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Author(s): Robert M. Solow
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On Theories of Unemployment

By ROBERT M. SOLOW*

There is a long-standing tension in economics between belief in the advantages of the market mechanism and awareness of its imperfections. Ever since Adam Smith, economists have been distinguished from lesser mortals by their understanding of and —I think one has to say—their admiration for the efficiency, anonymity, and subtlety of decentralized competitive markets as an instrument for the allocation of resources and the imputation of incomes. I think we all know this; for confirmation one can look at the results of a paper (James Kearl et al.) presented at the last annual meeting, reporting the responses of professional economists to a sort of survey of technical opinion. The propositions which generated the greatest degree of consensus were those asserting the advantages of free trade and flexible exchange rates, favoring cash transfers over those in kind, and noting the disadvantages of rent controls, interest rate ceilings, and minimum wage laws.

Views on these policy issues did not seem to represent mere conservative ideology: half of the respondents agreed and another 30 percent agreed "with provisions" that redistribution of income (presumably toward the poorest) is a legitimate function of government policy. The profession's reservations about rent control, interest rate ceilings, and minimum wage laws do not appear to reflect a rejection of the goals of those measures, but rather a feeling that nonprofessionals simply do not understand fully the consequences, often unexpected and undesired, of messing around with the market mechanism. Most of us are conscious of a conflict that arises in our minds and consciences because, while we think it is usually a mistake to fiddle the price system to achieve distributional goals, we realize that the public and the political process are perversely more willing to do that than to make the direct transfers we would prefer. If we oppose all distorting transfers, we end up opposing transfers altogether. Some of us seem to welcome the excuse, but most of us feel uncomfortable. I don't think there is any very good way to resolve that conflict in practice.

Simultaneously, however, there is an important current in economics that focuses on the flaws in the price system, the ways that real markets fail because they lack some of the characteristics that make idealized markets so attractive. I think that outsiders, who tend to see economists as simple-minded marketeers, would be astonished to learn how much of the history of modern economic analysis can be written in terms of the study of the sources of market failure. The catalog runs from natural and artificial monopoly, to monopolistic competition, to the importance of public goods and externalities of many other kinds, to—most recently—a variety of problems connected with the inadequate, imperfect, or asymmetric transmission of information and with the likelihood that there will simply be no markets for some of the relevant goods and services.

Even the vocabulary can be revealing. Market "imperfection" suggests a minor blemish of the sort that can make the purchase of "irregular" socks a bargain. Market "failure" sounds like something more serious. To take a more subtle example, I mentioned that one kind of flaw in the system can be the absence of certain markets. The common generic term for the reason why markets are missing is "transaction costs." That sounds rather minor, the sort of thing that might go away in due course as accounting and information

*Presidential address delivered at the ninety-second meeting of the American Economic Association, December 29, 1979, Atlanta, Georgia. Like most people, I get by with a little help from my friends, in this case especially Paul Samuelson, George Akerlof, Arnold Kling, and James Tobin.

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processing get cheaper. But some of the cases of missing markets really go much deeper. The fact that distant future generations can not participate directly in the markets for nonrenewable resources will not be remedied by improvements in communication. Nor are the residents of densely populated areas ever likely to be able to dicker effectively with the dozens or hundreds of sources of barely traceable pollutants whose health effects, if any, cumulate over many years.

There is a large element of Rohrschach test in the way each of us responds to this tension. Some of us see the Smithian virtues as a needle in a haystack, as an island of measure zero in a sea of imperfections. Others see all the potential sources of market failure as so many fleas on the thick hide of an ox, requiring only an occasional flick of the tail to be brushed away. A hopeless eclectic without any strength of character, like me, has a terrible time of it. If I may invoke the names of two of my most awesome predecessors as President of this Association, I need only listen to Milton Friedman talk for a minute and my mind floods with thoughts of increasing returns to scale, oligopolistic interdependence, consumer ignorance, environmental pollution, intergenerational inequity, and on and on. There is almost no cure for it, except to listen for a minute to John Kenneth Galbraith, in which case all I can think of are the discipline of competition, the large number of substitutes for any commodity, the stupidities of regulation, the Pareto optimality of Walrasian equilibrium, the importance of decentralizing decision making to where the knowledge is, and on and on. Sometimes I think it is only my weakness of character that keeps me from making obvious errors.

