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INVOLUNTARY UNEMPLOYMENT

by

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The most common and analytically useful definition of involuntary unemployment is based on the labor supply curve. If workers are off the labor supply curve--so that there is an excess supply of labor at the current real wage, then, by definition, there is involuntary unemployment. The amount of involuntary unemployment is equal to the amount of excess labor supply. If workers are on the labor supply curve, then, by definition, there is no involuntary unemployment. One could analogously define involuntary overemployment as a situation of insufficient supply of labor at the prevailing real wage (as may occur during wartime with wage and price controls), but the term is seldom used.

In a static, deterministic, utility maximization framework, the labor supply curve is simply the set of real wage and employment pairs for which the marginal rate of substitution of income for leisure is equal to the current real wage. Hence, involuntary unemployment can be equivalently defined using the utility function: if the real wage is greater than the marginal rate of substitution of income for leisure, then, by definition,

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there is involuntary unemployment. If the marginal rate of substitution of income for leisure is equal to the real wage, then there is no involuntary unemployment.

Historical Examples of Usage

This definition of involuntary unemployment is very close to that used by Keynes (1936). In Chapter II of the General Theory, Keynes writes "...the equality of the real wage to the marginal disutility of employment...corresponds to the absence of 'involuntary' unemployment." (p. 15) (Keynes makes the simplification that the marginal utility of income is constant, so that the marginal disutility of employment is the same as the marginal rate of substitution of income for leisure). Keynes excluded frictional unemployment from involuntary unemployment. However, it is important to note that Keynes also excluded unemployment "due to the refusal or inability of a unit of labor, as a result of legislation or social practices or of a combination for collective bargaining or of a slow response to change or of mere human obstinacy, to accept a reward corresponding to the value of the product attributable to its marginal productivity." (Keynes, 1936, p. 6). Thus, Keynes chose to exclude union wage differentials as well as minimum wage legislation as sources of involuntary unemployment. Clearly, Keynes wanted to focus on a particular type of involuntary unemployment.

Patinkin (1965, Chapter 13) also used the static labor supply definition in his well-known analysis of involuntary unemployment: "The norm of reference to be used in defining

involuntary unemployment is the supply curve for labor...as long as workers are 'on their labor supply curve'--that is as long as they succeed in selling all the labor they want to at the prevailing real wage rate--a state of full employment will be said to exist in the economy." (p. 314-15).

Although Keynes developed and emphasized the idea of involuntary unemployment much more than economists had done before, the above definition based on the labor supply curve predates Keynes writings. In fact it was used by the "classical" economists. For example, in 1914 Pigou proposed measuring involuntary unemployment of a group of persons by the number of hours' work by which employment "...falls short of the number of hours' work that these persons would have been willing to provide at the current rate of wages under current conditions of employment." (see Casson (1983), p. 39) According to Keynes, however, classical theories (such as Pigou's) did not admit the possibility of involuntary unemployment. Unemployment of a particular group caused by union wage differentials or minimum wage legislation was admitted by the classical theory, but as mentioned above Keynes chose to classify this as voluntary.

Criticisms of the Definition of Involuntary Unemployment

Despite the analytical simplicity of the above definition based on labor supply, the term involuntary unemployment has resulted in many critiques and controversies. One of the criticisms stems from simple conflicts between the above technical definition and everyday non-technical usage of the term

involuntary. For example, Fellner (1976) wrote, "...distinguishing elements of voluntariness from elements of involuntariness in the unemployment problem is a hopeless endeavor..." (p. 134) and that "Keynes definition is unhelpful and so are all variants inspired by that definition." (p. 53). Fellner and others have been concerned that one can never determine the intentions of a given unemployed person so that the broad classification of unemployment into involuntary and voluntary is meaningless. Although the many connotations of the term involuntary may cause semantic difficulties (as may other concepts in economics such "rational" or "marginal"), focusing on the technical definition given above would seem to avoid these difficulties.

A second criticism arises in the practical use of the concept of involuntary unemployment for public policy. From the above definition, one criterion of good macroeconomic performance would be zero, or very small, involuntary unemployment. (Strictly speaking, this is true only if the measured real wage is equal to the marginal productivity of labor, an equality that might not hold if optimal contracts of the type described below are important in the economy). Since government unemployment statistics are commonly taken as an indicator of economic performance, one might hope that measured unemployment could be related to the concept of involuntary unemployment. However, this is very difficult and any attempt is bound to be criticized. Government unemployment statistics typically attempt to measure the number of unemployed who are looking for work, but who have not yet found work. However, aside from the problem of

