend intuitive plausibility at the micro level to the concept of a market for fish ("Atlantic Salmon $5.99 special today!") are never observed in the so-called "market for labor."

Most economists seem to have forgotten that John Maynard Keynes quite powerfully demolished the supply curve for labor in the opening pages of the General Theory of Employment Interest and Money. Keynes showed that there was no reason to expect that, say, an excess of unemployment would drive down real wages. The remaining workers would still rationally resist reduction of their money wages, and even if this failed the subsequent fall of money wages would bring down prices, leaving real wages unaffected. Labor markets do not respond like fish markets to excess supply, because

wages are too big a part of total costs. The "second postulate" of the classical doctrine, the supply curve of labor, failed as a logical construct.

But, of course, *the non-existence of a viable supply curve implies that the market for labor itself is not a market in the meaningful sense of that term* (cf. Parguez, forthcoming). Without a supply curve, one has no market, and the "equilibrium" of wages and employment cannot be determined "there." One is forced to look outside the classical confines of the labor market to find the determination of employment and of wages. In other words, one needs to once again build a macroeconomic and specifically a Keynesian theory.

If the concept of an aggregate labor market and the powerful but misleading metaphor it embodies could be wiped at a stroke from the professional consciousness, what would be the result? Plainly, there would then be no reason to associate any particular value of the unemployment rate with pressure on wages in general, or on prices and inflation. The concepts of the natural rate of unemployment and NAIRU would then certainly collapse. Economists would be obliged to find ways of evaluating the evidence governing both inflation and unemployment without granting privileged status to the idea that the two are linked. The policy notion that controlling the reduction of unemployment is a sensible means of controlling inflation would also lose its power.

Employment policy might then be concerned with the work to be done: whether to match this or that person with this or that task. Inflation policy would be concerned with the management of particular elements of cost, including wages but not neglecting materials, rent and interest. Management of aggregate demand -- an undoubted force on non-wage prices -- could operate through channels with less effect on employment (a variable tax on rents and quasi-rents, for example). Since wages are a major element in costs, inflation policy would in particular be concerned with the existence, extent and management of specific institutional mechanisms of pattern bargaining, which transmit destabilizing pressures from one part of productive apparatus to another. These would come to be seen as among the prime forces differentiating between stable and unstable aggregate price-cost outcomes.

All of this would be an enormous intellectual improvement, for it would divert research from the ephemeral pursuit of abstract and elusive scalars into the analysis of a much more complex realm of data, such as already characterizes the more productive veins of research in labor and financial economics today. It would also instantly expand the scope of acceptable policy discussion. It

would turn many thousands of unemployed, now abandoned to fate, into reasonable candidates for re-employment on reasonable public or public/private projects, physical, intellectual and cultural, at reasonable terms. But for this to happen, it is evidently not enough just to raise doubts about the aggregate-labor-market theory of aggregate wages. For if wages are not determined in the labor market but rather in context- and institution-specific patterns, what exactly are these patterns and how are they are they to be made into legitimate objects of social inquiry?

The Job Structure

The Danish Prince missing from the *Hamlet* of much modern economic thinking is the job structure. Mesmerized perhaps by the magic words of "adjustment," "efficiency," and "equilibrium," economists actually tell themselves that a theory cannot be good unless it purges itself of any "rigidities," "institutions," and other context-specific or *ad hoc* considerations. Thus criteria of esthetic conformism come to rule. It is a profoundly biased mindset, and one which bears little resemblance to scientific practice.

What is the job structure? It is a historically, socially and politically specific set of status and pay relationships in the economy, within and between firms, within and across industries. I will simply assert here that a job structure always exists, and has to exist, in every society. Otherwise, relative pay would be wholly underdetermined -- market forces being insufficient to do the job of setting wage rates and job characteristics -- and chaos would prevail.

Job structures may be more or less flexible, and more or less stable at different moments of time. They are obviously not immune to pressures from markets. But they have the effect of distributing those pressures across the structures (like shock waves hitting a building). Occasionally a structure may collapse under pressure. But for the most part the effect of having structure is to slow down changes and to distribute them in ways which may not be predictable to those focused intently on market characteristics.

Relative Wages in Micro Theory

The standard textbook does contain a theory of relative wages. Demand for labor, undergraduates are told, is governed by the marginal productivity of labor -- by the inverse relationship between the amount of employment offered and *value of the output*

produced in the last hour worked. Technology is so arranged by firms that higher-valued workers will be hired first, and higher-valued jobs performed first -- anything else would violate canons of rationality underpinning the whole construct.

In principle this solves the differentiated-labor problem. We assume that the relevant grading, sorting and ordering are carried out, so that holding everyone to their predetermined "best" place the market can work as if it were like a fish market "at the margin." Why then do wages differ within the margin? Because jobs differ: hard and dangerous work must be compensated, human capital accumulation rewarded. In other words infra-marginal wage differentials are a matter of "labor rent:" special payment to scarce elements of human capital, or to artificial scarcities imposed by unions and other social forces.