The critics of the mainstream tradition are mistaken when they attribute to it a built-in Panglossian attitude toward the capitalist economy. The tradition has provided both the foundations for a belief in the efficiency of market allocations and the tools for a powerful critique. Economic analysis by itself has no way of choosing between them; and the immediate prospects for an empirically based model of a whole economy, capable of measuring our actual "distance" from the contract curve, are mighty slim. The missing link has to be a matter of judgment—the Rohrschach test I spoke of a minute ago. For every Dr. Pangloss who makes the ink blot out to be of surpassing beauty, give or take a few minor deviations—the second-best of all possible worlds, you might say—there is a Candide to whom it looks a lot like an ink blot. Maybe there are more Panglosses than Candides. But that was true in Voltaire's time too—just before the French Revolution, by the way—and has more to do with the state of society than with the nature of economics.

The tension between market efficiency and market failure is especially pointed in discussions of the working of the labor market, for obvious reasons. The labor market connects quickly with everything else in the economy and its performance matters more directly for most people than that of any other market. Moreover, the labor market's own special pathology, unemployment, is particularly visible, particularly unsettling, and particularly frustrating. The fuse leading from theory to policy in this field is short, and has been known to produce both heat and light throughout much of the history of economics.

Contemporary macro-economic theory, though apparently full of technical novelties, has revived many of the old questions in only slightly different form. One of the points I want to make is that underneath the theoretical innovations—some of which are interesting and important—the basic controversial issues that come to the surface are the same ones that occupied earlier literature. The most important among them is really the old tension between market efficiency and market failure. Should one think of the labor market as mostly clearing, or at worst in the process of quick return to market-clearing equilibrium? Or should one think of it as mostly in disequilibrium, with transactions habitually taking place at non-market-clearing wages? In that case presumably the wage structure is either not receiving any strong signals to make it

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change in the right direction or is not responding to the signals it receives. My own belief in this case lies with the market-failure side. That is to say, I believe that what looks like involuntary unemployment is involuntary unemployment.

Of course that conclusion only leads to another question. If the labor market often fails to clear, we had better figure out why. There is no shortage of candidate hypotheses. Here I think it is worthwhile to insist on a commonplace: although it is natural for academic people to seek a single weighty Answer to a weighty Question, if only because it is so satisfying to find one, it is quite likely that many of the candidate hypotheses are true, each contributing a little to the explanation of labor-market failure. Now the second general point I want to make is one that I am surprised to hear myself making. While I find several of the candidate hypotheses entirely believable, I am inclined to emphasize some that might be described as noneconomic. More precisely, I suspect that the labor market is a little different from other markets, in the sense that the objectives of the participants are not always the ones we normally impute to economic agents, and some of the constraints by which they feel themselves bound are not always the conventional constraints. In other words, I think that among the reasons why market-clearing wage rates do not establish themselves easily and adjust quickly to changing conditions are some that could be described as social conventions, or principles of appropriate behavior, whose source is not entirely individualistic.

I said that I am a little surprised at myself. That is because I am generally stodgy about assumptions, and like to stay as close to the mainstream framework as the problem at hand will allow. In any case, I think that the unconventional elements in what I have to say are only part of the story. And I assure you that I am not about to peddle amateur sociology to a captive audience. All I do mean to suggest is that we may predispose ourselves to misunderstand important aspects of unemployment if we insist on modelling the buying and selling of labor within a set of background assumptions whose main merit is that they are very well adapted to models of the buying and selling of cloth. Far from advocating that we all practice sociology, I am pleasantly impressed at how much mileage you can get from the methods of conventional economic analysis if only you are willing to broaden the assumptions a little.

