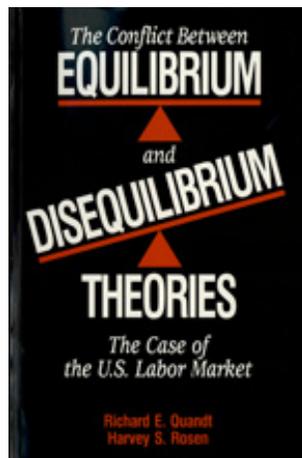

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Introduction

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**The Conflict Between Equilibrium and Disequilibrium Theories:
The Case of the U.S. Labor Market**

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Introduction

1.1 *The Policy Issues*

In 1985, the unemployment rate in the United States was 7.1 percent. There is virtual agreement that unemployment of this magnitude is a serious problem both for the individuals involved and for society as a whole. Workers who lose their jobs bear an immediate financial loss which can be substantial even in the presence of unemployment insurance. Even after a spell of unemployment is completed, an individual may continue to feel its economic effects. Future earnings may be less because of missed opportunities for on-the-job training and other kinds of investment in “human capital.” From the point of view of the economy as a whole, perhaps the best way to summarize the impact of unemployment is its cost in foregone output. In 1985, for example, the difference between *actual* Gross National Product and *potential* Gross National Product was roughly \$110 billion or 2.75 percent of actual GNP.¹ Finally, we should note that unemployment appears to be related to a number of individual and social problems whose costs are hard to quantify—there is some evidence, for example, that when unemployment goes up, so do heart disease, crime, mental illness, and even suicide.²

This monograph discusses several approaches to the analysis of unemployment, and public policy to deal with it. The subject is a complicated one, partially because policy toward unemployment cannot be formulated in isolation from a number of other important issues. Three important related topics are:

1. *Inflation.* If unemployment is such a bad thing, then why can't the government simply hire people who are out of work? Alternatively, why can't the government increase the level of aggregate demand so that private firms will hire more people? As we shall see below, one of the major controversies in macroeconomics is whether

government spending policies can have any impact on unemployment. But it is fairly well agreed that a by-product of government spending policies to decrease unemployment is wage inflation. Hence, one important issue we address is how to estimate the trade-off between inflation and unemployment.

2. *Taxes.* In discussions about unemployment, the subject of tax policy usually arises in two related but distinct contexts. The first is the effect of taxes on aggregate demand. For example, does lowering income taxes induce consumers to spend more, perhaps leading to more employment? The second is the effect of taxes on aggregate supply—do tax decreases affect the amount of work people want to do? If so, can the additional labor supply be absorbed by the economy in a reasonable amount of time? Both of these effects are important and interesting. However, the primary focus of this essay is on the workings of the labor market rather than the determinants of aggregate demand, so we will consider mainly the supply effects of tax changes.³

3. *Unionization.* It is usually argued that unions increase unemployment by raising wage rates above their equilibrium level. It could be, however, that the main effect of unions is to reduce the supply of labor, i.e., to shift back the supply curve. This would have the effect of decreasing unemployment. Because both effects might be operative, the outcome is theoretically ambiguous. Indeed, in their very careful analysis of U.S. employment data, Pencavel and Hartsog (1984) find that when it comes to the effect of unionism on relative man-hours worked, the data do not unambiguously point to a negative effect. (p. 217) Our analysis allows the unionization rate to influence the unemployment rate in several different ways; the data determine whether the effect is positive, negative, or zero. We also estimate how changes in the unionization rate would affect the unemployment-inflation trade-off.

1.2 *The Methodological Issues*

Given its evident importance, economists have focused a massive amount of attention on the problem of unemployment. Unfortunately, no consensus has been reached on its causes. A fundamental contro-

versy in the profession is whether unemployment is better viewed as an equilibrium or a disequilibrium phenomenon. Although one may argue about the precise connotation of “equilibrium,” for operational purposes we take it to refer to a situation in which prices immediately clear markets: prices are such that neither buyers nor sellers have any reason to attempt to recontract. Applied to the labor market, this means that at each instant the wage rate adjusts so that the supply and demand of labor are equal.

In contrast, the disequilibrium approach views prices as rigid or at least sticky—they do not adjust instantaneously to equalize supply and demand. Hence, suppliers or demanders may have to be rationed, i.e., they cannot obtain as much of a commodity as they desire at the current price. In a disequilibrium labor market, the prevailing wage may be above or below the wage that would equate demand and supply.⁴

Both approaches have advantages and disadvantages. The notion of equilibrium is a cornerstone of economics. It is an enormously useful concept that has permitted a variety of important comparative statics analyses of micro as well as macro phenomena. However, applying the equilibrium paradigm to the analysis of labor market fluctuations leads to an obvious problem—if the supply and demand of labor are always equal, then why is there any unemployment? As Altonji (1982) points out, according to modern equilibrium theorists, the main reason is intertemporal substitution:

In essence, the [equilibrium] hypothesis explains cyclical fluctuations in employment and unemployment as the response of labour supply to perceived temporary movements in the real wage. The key behavioral postulate is that leisure in the current period is highly substitutable with leisure (and goods) in other periods. Consequently, movements in the current real wage . . . elicit a large labour supply response. (p. 783)

In short, some individuals may *choose* unemployment this year because they believe that they will be able to earn more next year. Is this a sensible story? Critics of the equilibrium view find it implausible that during the Great Depression 25 percent of the workforce was unemployed only because so many people (mistakenly) believed that if

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they waited a while, they would command a higher wage rate. Nevertheless, proponents of the equilibrium view argue that it provides a good explanation of the historical data. (See, e.g., Lucas and Rapping 1970.) On the other hand, other econometric tests of the equilibrium hypothesis are not very favorable to it. (See Altonji 1982 or Mankiw, *et al.* 1982.)