But there are at least two fatal difficulties with this. The first is that the mechanism for determining marginal productivity in a differentiated job structure no more exists than does any meaningful market for marginal workers. There is no evidence at the micro level that firms make any effort to calculate marginal value. Nor is there any automatic mechanism to calculate it for them; natural selection does not work as many economists have long supposed to assure such a result. There is therefore no reason in the empirical world to accept that the marginal value of output actually does fall as employment increases.

Second, while the notion of labor rents is indeed plausible, it remains necessary for labor-market theory that the *non-rent* element of labor compensation be a significant fraction of the total wage. If all or most of wages are in fact compensation for the rental value of specific human capital, then the aggregative labor market simply dissolves. Segmentation rules.

Segmentation and the Job Structure

Even if we allow some pressure of labor demand to put up real wages at the margins of the labor market, extreme differentiation and segmentation may mean that there is not any mechanism that transmits this pressure to wages generally. A construction boom in my home town affects the employment and *maybe* (but don't bet on it) the wages of construction workers; it affects the value of my home; but it has no perceptible effect on my wage as a college professor. Therefore it cannot lead through me or others like me to any general pressure on costs and prices.

In this case, there can only be general pressure on costs and prices from specific excess demands for labor if there exists some

institutional mechanism for the lateral transmission of wage pressures. An example might be pattern bargaining that is itself linked to cyclically sensitive wages or to commodity price pressures. Or an economy-wide indexation scheme.

Technology, Trade and the Patterns of Wages

In practice the wage structure has been under intensive scrutiny lately. And the empirical literature on changes in relative wages in the United States seems to exist in a different discipline from that concerned with inflation, unemployment and the labor market. It is as if economists have persuaded themselves that one set of forces and influences (namely, aggregate demand and supply) governs how many people will enjoy employment, a second set (monetary policy) governs inflation, and an entirely different set (accumulation of skills) governs the disposition of relative pay.

There now exist many studies that attempt to explain the dramatic rise in the inequality of before-tax wage and salary incomes over the last two decades. A common conclusion of many, endorsed in derivative works by Reich (1992), Krugman (1994) and the Council of Economic Advisers (1994, 1995), is that changes in technology have generated a vast change in the distribution of real returns, raising them for those with advanced skills and cutting them for most everyone else.

In particular, the vast spread of computers into the culture has captured the attention and imagination of these scholars, and created in their minds and in the wider community the suspicion that a new apartheid has come into existence, between the technological haves and technological have-nots, between those who are electronically literate and those who are not. This same idea has also spread to the aberrant quarters of the political culture, where it surfaces in Charles Murray's notions about an IQ elite and Newt Gingrich's proposals to subsidize laptops for the poor.

Thus the ancient parable in modern form. A new technology (exogenous, as always!) has appeared. It opens great pathways to productivity, but presents at the same time new hurdles. Skills are required before the new machines can be mastered. Those who master the skills are rewarded; the fruits of the new productivity gains are theirs. Those who fail fall by the wayside.

The parable is appealing, and not just for analytical reasons. It contains at least four elements that are actually reassuring. First, it reaffirms that a disconcerting present event is nevertheless within the general context of social progress. Computerization and the productivity gains it brings are doubtless

good for society overall (who can doubt it?). Second, it places the onus for overcoming the new hurdles of computer-literacy squarely on the individual, allowing only a modest and thoroughly conventional role for government assistance in some cases, and leaving the *ex post* distribution of incomes unchallenged. Third, it leaves the implication that the disconcerting problem, the rise in inequality, is itself a transitional phase, for when computer skills are sufficiently widespread labor market mechanisms assure that the skill differential must fall. Fourth, because the parable is told within the framework of a standard supply-and-demand model of the labor market, it leaves no reason to suppose that any preconception of macroeconomic analysis would be disturbed. All that is changing is relative pay -- not employment, not the susceptibility to inflation.

But is the parable true? The evidence on which it rests is little more than an observed association at the level of individual workers between increased use of computers (and other supposedly advanced equipment, including curiously copying machines) and higher rates of pay. This is not dispositive. It is surely possible that some other effect, such as a shift of profitabilities across branches of industry, is jointly responsible for rising computerization and rising pay. Empirical studies so far make little serious effort to dismiss this possibility. (For a critique of Bound and Johnson on this point, see Galbraith and Calmon 1994).

The parable is essentially an argument about the demand for unskilled labor. If it were true, there are some things one would expect to observe. First, employment would be expected to have declined sharply among uncomputerized service workers in such areas as banking and insurance where computerization is rife. Has it? I know of no study showing such employment effects. The computers have on this evidence contributed to altering the wage structure, but nothing to productivity on average. That would be strange if there really did exist a labor market.

Second, one would expect the effects of computers to be uniform inside the country and out, and across countries irrespective of national income level. What is true for the United States and Europe ought to be equally true for, say, Brazil or China. But this is not the case. Indeed, when one compares the advanced to the developing regions, a dramatic asymmetry of effect appears. Whereas, in the U.S. and Europe the relative wage advantage has flowed to those working in the advanced sectors, while the relative position of the semi-skilled worker has fallen, in the LDCs it is semiskilled wages that have risen relative to other levels of skill. (Wood, 1994)

This asymmetry is flatly inconsistent with a technology-driven, labor-demand model of wage change. But it is consistent with a model of North-South labor substitution. What then remains is to explain by what channel that substitution transmits pressures onto American wages.