I

It might be interesting to have a history of the evolution of economic ideas about unemployment, and their relation both to the internal logic of the subject and to the parallel evolution of the institutions of the labor market. I am not sufficiently well read to provide that kind of survey. To make my point about the persistence of the market-efficiency market-failure tension, I took a short cut. I went back to reread Pigou's *Lapses from Full Employment*, a little book I remember having been assigned to read as a student just after the war. And that in turn sent me back to its parent book, Pigou's *Theory of Unemployment*. The Preface to *The Theory of Unemployment* is dated April 1933, after a decade of poor performance and relatively high unemployment in Great Britain, well into the Great Depression, and before the publication of the *General Theory*. The Preface to *Lapses from Full Employment* (another example of a revealing vocabulary) is dated November 1944, after five years of the war that put an end to the depression, and well after the appearance of the *General Theory*. That seemed like an interesting approach to the historical question, because current controversies in macro-economic theory are often described as a debate between "Keynesians" and others—"monetarists," "Classicals," or "equilibrium theorists" — and because Pigou, besides being a great economist, was in particular the embodiment of the Marshallian tradition, the leading figure in the "classical economics" that the Keynesian revolution was explicitly intended to overthrow.

Lapses makes interesting rereading. It emphasizes the money wage, whereas its prede-

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cessor was written almost entirely in terms of the real wage. The general macro-theoretic framework, in which the discussion of the labor market is embedded, clearly has an eye on Keynes. The underlying model could be *IS-LM* without doing much violence to the argument. There are little anachronisms: Pigou tends to think of the interest rate as being determined in the goods market (by Savings = Investment) and nominal income as being determined by the demand for money. Today we take simultaneity seriously, but the *General Theory* more or less speaks as if real output is determined in the goods market and the interest rate by liquidity preference. After what is to me a confusing description of a Keynesian low-level liquidity-trap equilibrium, Pigou invokes the Pigou effect to explain why the low level might not be as low as all that and then, characteristically, remarks that none of it is very important in practice anyway. All this is relevant here only as background for the treatment of the labor market.

Pigou says the obvious thing first, and I agree that it is the first thing to say: if there is "thorough-going competition" among workers, then the only possible equilibrium position is at full employment. That is little more than a definition of equilibrium. He is aware that he is taking a lot of dynamics for granted. Expectations of falling wages could perversely reduce the demand for labor; and he discusses the possibility that under some conditions, with the interest rate at its practical floor, nominal wage rates and prices may chase each other down and thus prevent the real-wage adjustment needed for an increase in employment. (This is where the Pigou effect makes its appearance, of course.)

It is what comes next that interests me. It is obvious to Pigou, writing in 1944, that the labor market does not behave as if workers were engaged in thorough-going competition for jobs. With the common sense that seems somehow to have escaped his modern day successors, he wonders why it does not. And he discusses three or four of the institutional factors that a reasonable person would mention even now as obstacles to the classical functioning of the labor market.

First of all, he realizes that the labor market is segmented. Not everyone in it is in competition with everyone else. I am not referring here to the obvious fact that abilities, experience, and skills differ, so that unemployed laborers can not compete for the jobs held by craftsmen. That fact of life merely reminds us that "labor" is not a well-defined homogeneous factor of production. Even within skill categories or occupational groups, however, workers have ties to localities, to industries, to special job classifications, even to individual employers. These ties can be broken, but not easily. It is interesting to me that even the *Theory of Unemployment* of 1933 devotes a lot of space to the analysis of a labor market in which there are many "centers of employment"—to use the neutral term chosen by Pigou to describe segmentation of the labor market—between which mobility is absent or slow. Of course he observes that even in a completely segmented labor market, if there is thorough-going competition within segments, full employment will be the rule, although there may be wage differentials between centers of employment for otherwise identical workers. I think that the fact of segmentation is very important, not only because it limits the scope of competition but because its pervasiveness suggests—though it can not prove—that habit and custom play a large role in labor market behavior. From the prominence that he gives it, I gather that Pigou might have agreed.

A second factor, which has been more often discussed, is trade unionism. Pigou does not have very much to say about collective bargaining, but what he says makes sense.