In contrast, the disequilibrium formulation appears to accommodate the phenomenon of unemployment with relative ease—the wage rate is “too high;” workers without jobs would be happy to work for less, but the wage rate will not fall or, at least, will not fall sufficiently to clear the market. But denial of wage flexibility, simple as that notion may be, brings with it a host of difficulties in model specification and estimation. For example, why do firms pay workers more than the wages required by their potential replacements? After all, by definition, those who are involuntarily unemployed would be willing to work for a wage less than the prevailing one. In short, failure of markets to clear is generally viewed as concomitant with the failure of some agents to optimize.

However, under certain conditions sticky wages can be the outcome of optimizing behavior by both firms and workers. For example, the fact that firms do not always take advantage of opportunities to replace workers with cheaper replacements may be due to costs of labor turnover. Several more sophisticated theoretical attempts to rationalize sticky wages are discussed in section 2.2.3 below. Whatever the success of such theoretical exercises, however, proponents of disequilibrium models are apt to point out that despite difficulties in explaining precisely why the labor market does not clear at every moment in time, the real world does seem to be like that, and this fact should be reflected in economic analysis. As Rees (1970, p. 234) observes,

Although we know very little about the exact nature of the costs of making wage changes, we can infer that they exist. Wages are, next to house rents, the stickiest general class of prices in the economy, seldom adjusted more frequently than once a year. This stickiness may be reinforced by unionism and collective bargaining, but it was present long before unions arrived.

The debate between protagonists of the equilibrium paradigm and the disequilibrium paradigm has a strong ideological flavor. Proponents of one view frequently think that the alternative view is worthless or perhaps downright silly. A few years ago, one of us gave several seminars on the question of how one would test the null hypothesis that a set of observations is better explained as having been generated from an equilibrium as opposed to a disequilibrium specification. On some of these occasions (mostly in the U.S.), five minutes into the seminar it would be interrupted with the remark, “What you are trying to do is silly, because everybody knows that prices always clear markets and therefore there is nothing to test.” At other times (mostly in Europe) the interruption took the form, “What you are trying to do is silly, because everybody knows that prices never clear markets and therefore there is nothing to test.” Juxtaposing the two remarks very much convinced us that there definitely is something to test, and that any approach that is not ultimately willing to subject such questions to *data* as the final arbiter must be misguided.

1.3 *Goals of this Monograph*

The equilibrium vs. disequilibrium controversy is not only a matter of methodological interest. Appropriate answers to the important policy problems discussed in the first part of this chapter will depend in part on whether an equilibrium or disequilibrium characterization of the labor market is more appropriate. The goal of this essay is to estimate both disequilibrium and equilibrium models of the U.S. labor market, and to compare the results and their implications for policy. To our knowledge, this is the first attempt to estimate and compare fairly sophisticated equilibrium and disequilibrium labor market models.

A great deal of work in the U.S. labor market has followed the equilibrium paradigm. The economic and statistical issues associated with such models are now well understood, and there is no need for them to be explicated here at great length. In contrast, there has not been a great deal of work based on the disequilibrium paradigm.⁵ We shall therefore devote a disproportionate amount of time to discussing

the problems that arise in formulating and estimating a disequilibrium model.

Chapter 2 discusses equilibrium and disequilibrium approaches to labor market analysis, with special focus on policy implications. In chapter 3 we specify the disequilibrium model, and in chapter 4 the results are presented and discussed. Chapter 5 contains the equilibrium model. Chapter 6 concludes with comparisons between the disequilibrium and equilibrium results, and some suggestions for future research.

NOTES

¹This calculation was done using “Okun’s Law,” which states that for each 1 percentage point reduction in the unemployment rate, real GNP will rise by 2.5 percent. If the actual rate of 7.1 percent had been reduced to an assumed “natural rate” of 6.0 percent, then Okun’s Law implies an increase in real GNP of $(7.1 - 6.0) \times 2.5 = 2.75$ percent.

²For a careful discussion of the crime issue, see Massourakis, *et al.* (1984).

³For a discussion of the influence of tax changes on aggregate demand, see Blinder (1981).

⁴“Disequilibrium” has often been construed to refer to a state in which forces are at work to restore the system to equilibrium. This interpretation is not intended here, since the state of disequilibrium may persist indefinitely. For this reason, disequilibrium in the present sense is sometimes called a “fix-price equilibrium.”

⁵For some examples, see Rosen and Quandt (1978), Romer (1981), and Artus, Laroque, and Michel (1984).