The argument that trade has not affected the wage structure in the United States rests on two bulwarks: a 1992 AER lead article by Bound and Johnson and a 1993 Brookings Paper by Lawrence and Slaughter. Both have since been strongly criticized though they remain influential.

The Bound and Johnson paper rests on a bit of negative econometrics -- a failure to find the pressure of trade on employment is translated into the absence of a trade effect on wages. Wood (1994) however showed that the Bound/Johnson calculations depended on their use of Northern labor coefficients for industrial categories most vulnerable to migration to the South. The problem with this is that those branches or elements of the same industries which actually migrated have much higher labor coefficients, and so the effect of shifting employment due to trade is much much higher -- ten times higher in Wood's estimate -- than Bound and Johnson allow for. Wood then makes a pair of additional calculations that raise the effect of North-South trade on the demand for unskilled labor by a further factor of four, so that in the end the Bound-Johnson estimate of a 0.5% contribution of trade to declining unskilled labor demand is corrected to a 20% contribution -- accounting for nearly all of it. Here, of course, the disappearing-job effects that one has difficulty finding in the pink-collar trades are conspicuous by their presence.

The Lawrence-Slaughter paper employs a series of calculations whose general validity has been sharply challenged in the same venue (Sachs and Shatz, 1994). However the main issue is whether there exists any channel whereby the pressure of rising imports can actually be felt in the American labor market. If imports sell at the same price as home goods, how can home wages be depressed by import competition? Lawrence and Slaughter reply that they cannot be, pointing to the fact that the home prices of imported goods do not in fact appear to decline as trade expands. Rather, it is the world prices of exported American goods that have declined most sharply, a fact that can explain the downward pressure on average real wages (since the price of exports has fallen relative to the price of imports and since exportables tend to be capital goods which do not enter into the consumption basket as importables do) but not the rise in inequality.

The difficulty in principle with this argument is that it assumes away all channels of effect on nominal wages that are not

transmitted through textbook market mechanisms. Lateral linkages in the wage-bargain are simply ruled out *a priori*. Thus effects on relative wages which may well be due to the pressure of competition from low-wage suppliers of comparable goods or a rise in the real exchange rate -- the threat mechanisms in the bargaining game -- are invisible to the model, and must be attributed to something else. As elsewhere in economics (notably, growth theory), technology takes the fall, and the subject spins off yet again into explaining the inexplicable by the unmeasured.

The Structural Approach

A structural approach to relative wage determination starts from the proposition that there exists no single solution given by patterns of demand and supply to the labor-pricing problem. Once the possibility of multiple solutions is admitted, then the choice between possibilities becomes, very quickly, a matter of historical developments and social relations. If "market forces" *per se* do not dictate exact outcomes they can at best act as influences within a social matrix.

In other work, Paulo Calmon and I (1994) have outlined a set of procedures for dissecting the social structure and for identifying its largest and most prominent groupings. Our groupings are preeminently industrial and policy-related. We show, for example, the rise and decline of labor power in the heavy-industry sectors (autos, construction equipment); the steady rise and relative immunity of wages in advanced technology industries protected or supported by government policies (aerospace, chemicals, agriculture); the collapsing position of more weakly-organized workers in sectors exposed to international trade (light industry, apparel). Our procedures are quite general and can be used with other types of data, e.g. Calmon's 1993 application of the same techniques to the Brazilian social structure using expenditure data from the Brazilian government budget.

The effect of this work is to focus attention on *power groupings* (and membership therein), and far, far away from the economist's typical preoccupation with rates of return to individual acquisition of skill. It is to identify a matrix of quasi-political relationships, a job structure, whose elements change only slowly over time. And it is to illustrate, as we do in these papers, the overwhelming importance of macroeconomic policies and events for the differential performance of groups situated differently -- supported differently, protected differently -- in the world economy.

In our work, Calmon and I identified six major industrial groups in the American job structure: an advanced group with many associated members whose position was protected by government policy (notably, trade protection); a heavy-industry group whose fate varied with the auto contract; a light-industrial group under strong pressure from imports; textiles in transition; garment-making in deep competitive trouble, and a group in the middle. We found a number of important idiosyncratic cases -- steel, computers -- whose wage paths were subject to special influences. Job structures are complex. But through them, we are able to make a far stronger case for the effect of trade on wages than emerges from analyses that ignore structural relationships in the data.

Perhaps most notably for present purposes, our analysis of the patterns of change of wages in services showed that there appear to be linkages between service wages and what is paid in associated manufacturing sectors. The path of wages in shoe stores resembles that in leather manufacture more than it resembles the path of wages in grocery stores, which in turn resembles the path of wages in the breweries and bakeries. This sort of finding increases confidence in the importance of a job structure, since predictions based on a labor market analysis would surely predict the reverse.