> Of course, these agencies in their decisions have regard to the general state of the demand for labour; they will have no wish to set wage rates so high that half the people of the country are thrown out of work. Nevertheless, there is reason to believe that they do not have regard to demand conditions in such degree as would be necessary to secure, as thorough-going competition would do, the establishment of full employment. [1945, p. 26]

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Later on in the book, Pigou makes an observation that is not explicitly connected with collective bargaining. He does connect it with "actual life" however, and it fits organized workers very well, and perhaps others besides:

> In periods of expansion employers might be willing to agree to substantial advances in wage rates if they were confident that, when prosperity ended, they would be able to cancel them. They know, however, that in fact this will not be easy, that elaborate processes will have to be gone through, and that their work-people will put up a strong rear-guard action.... In periods of depression wage-earners, for precisely similar reasons, hold out against wage reductions, which they might be ready to concede if it were not for the difficulty that they foresee in getting them cancelled when times improve.... A widespread desire for 'safety first' helps to make wage rates sticky.
> [1945, p. 48]

These casual remarks raise more questions than they answer about the determination of nominal wages by collective bargaining. The first excerpt can be taken as a redefinition of full employment when the labor market is not competitive; the second, however, advances an account of wage stickiness and is therefore on a different footing. It would help to explain the failure of the labor market to clear on any reasonable definition, and thus provide a connection between nominal demand and real output.

The third institutional factor mentioned by Pigou has also been the subject of much analysis, past and present: the provision of unemployment insurance. There are several channels by which the availability of unemployment compensation can add to the recorded amount of unemployment. The prolongation of search is only the most obvious. My own impression is that this is currently a significant factor. As an indication of the complexity of the issues, let me just mention here that some recent research by my colleagues Peter Diamond and Eric Maskin suggests the possibility that in some environments search activity conveys a positive externality. So the optimal search strategy for the individual might provide less than the socially optimal amount of search, and unemployment compensation could be regarded as a corrective subsidy. This is a neat twist on the theme of the counterpoint between market efficiency and market failure. In any case, it can hardly be doubted that the unemployment compensation system is an important determinant of behavior on both sides of the labor market, and complicates even the definition of full employment.

The last comment of Pigou's that I want to cite is especially intriguing because it is so unlike the sort of thing that his present day successors keep saying. Already in the 1933 *Theory of Unemployment* he wrote: "...public opinion in a modern civilized State builds up for itself a rough estimate of what constitutes a reasonable living wage. This is derived half-consciously from a knowledge of the actual standards enjoyed by more or less 'average' workers.... Public opinion then enforces its view, failing success through social pressure, by the machinery of...legislation" (p. 255). A similar remark appears in *Lapses*. Such feelings about equity and fairness are obviously relevant to the setting of statutory minimum wages, and Pigou uses them that way. I think they also come into play as a deterrent to wage cutting in a slack labor market. Unemployed workers rarely try to displace their employed counterparts by offering to work for less; and it is even more surprising, as I have had occasion to point out in the past, that employers so rarely try to elicit wage cutting on the part of their laid-off employees, even in a buyer's market for labor. Several forces can be at work, but I think Occam's razor and common observation both suggest that a code of good behavior enforced by social pressure is one of them. Wouldn't you be surprised if you learned that someone of roughly your status in the profession, but teaching in a less desirable department, had written to your department chairman offering to teach your courses for less money? The fact that nominal wage rates did fall sharply during the early stages of the depression of the 1930's, and the fact that the Chrysler Corporation has been able

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to negotiate concessions from the UAW certainly show that wage rates are not completely rigid. But those very instances seem to me only to confirm the importance of social convention in less extreme circumstances. After all, people have been known to try to claw their way into a lifeboat who would never dream of cheating on a lift-line.

I think I have made the case that the most eminent representative of orthodox economics in the 1940's was fully aware of the many obstacles to "thorough-going competition" among workers, that is, of the many ways in which the labor market may "fail." In particular, one cannot under those circumstances expect the labor market always to clear. Pigou certainly drew that conclusion. He says, in the Preface to *Lapses*: "Professor Dennis Robertson...has warned me that the form of the book may suggest that I am in favour of attacking the problem of unemployment by manipulating wages rather than by manipulating demand. I wish, therefore, to say clearly that this is not so" (p. v).