determining whether someone is looking for work, or how intensively, unemployment statistics obviously include frictional unemployment and other types of unemployment that would not be included as involuntary according to the above definition. Even in a condition of relatively full employment, there exists some "normal" unemployment, which government statistics need to be corrected for. Milton Friedman (1968) used the term "natural" unemployment for the amount of unemployment that would exist, without excess supply, in equilibrium after wages and prices have adjusted. Another concept of normal unemployment is the non accelerating inflation rate of unemployment (NAIRU), defined as the amount of unemployment that would exist when there is no tendency for wage or price inflation to rise or fall. Measuring the "natural" rate or NAIRU in practice entails looking for an unemployment rate for which inflationary pressures are small and adjusting this rate for known changes in the demographic characteristics of the labor force. The natural rate of unemployment is not a constant, however, and these measurements have considerable error. Nevertheless a practical alternative to involuntary unemployment as a measure of economic performance is the difference between the actual unemployment rate and the natural unemployment rate. For policy purposes, this may serve as a reasonably close approximation to involuntary unemployment, but clearly it is a different concept. In particular, note that this measure can be negative, as when the unemployment rate falls below the natural rate in boom times. Fellner (1976) suggested focussing on this measure and hence on inflation stability,

rather than on involuntary unemployment, and he argued that demand management (monetary and fiscal policy) should promote the maximum amount of employment that can be achieved without inflation instability. This measure is also the criterion used in stabilization studies that characterize a macroeconomic tradeoff in terms of the fluctuations of unemployment about the natural rate versus the fluctuations in inflation. (See Taylor (1980)).

A third reason for criticism of the term involuntary unemployment is that the standard definition is essentially static and deterministic. In fact, the static, deterministic labor supply and demand model does not admit an explicit theory of frictional or natural unemployment. Without such a model it is difficult to even discuss whether a given level of unemployment is voluntary or optimal or not. Research on the microfoundations of unemployment (see for example Phelps et al (1970)), had as a major goal the development a model of equilibrium unemployment--using search and matching theory. Some search models generated unemployment that was Pareto optimal (see Lucas and Prescott (1974), for example), but others included trading externalities and generated unemployment which could be nonoptimal (see Diamond (1983), for example). While not yet definitive, at the least this research shows that for many public policy questions it is necessary to go beyond the simplest model of labor supply, and thereby beyond the simple definition of involuntary unemployment.

In the General Theory Keynes presented a more convoluted definition of involuntary unemployment, and this has

been a fourth source of controversy. According to Keynes (1936, p. 15) "Men are involuntarily unemployed if, in the event of a small rise in the price of wage-goods relatively to the money-wage, both the aggregate supply of labour willing to work for the current money-wage and the aggregate demand for it at that wage would be greater than the existing volume of employment". One can clearly envisage a point off the labor supply curve from this definition. However, there is much more. Imbedded in the definition of involuntary unemployment are some of Keynes other ideas that were part of his theory of involuntary unemployment, but logically distinct from the definition of involuntary unemployment. Within the definition it is noted that workers would be willing and able to have a reduction in their real wage (and still increase their work) if it occurred through an increase in the price level, but not if it occurred through a decline in the nominal wage. This "stickiness" of nominal wages, which is generated as part of the market mechanism, is of course crucial to Keynes theory. Also imbedded in the definition is the assumption that firms are on their labor demand curve, so that a lower real wage would stimulate unemployment, an idea that is much less crucial to Keynes ideas as Leijonhufvud (1968) has emphasized. Why did Keynes emphasize this convoluted definition of involuntary unemployment? It seems clear that he wanted to highlight the crucial difference between his theory of unemployment and what he called classical theory. This difference centered on the inability, given the way labor markets and the whole economy interact, of individual workers to reduce unemployment by simply reducing nominal wages. As indicated

above Pigou based the definition of involuntary unemployment on the labor supply curve in much the same way that Keynes did, but the classical reason for its existence--simply that real wages were too high--was much different from the deficient aggregate demand theory put forth by Keynes. In retrospect Keynes would have added clarity to his discussion by unbundling the his theory and his definition of involuntary unemployment.

Implications of Recent Technical Research for the Concept of Involuntary Unemployment

Five research developments during the last 20 years have had great relevance for the concept of involuntary unemployment: equilibrium macroeconomics, optimal contract theory, disequilibrium macroeconomics, efficiency or incentive wage theory, and staggered wage setting theory. However, this relevance must be inferred from the research, because the term involuntary unemployment is seldom used explicitly, and perhaps avoided by many recent researchers.