Without going into further details, we can ask, what is the meaning of a "job structure" for macroeconomic analysis? The first and most important answer is that it replaces the construct of an aggregative labor market. If most wage relations are determined laterally -- by reference to comparison units within the job structure -- then skill acquisition is a matter of credentialing for membership in the group, and not essentially a matter of productivity or productivity-related wage enhancement per se. The question of the necessity and appropriateness of specific education and training for specific tasks may then be raised: are these investments really productivity-enhancing, or merely a way of rationing slots? And also, more fundamentally still, the issue of the appropriate differentials between groups returns to the political context. What should garment workers be paid, relative to auto workers (or lawyers)? If this is not a market question -- which given the huge productivity-adjusted differentials across markets and countries within each of these industries it cannot be -- then it is and must be a political question and one that should be faced more or less squarely.

The structural approach to relative wages is not new. The older generation of labor economists in the U.S., led by John Dunlop espoused it and studied the wage structure. So did trade unions establishing coordinated or solidaristic wage bargains in Japan and Europe in the postwar period -- bargains which obviously did not impair macroeconomic performance. And in Latin America in

the 1980s, national approaches to the wage bargain have been a feature of every stabilization effort, notably the comparatively successful *Pacto de Solidaridad* in Mexico, which held things together until they were blown apart by the debt strategy that led to the PRI election victory in 1994 and the peso crisis immediately after.

We come then to the question of policy should be organized if structure matters. It is not an easy question, and one which, coming at the end of an already longish essay, demands more space than it will get.

Liberals Stuck on the Supply Side

At the very least, New Keynesian acceptance of the New Classical theoretical structure reduces macroeconomic policy to the fringe role, that of large-scale intervention only in deep and lasting recessions. In all other circumstances, the macro authorities are warned off -- as was President Clinton himself during his brief Keynesian phase in early 1993. Perhaps the economy will speed up on its own, perhaps a stimulus will be excessive, perhaps the demons of inflation will be prematurely unleashed.

What then can liberals do? The actual approach of the Clinton administration illustrates. Liberals can favor labor training, education, adjustment assistance and other programs that help workers move from one job to the next. They can support public investments in infrastructure, on the ground that these assist in the international competitiveness of the economy. They can support a combination of research and development assistance to advanced enterprises, alongside efforts to open foreign markets to American products, that help shore up the position of American companies in the world. If they are feeling brave, they can also support a higher minimum wage.

All of these are supply side measures (except the last, which is a direct intervention in the labor market). Their purpose is to improve the long-term competitive performance of the American economy, on the thought that a more productive economy will generate higher average living standards. The further thought, that these higher averages will 'trickle down' to low-paid production workers, is left as an assumption.

We can all agree, I suppose, that expenditures on education,

training, research, development and infrastructure are generally good things. Unfortunately for liberals, however -- and here I choose my words with precision -- *there is little direct evidence that they help the measured performance of the economy in any definite way. The belief that they will do so is essentially an act of blind faith, often asserted but with remarkably little persuasive supporting documentation.*

Education & Training

From an economic standpoint the educational system of the United States, taking public and private efforts together, is much more successful than its many detractors admit. We attempt, spend, and also achieve a great deal -- both on behalf of the strongest and the most disadvantaged students. The system is unquestionably deficient in important respects. It includes large public school systems where resources are starved and education is said not to occur. This is a social and political tragedy and a cultural crime. These failings have much to do with the persistence of race-based differences in the earnings and opportunity structure.

But do they matter, much, for the *average* level of economic performance? Are American schools a drag on productivity? *That* question turns on whether there is a shortage of *skilled* labor in the present-day United States. There is no such shortage! To the contrary, our economy is full of highly educated and skilled people. It is short of *jobs* for those people, as every college counselor and every coordinator of a training program knows. This cannot be surprising: we have not for decades created large numbers of truly good jobs. (And in a country where business interests have such a huge influence over education policy as here, it would be bizarre if high schools, colleges and universities were undersupplying business markets.)

Some argue that at higher levels of employment even larger investments in education and training would be needed, to remedy skill shortages that might emerge. But even this is doubtful. A better job situation would pull existing students out of schools and colleges and into the labor force, reducing the numbers who stay in school to mark time. It would also encourage firms to put more of their own resources into the training they really need. Full employment would improve conditions in the academy, increasing resources and making a better match between the skills students seek and the jobs that exist. But there is no compelling reason to think that either more or less education-time would be needed: the effects, in principle, cut in both directions.

Research and Development

Certainly government R&D and export assistance helps American companies penetrate foreign markets, increase market share, improve technological competitiveness --- and pay higher wages. But here there is another problem. Who benefits from these policies? The number of workers who work directly in export-oriented, high-technology manufacturing sectors is small -- not over six million by a generous count. They are the primary beneficiaries and they are already comparatively well-paid -- at the top of the manufacturing wage ladder.

Workers and consumers *outside* the favored sectors benefit at most indirectly, for example from the multiplier effects of increased export earnings and from the spread of new technologies into products that consumers use. But this process also has losers -- the workers whose skills become obsolete and whose jobs disappear. Those who argue for technology and industrial policies often forget about this damage. And with no full employment policy, retraining for these workers is at best a placebo.