Pigou clearly felt the tension between market efficiency and market failure. Nevertheless, he did not come down on the side of market failure, even after the 1930's. The very title of *Lapses from Full Employment* tells us that much. Evidently he concluded that the tendency of the capitalist economy to seek (and find) its full-employment equilibrium was strong enough so that departures from full employment could be regarded as mere episodes. Is that surprising? Well, to begin with, there is no accounting for Rohrschach tests. One person's ink blot is another person's work of art. But I think there is also something more systematic to be said.

In the *Theory of Unemployment*, Pigou gives an elaborate analysis of the short-run elasticity of demand for labor. He is very careful: he allows for the elasticity of supply of complementary raw materials; he allows for the (presumably very high) price elasticity of demand for exports; he discusses the effects of discounting future returns to labor. It is a masterly attempt to get a grip on orders of magnitude. It is all based on the presumption that the only possible starting point is the elasticity of the marginal-product-of-labor curve. Let me remind you that in the old standby, two-factor Cobb-Douglas case, the elasticity of demand for labor with respect to the real wage is the reciprocal of the share of capital. Everybody's back-of-the-envelope puts the capital share at $1/4$ and the elasticity of demand for labor at 4. This is not exactly the way Pigou proceeds, but he reaches the same conclusion: the initial estimate of the elasticity is "certain to be (numerically) much larger than -1 and may well amount to -5 or more." There follow some modifications, but the conclusion remains that in times of depression, the aggregate elasticity of demand for labor with respect to the real wage "cannot, on the least favourable assumption here suggested, be numerically less than -3 and may well be larger than -4" except perhaps in the very shortest run.

For practical purposes, one would want to know the elasticity of demand with respect to the nominal wage, taking account of the likelihood that prices will follow wages down, at least partially. (Obviously if product prices fall equiproportionally with wage rates, as Keynes thought might happen in unlucky circumstances, the real wage doesn't move at all and employment will not improve.)[1] The details of Pigou's calculations do not concern us, but his conclusion does: "...we may...not unreasonably put the elasticity of the money demand for labour in times of deep depression at not less numerically than -1.5."

If I could believe that, I too could believe that the labor market generally clears. To reduce the unemployment rate by 6 percentage points is to increase employment by about 6 percent, if we ignore for this purpose the side effects that go to make up Okun's Law. If that could be accomplished by a real-wage reduction of 2 percent, or even less, that is, by foregoing one year's normal productivity increase, than I could imagine that the labor market might easily

[1]Neither Pigou nor Keynes invoked Kaldor's notion that prices can be expected to fall faster than wages in a recession with the resulting rise in real wages providing the force for recovery from the demand side, through a distributional shift toward wage incomes which generate more spending per dollar than other incomes do.

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learn to adjust smoothly to fluctuations in aggregate demand. I could even imagine that workers might accept the necessary 4 percent reduction in nominal wages, in the expectation that half of it would be offset by lower prices. The trouble is that Pigou's demand elasticities are way too high. A recent econometric study by Kim Clark and Richard Freeman, based on quarterly data for *U.S.* manufacturing. 1950–76, puts the real-wage elasticity of demand for labor at about one-half, a whole order of magnitude smaller than Pigou's guess.[2] And the Clark-Freeman work is presented as revisionist, a counterweight to other estimates that are typically *lower*, averaging out at about 0.15 according to a survey by Daniel Hamermesh. To my mind, smooth wage adjustment seems intrinsically unlikely in a world with such a small demand elasticity and institutions like those sketched earlier. Nothing I read in the newspapers suggests to me that 6 percent of nonfrictional unemployment produces a threat adequate to set off a quick 12–15 percent fall in the real wage, or a drop in nominal wage rates twice as large. Sellers facing inelastic demands usually try to discourage price cutting; why should workers be different?