Equilibrium macroeconomics. One strand of research in macroeconomics has established a strategy of trying to explain the observed fluctuations in unemployment by equilibrium models in which workers are always on their labor supply curves. Wages and prices are perfectly flexible, and all markets clear in these models. Lucas and Rapping (1968) and Kydland and Prescott (1983) represent some of the seminal work in this strand of research. Clearly if these models turn out to be successful and to dominate other models, then the idea of involuntary unemployment would become useless for macroeconomics.

Shifts in the labor supply curve--caused by intertemporal substitution of labor supply in response to temporary actual or perceived fluctuations in the real wage--are the main source of employment variability in these models. Research in this area is continuing and branching out into "real business cycle" theory which ignores monetary factors in the cycle altogether. It appears, however, that a very high labor supply elasticity --by the standards of recent microeconomic empirical research (see MaCurdy (1981))--is required for these models to be able to explain the observed fluctuations in employment.

Optimal Contract Theory. Studies by Azariadis(1975), Baily (1974) and others attempted to explain why involuntary unemployment that would arise when there exist optimal contracts between firms and workers stipulating for fixed wage payments. However, when firms and workers have equal access to information, these studies have shown that, in the relevant sense, involuntary unemployment does not exist despite the fixed wage bill. In these optimal contract models the marginal rate of substitution of income for leisure is equal to the marginal productivity of labor--the condition for optimality--in all possible states. Although workers are off their labor supply curve ex post (since the real wage is not necessarily equal to the marginal rate of substitution), this discrepancy has no welfare significance. Models in which firms have more information than workers about the nature of the shock can lead to a breakdown in the marginal conditions for optimality, but unless firms are more risk averse than workers the result is

involuntary overemployment: the marginal productivity of labor is less than the marginal rate of substitution of income for leisure (See Green and Kahn (1983) and Grossman and Hart (1983)). Viewed as an attempt to explain involuntary unemployment this research has, therefore, been unsuccessful. Taken literally, the research shows that much of the unemployment that may have appeared as involuntary is, in fact, voluntary or at least efficient!

Disequilibrium theory. Malinvaud's (1977) careful examination of fix-price multimarket equilibria, following the tradition of Clower (1965) and Barro and Grossman (1971), has greatly helped to clarify the conceptual difference between Keynes' explanation of involuntary unemployment due to insufficient aggregate demand (where firms are constrained in product markets), and the classical unemployment associated with the real wage being too high (where firms are not constrained in product markets). This research also has had considerable policy relevance in the early 1980s because the high rates of unemployment in western Europe were diagnosed as classical rather than Keynesian by many economists.

Efficiency or incentive wages. Calvo (1979) and others have argued that involuntary unemployment can occur because high wages must be paid to give workers the incentive to work hard, to be productive, and not to shirk. As firms attempt to bid up their wage relative to other firms, an equilibrium is reached with all firms paying more than the wage in the absence of incentive effects and with involuntary unemployment: an excess supply of labor with unemployed workers willing to work at the going wage. This type of unemployment is not of the deficient demand type emphasized

by Keynes, and given Keynes willingness to lump other minimum wage unemployment in with frictional unemployment, it is likely that Keynes would have classified this type unemployment as voluntary. Incentive wages would increase the normal unemployment (natural or NAIRU) rate, but there is little empirical evidence of how quantitatively important the effect is.

Staggerred Wage Setting Theory. In these models (see Taylor (1980), for example), wages are set with an aim to maintain relative wages unless there is a reason for relative wages to adjust. This relative wage setting leads average nominal wages to adjust with a lag described by a predictable dynamics to changes in demand. In these models prices are set as a mark-up over wages, and for this reason aggregate prices are almost as sticky as nominal wages. Combined with an elementary model of aggregate demand and an aggregate demand policy that does not fully accommodate inflation, these models are designed to be directly compared with the data and in fact lead to fluctuations in unemployment which have features similar to the real world. The unemployment in these models comes close to the susan definition of involuntary unemployment, but since explaining empirical regularities is a primary objective, unemployment enters the model directly as the deviation of unemployment from the natural rate--a more readily measurable quantity than involuntary unemployment. These models show that wage rigidities need not be very long to generate the type of fluctuations in unemployment that characterize the business cycle. Like the equilibrium models discussed above, and unlike the other three research developments described above, these models are

dynamic and therefore can be directly tested against time series data.

Although there has been a tendency for much recent research to avoid the term involuntary unemployment, and to instead define unemployment as appropriate to the theoretical or empirical objectives of the research itself, the term involuntary unemployment will probably continue to be used. Despite the criticism and controversy discussed above there is little harm in this usage, as long as the technical definition is emphasized. Its usage may encourage researchers to point out the connection of new results to past achievements.

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