It is surely acceptable for liberals to form alliances with the captains of aerospace, communications and computers, with the John Youngs and John Sculleys as Clinton did in 1992, in order to gain power and achieve something else. There is surely a role in general terms for science and technology policy -- ultimately and all in all new technologies lead to a better life. But these do not and cannot bring full employment, nor do they bring about a fairer and more just social order. *To make science and technology policies into the centerpiece of a progressive agenda is absurd.*

Infrastructure

Public works expenditure is the historical cornerstone of liberal interventionism. Public works are the fastest, most direct way to put the unemployed to work. They have direct and multiplier effects on total employment. They have the side benefit that the works themselves remain useful for many decades after they are completed. They also represent, in political memory, the triumph of liberalism in the first New Deal.

But the liberal supply-siders make an entirely different claim for public works spending. Renaming it 'infrastructure,' (as I too have done on many occasions) they argue that it contributes in definite ways to the productivity of the private business economy. The jobs created directly, by doing the work, are immaterial to this argument. What matters is how the finished work contributes indirectly to cost reduction and to output in the private sector.

The evidence for such effects is, alas, regrettably thin. Almost all of it rests on aggregative statistical relationships, essentially on the bare fact that average measured productivity growth declined during the same years that saw cutbacks in gross public investment. Almost none rests on detailed analysis of the contribution of particular projects to business efficiency. That kind of evidence (a high-tech boom in Appalachia following the Great Society's road programs there, for instance) would be much more persuasive. But it doesn't exist.

And this should not be surprising. Export-oriented American manufacturing enterprise is not seriously hamstrung by infrastructure problems. Roads, rail, electricity and water service are adequate to their needs. Boeing is not short of runways from which to launch its planes, nor is Silicon Valley suffering brownouts. Phones work well in this country! Pollution costs do not necessarily fall on private business producers, but on their neighbors. Indeed, given a choice, many would prefer to pollute than to have the government pay for clean-up projects.

Infrastructure and associated environmental spending is undoubtedly of enormous need and value. But to whom? To the American citizen, as an element in the standard of living. Roads, water, sewer, power and communications systems are all durable public consumption goods. It is consumers, and workers, not in the main business shippers, who hit the potholes on the road to work. It is people who breathe the air, drink the water, and boat on the rivers and lakes. All this has little to do with international competitiveness, which is very sad, but true. (This explains why business interests are not demanding higher infrastructure spending and why these items were the first to fail in the face of Republican opposition in the Congress.)

We are left with the unpleasant conclusion that the liberal mainstream has been, to a degree, fooling itself. Education, training, and infrastructure are very important, but not for the competitiveness and productivity reasons usually cited. Business doesn't need them, they don't enjoy business support, and it is wishful to argue to business that they should.

As political liberals, we who care about education, infrastructure and the environment must find, instead, a language in which to defend such programs for their inherent worth, for the sake of the people themselves. We must find ways to organize the people around them for the vital direct benefits they bring (as indeed the environmental, consumer protection and health and safety movements have traditionally done). Otherwise they will continue to lose the budget battles.

And if we want full employment, we need something else. A high growth, full employment macroeconomics, for example. Nothing less stands the slightest chance of working.

Macro Policy in a Structuralist World

The essential *macro* question in a structuralist theory concerns, not employment or inflation, but the structure itself. What should be the distribution of incomes? How much range, between the botton and the top? Between high risk/high return and low risk/low return? Between capital and labor? Between skill and not?

These are political issues and have to be resolved by political means. Collective bargaining is one such means. Income and wealth taxation is another. Minimum wages are a third. If these are not available, something else has to be devised. Leaving it all to the "market" is, of course, possible. Market outcomes and their associated mythology have a great advantage: they induce introspection (worker, blame thyself!) and reduce social conflict. But the structuralist perspective tells you that you gain no efficiency thereby, and are sure to generate more misery than you could have.

A second key question concerns *adjustment* of the wage structure. By what principle should real wages change? Surely, on average, at the rate of productivity growth. But should productivity gains be distributed to the individual, to the industry, or to the economy as a whole?

A structuralist perspective points to a general preference for structural stability, once (if!) a reasonable consensus about appropriate differentials has been reached. It is probably better to distribute productivity gains as broadly as possible, to make them social rather than industrial or individual. It is clearly better to avoid arbitrary perturbations to the structure, such as arise when there are shocks to the general price level and some groups are better indexed than others. A common indexation scheme, preferably discretionary and linked in practice to what the economy can afford rather than to any statistical indicator, could prove a useful tool in keeping the structure stable. I wrote a book about this seven years ago (Galbraith, 1989); to no-one's surprise it didn't sell.

Third, what of employment? If structure stabilizes relative wages and neutralizes wage pressures percolating backward from growth sectors, there is no longer any inflationary labor market barrier to full employment. The reserve army of the unemployed

loses its function, both because the wage structure remains stable without it, and because the stabilization of the income structure removes the incentive for employers to maintain a climate of fear. The issue is therefore not, how many jobs? but rather, who to employ and on what (and for how many hours)? The issue of who to train and for which function may have some importance, but much experience holds that people train themselves when they have an incentive (such as good conditions and decent pay) to stay on the job. At present the economy is short of jobs, not of skills.