The modern classical school seems curiously remote from all this. When they try to explain how the equilibrium volume of employment can fluctuate as widely as actual employment does in business cycles, their only substitute for Pigou's high elasticity of demand is a high elasticity of supply (of labor) in the face of a perceived temporary opportunity for unusual gains, which in this case reflects wages that differ from average expected (discounted) future wages. In other words, People who give the vague impression of being unemployed are actually engaged in voluntary leisure. They are taking it now, planning to substitute extra work later, because they think, rightly or wrongly, that current real wages are unusually low compared with the present value of what the labor market will offer in the future. They may be responding to changes in real wages or to changes in the real interest rate.

It is astonishing that believers have made essentially no effort to verify this central hypothesis. I know of no convincing evidence in its favor,[3] and I am not sure why it has any claim to be taken seriously. It is hardly plausible on its face. Even if the workers in question have misread the future, they are merely mistaken, not confused or mystified about their own motives. It is thus legitimate to wonder why the unemployed do not feel themselves to be engaged in voluntary intertemporal substitution, and why they queue up in such numbers when legitimate jobs of their usual kind are offered during a recession.[4]

When they face the market-clearing issue at all, Pigou's successors take a rather abstract line. They regard it as inherently incredible that unexploited opportunities for beneficial trade should be anything but ephemeral—which means merely that they ignore all those human and institutional facts of which Pigou was aware. Or else they argue that one cannot believe in the failure of markets to clear without having an acceptable theory to explain why that happens. That is a remarkable precept when you think about it. I remember reading once that it is still not understood how the giraffe manages to pump an adequate blood supply all the way up to its head; but it is hard to imagine that anyone would therefore conclude that giraffes do not have long necks. At least not anyone who had ever been to a zoo. Besides, I think perfectly acceptable

[2]The Clark-Freeman estimates are based on quarterly data for aggregate *U.S.* manufacturing. Their difference from other work appears to rest on allowing wage changes to operate with a lag different from other factor prices. According to their results the lag of employment behind wage changes is quite short; it is complete in about two quarters.

[3]Just after writing those words, I received a working paper by Robert Hall which (a) concludes that the elasticity of supply of labor required to make the intertemporal-substitution hypothesis work is actually in the ballpark suggested by other facts, but (b) rejects the whole theory on other empirical grounds. I have done some further experimentation on Hall's data (with the help of Mr. Sunil Sanghvi) with results that cast doubt on the reliability of even the first conclusion. On reflection, I stand by the words in the text.

[4]I have tried to phrase that carefully. For some direct evidence, see "Jobs and Want Ads: A Look Behind the Evidence," *Fortune*, Nov. 20, 1978.

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theories can indeed by constructed, as soon as one gets away from foolishly restrictive and inappropriate assumptions.

II

That brings me to the second and last general point I had hoped to make. Suppose one chooses to accept the apparent evidence of one's senses and takes it for granted that the wage does not move flexibly to clear the labor market. By the way, my own inclination is to go further and claim that commodity prices are sticky too, at least downward. But it is the persistence of disequilibrium in the labor market that I want to emphasize. How can we account for it?

There is, as I mentioned at the beginning, a whole catalog of possible models of the labor market that will produce the right qualitative properties. Since I have surveyed this literature elsewhere, I will just list a half-dozen possibilities now, with the reminder that they are not mutually exclusive alternatives.

(1) There is Keynes's idea that case-by-case resistance to wage reductions is the only way that workers can defend traditional wage differentials in a decentralized labor market. The net result is to preserve the general wage level or its trend, but that is an unintended artifact.

(2) There is a complementary hypothesis about the behavior of employers that I have proposed myself: if employers know that aggressive wage cutting in a buyer's market may antagonize the remaining work force, hurt current productivity, and make it harder to recruit high-quality workers when the labor market tightens, they will be less inclined to push their short-run advantage.