Stabilization of investment demand is then the central macroeconomic issues related to employment. Countercyclical public investment is a possibilty, using revolving funds as a finance facility for states and localities. The Swedes used to accomplish the trick with private business through tax policy, allowing tax-free deposits of profits into blocked accounts during booms, to be released for tax-free investment in slumps. This seems more reasonable than countercyclical profits taxes, which might to the stabilizing trick at investment levels too low to assure full employment. Progressive taxation of distributions and realized capital gains -- a consumption tax aimed at the rich -- seems worth exploring but may lack the requisite countercyclical element. Given ratchet effects and leakages to imports, countercyclical consumption boosters seem the wrong way to go.

Alongside stabilization of investment demand one has to think of technological renewal. It makes sense progressively to shut down the back end of the capital stock, for environmental, safety and competitive reasons. Properly designed regulation can help. At the same time, a flatter wage structure and bigger safety net would reduce the cost of job loss and the resistance from affected workers.

As for interest rates, low and stable has to be the watchword. Interest rates should lose their present macroeconomic function. They should serve instead to arbitrate the distribution of income between debtors and creditors, capital and entrepreneurship. They should therefore be stable and low. Real rates of return on money should be zero. And there is no reason why long-term rates of interest in real terms should exceed the long-term real growth rate of the economy. Indeed they should lie below this value, effecting a gradual redistribution of wealth away from the creditor and toward the debtor class and a long-term stabilization of household and company balance sheets. Speculation in fixed asset markets, an ancillary risk, should be heavily taxed.

If nominal wages rise in line with productivity, average prices will be stable outside of shocks to non-wage elements of cost. Commodity stockpiles could help curb the shocks. If debt

creation is well-regulated in the aggregate, there is no harm in relying on low nominal interest rates to keep the class structure in order. Difficulties in the debt structure can be weathered through a modest upward tilt in nominal prices and wages. As Congressman Henry B. Gonzalez has well said, zero inflation is for the graveyard.

Trade bears watching under structuralism. I am reluctant to impose barriers to trade, for technological reasons: too much structure, too little creative destruction, and you end up like the Soviet Union. On the other hand, industrial development strategies clearly matter. The more advanced your industries, the fewer production workers you need, the more service workers you can have, and the higher your standard of life relative to the world. (But equally, the more public-goods consumption you have, the fewer imports you need for a given living standard, and fewer exports you have to do.)

OK, it's a fantasy. But the point is that there is no good in thinking half-thoughts, or agreeing to half-measures from the outset. The liberal microeconomic supply-side can do some useful things -- or thought it could -- by getting a little money into education, training, infrastructure. But the point is to raise living standards, increase security and leisure, provide jobs that are worth having. And one cannot do that while the grand viziers of macroeconomic policy are left free to disrupt output and employment and to redistribute income from working people to the rich.