(3) Pigou realized that widely held notions of fairness, enforced by social pressure or by legislation, might have to be part of any serious account of wage determination. George Akerlof has pursued this trail further, documented the prescription of codes of good behavior in manuals of personnel practice, and showed formally that such codes of behavior can be self-enforcing if people value their reputations in the community. Obviously there are no Emily Post manuals to consult as regards the behavior of laid-off workers, but you would certainly not be astonished to learn that self-esteem and the folkways discourage laid-off workers from undercutting the wages of their still-employed colleagues in an effort to displace them from jobs. Reservation wages presumably fall as the duration of unemployment lengthens; but my casual reading suggests that this pattern shows up more in a willingness to accept lower-paid sorts of jobs than in "thorough-going competition" for the standard job. The cost to the worker of this sort of behavior is diminished by the availability of unemployment insurance. It is worth remembering that the acceptance of lower-grade jobs is itself a form of unemployment.

(4) I need only touch on the Azariadis-Baily-Gordon implicit-contract theory, because it has been much discussed in the literature. Here wage stability is a vehicle by which less-risk-averse firms provide income insurance for more-risk-averse workers, presumably in exchange for a lower average wage.[5] It is now understood that the theory works well only when workers have some source of income other than wages, unemployment compensation for instance. This is not really a disadvantage in a world with well-developed unemployment insurance systems. In any case such implicit contracts do not themselves account for unemployment. Their effect is to reduce the average amount of unemployment below the level that would occur in a simple spot market. The theory belongs in my list because I suspect it does help to account for the habit of wage inertia and therefore the vulnerability of employment to unexpected fluctuations in aggregate demand.

(5) Wherever there is collective bargaining in our economy, the standard pattern,

[5]Unemployment generated by this mechanism is, in a sense, voluntary. Workers reveal a preference for steady wages over steady employment. But the aggregate welfare cost of the system can still be reduced by stabilization policies. This comment applies equally to the social customs described in the preceding paragraph of the text. One can ask why workers cling to such costly conventions. It is the job of sociology to answer that question. But it is the job of economics to point out that, whatever the reason, the narrowly economic cost of such conventions can be reduced by the stabilization of aggregate demand.

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with few exceptions, is that wage rates are specified in the contract, and the employer chooses the amount of employment. This is not exactly simple monopoly, because the union cannot set the wage schedule unilaterally. To the extent that it can, another source of wage stickiness can be identified. Under a reasonable assumption about what the union maximizes, it turns out that the only aspect of the demand for labor that has any effect on the monopoly wage is its elasticity. So if the demand curve for labor shifts down nearly isoelastically in a recession, the contractual wage will change little or not at all, and the full effect of the fall in demand will bear on employment. The amount of unemployment compensation available plays a role here too. (There is much more to be said along these lines, and Ian McDonald of the University of Melbourne and I hope to say it on another occasion.)

(6) As a last example, I recall Pigou's observation that wage changes may be seen by the parties as hard to reverse without a struggle whose duration and outcome cannot be foreseen. The resulting uncertainty causes employers to drag their feet when demand increases temporarily and workers to reciprocate when demand falls. The result is wage stickiness in the face of fluctuating employment.

Only what Veblen called trained incapacity could prevent anyone from seeing that some or all of these mechanisms do indeed capture real aspects of the modern capitalist economy. Assessing their combined significance quantitatively would be a very difficult task, and I do not pretend to be able to do that. We are all interpreting this ink blot together. Obviously I would not be giving this particular talk if I did not think that wage stickiness is a first-order factor in a reasonable theory of unemployment.

To make my position plausible, I want to try to summarize the sort of general characteristics that the labor market should have if the particular mechanisms that I have enumerated are to be important. By the way, I have no reason to believe that my list is anything like exhaustive; you may think of others. Simply to narrow the field, I have deliberately left out of account factors relating specifically to age, sex, race, and other characteristics that normally form the basis for discussions of structural unemployment as distinct from cyclical unemployment.