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Figure One

Unemployment and Inflation 1948-1994

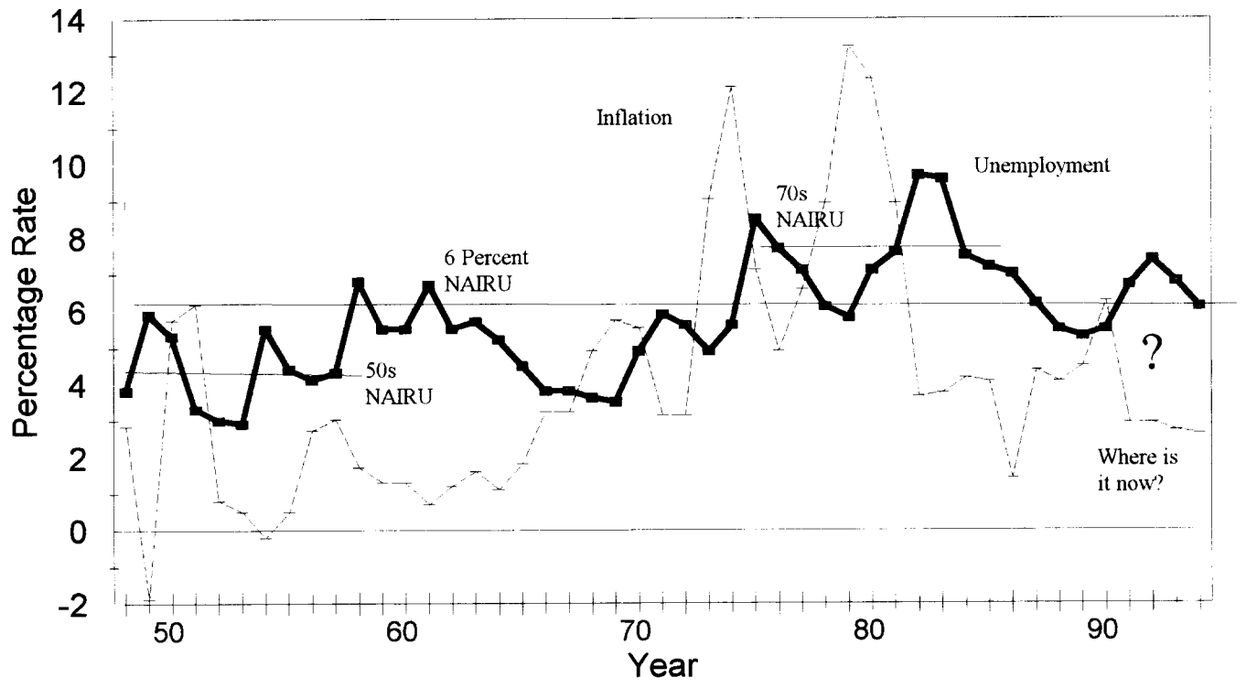


Figure Two

Inflation and Labor Costs 1948-1994

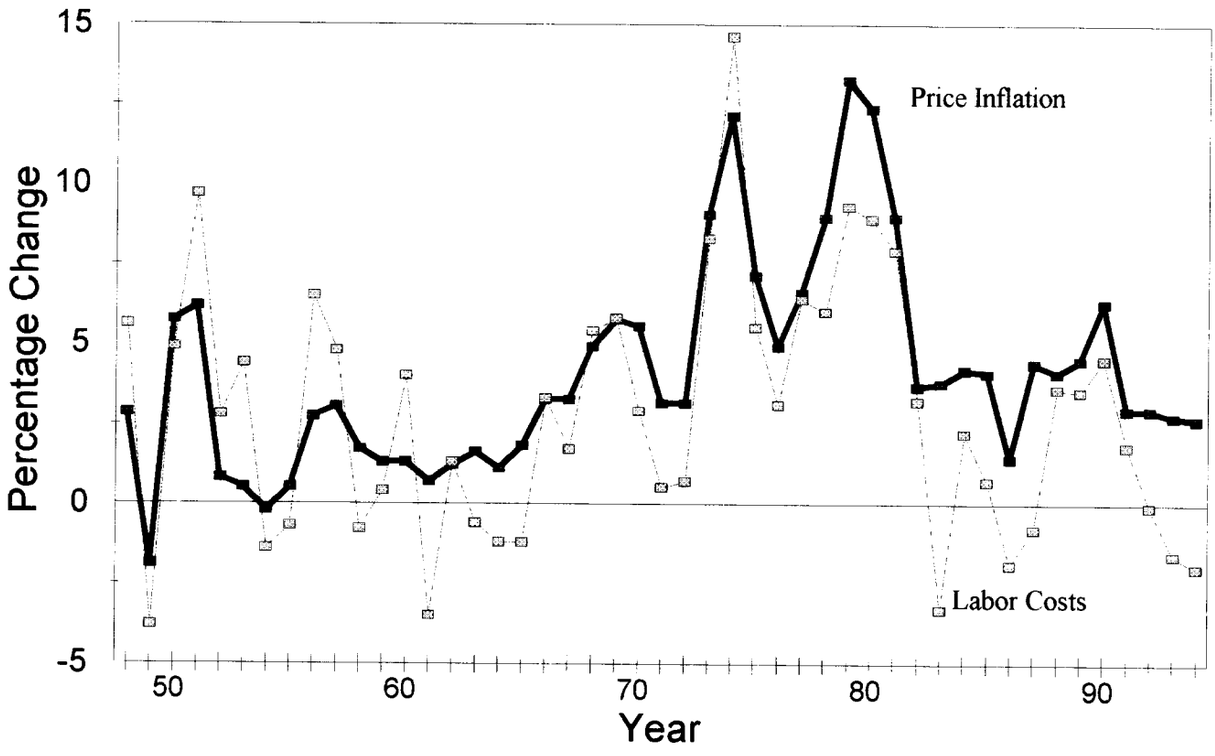


Figure Three

The Phillips Curve 1960-1994

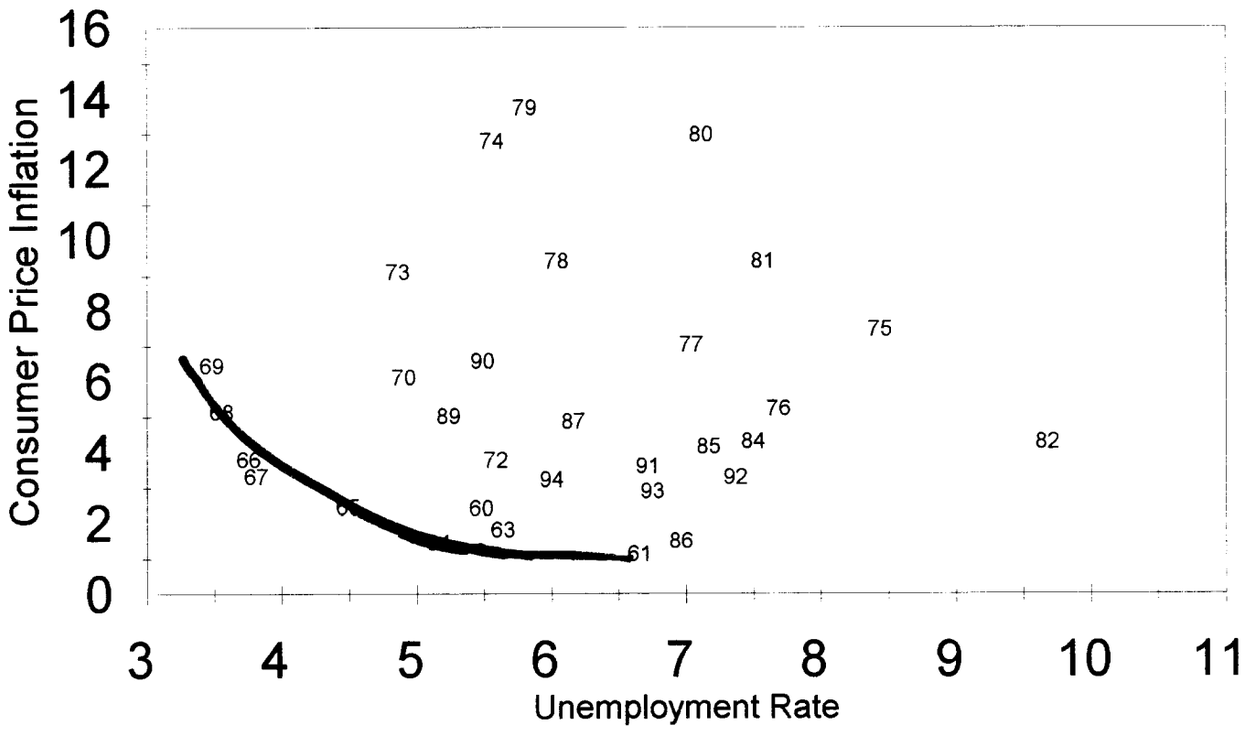
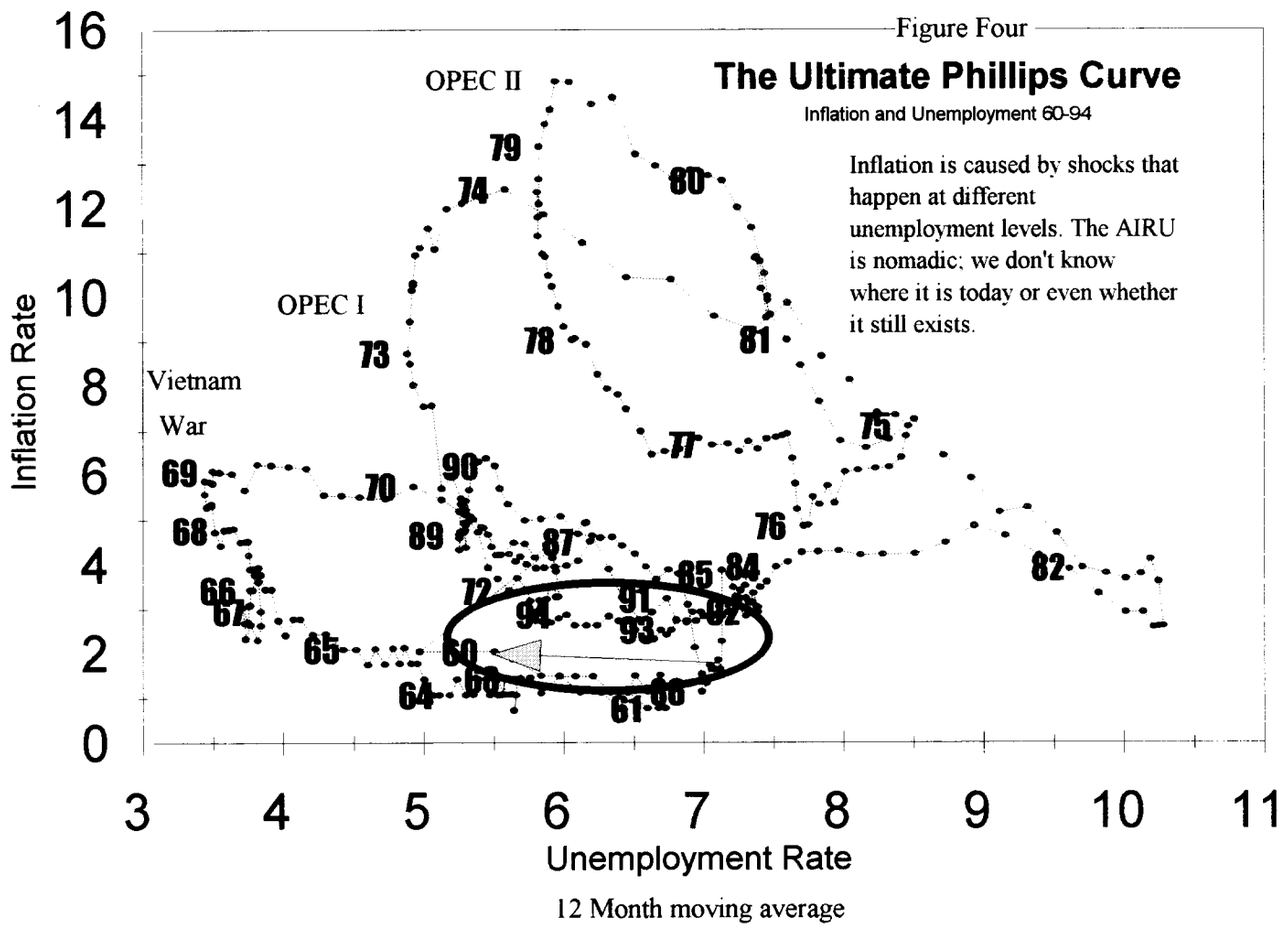


Figure Four

The Ultimate Phillips Curve

Inflation and Unemployment 60-94



12 Month moving average