The sort of labor market I have in mind is segmented. It often makes sense to think of an employer or definable group of employers as facing its own labor pool. Some members of the labor pool may be unemployed, but still belong to it. Although transportation, information, and transaction costs are possible sources of segmentation, they need not be among the most important. The buildup of firm-specific or industry-specific human capital may be more fundamental, and equally a kind of mutual knowing-what-to-expect that gives both parties in the labor market a stake, a rent, in the durability of the relationship. This point is close to the distinction between auction markets and customer markets made by Arthur Okun in a different context. The labor market, at least the "primary" labor market, is a customer market; this may be one of the important facts that differentiates the primary from the secondary labor market.

A second general characteristic is the availability of some nontrivial source of nonemployment income. The obvious one is unemployment compensation, but I imagine that fringe activity ranging from hustling to home maintenance can function in much the same way. I suppose in some societies the possibility of returning temporarily to farming is now as important as it once was here. The presence of a second earner in the family can make an obvious difference. One consequence is that it becomes easier to maintain a labor pool in the presence of fluctuating employment. In addition, as I mentioned a few moments ago, several of the specific sticky-wage mechanisms in my catalog depend for their operation on this characteristic.

Third, the stability of the labor pool makes it possible for social conventions to assume some importance. There is a difference between a long-term relationship and a one-night stand, and acceptable behavior in one context may be unacceptable in the other. Presumably most conventions are adaptive, not arbitrary, but adaptiveness

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may have to be interpreted broadly, so as to include pecuniary advantage but not be limited by it. Critics who deride the notion of "economic man" have a point, but usually the wrong point. Economic man is a social, not a psychological, category. There are activities in our culture in which it is socially acceptable and expected that individual pecuniary self-interest will be the overriding decision criterion: choosing a portfolio of securities, for example.[6] There are others in which it is not: choosing a mate, for example.[7] The labor market is more complicated than either, of course, and contains elements of both. Perhaps in nineteenth-century Manchester labor was bought and sold by "thorough-going competition" but I think that is unlikely to be a good approximation to contemporary wage setting. In particular, as I have emphasized, there is nothing in the data or in common observation to make you believe that moderate excess supply will evoke aggressive wage cutting on either side of the labor market.

III

I draw two conclusions from this whole train of thought, one about economics and the other about the economy.

About economics: it need not follow that we old dogs have to learn a lot of new tricks. It still seems reasonable to presume that agents do the best they can, subject to whatever constraints they perceive. But in some contexts the traditional formulations of the objective function and constraints may be inappropriate. In the labor market, the participants are firms and groups of firms on one side, and individual workers, organized trade unions, and informally organized labor pools on the other. Grant me that all feel constrained, to some nontrivial degree, by social customs that have to do with the wage and wage-setting procedures. The result is that factor prices turn up in our equations in unfamiliar ways. Let me just mention a few examples from my earlier list of hypotheses. If Keynes was right about the conventional significance of relative wages, then ratios of wage rates appear in the objective functions on the labor side. If the current or future performance of workers depends on their feelings that wage levels are fair, then wage rates appear in the production functions constraining firms. If the individual worker's utility function depends quite conventionally on current income, then the collective objective function of a labor pool of identical workers might reasonably be a weighted average of the utility of the wage and the utility achievable when unemployed, with weights equal to the employment and unemployment fractions. This objective function contains both wage and volume of employment as arguments; and it has the interesting property that the marginal rate of substitution between wage rate and employment can depend very sensitively on the size of the unemployment insurance benefit. Constrained maximization and partial or complete reconciliation in the market can still be the bread and butter of the macro theorist. Spread with more palatable behavior assumptions, they may make a tastier sandwich, and stick to the ribs.

About the economy: if the labor market is often not in equilibrium, if wages are often sticky, if they respond to nontraditional signals, then there is a role for macro policy and a good chance that it will be effective. Equilibrium theories that conclude the opposite may conceivably turn out to have the right answer, but they simply assume what they purport to prove. It is not my argument that standard textbook policy prescriptions are bound to be right. That has to be worked out case by case. All I do claim is that a reasonable theory of economic policy ought to be based on a reasonable theory of economic life.

[6]The emotion aroused by the case of South Africa strikes me as one of those extreme exceptions that proves the rule.

[7]In Gary Becker's defense, I should point out that he does not assume cash income to be the decisive motive in courtship.

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