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Ideas Versus Ideology: The Origins of Modern Labor Economics

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Starting with its early twentieth century origins, the development of Labor Economics is traced to the present. We describe an intellectual revolution in which an earlier tradition that focused primarily on the institution of the labor union has been replaced by a perspective that emphasizes the various roles played by labor markets in an economic system. That earlier tradition contained very significant ideological elements, whereas its successor deals much more with the world of ideas. In the course of the debate, which still continues, ideas triumphed over ideology and created modern Labor Economics.

I. *Introduction*

When and where did Labor Economics, as it has existed during the twentieth century, come into existence? More importantly, where did the very expression "Labor Economics" originate? While there may be no precise and definitive answers to these questions, it does seem clear that academic interest in the separate subject, Labor Economics, existed very early in the century. In a fascinating quasi-survey, quasi-review, article written in 1926 by Professor Paul Brissenden of Columbia University, a brief bibliographic history of Labor Economics textbooks is provided. Parallelling Brissenden, both in time and subject matter, are a 1926 article by Sumner Slichter and a 1927 piece by Charles E. Persons.

One of the striking aspects of the bibliographic references presented by Brissenden, Persons, and Slichter is the frequent use of the term "problem(s)" in the title of the books referenced. For example, Brissenden assigns temporal priority as a textbook to Adams and Sumner's 1905 book, *Labor Problems*. Other textbooks with similar titles are F. T. Carlton, *History and Problems of Organized Labor* (1911, 1920); G. S. Watkins, *Introduction to the Study of Labor Problems* (1923); Willard E. Atkins and Harold D. Lasswell, *Labor Attitudes and Problems*, and Warren B. Catlin, *The Labor Problem in the United States and Great Britain* (1926). Also worth noting are two significant books of readings, John R. Commons, *Trade Unionism and Labor Problems* (1905, 1921) and Edgar J. Furniss and Lawrence R. Guild, *Labor Problems* (1925).

Why the rather widespread notion of labor *problems*? The answer to that question can be found in large part in the history of nineteenth century economic thought. Central to many of the ideas of that era are matters that are quite naturally part and parcel of what may be broadly viewed as labor economics. The role of labor as an input in the productive process, notions of the division of labor, the role of wages in the distribution of income, and, most important, the concept of the labor theory of value are examples. That latter notion plays a critical role in promoting the idea that there is a labor *problem.* From Adam Smith through to Karl Marx, economic thought is dominated by the labor theory of value. Marx was responsible for taking that concept to the ultimate in arguing that if labor is the source of value, factor returns other than wages represent an exploitation of workers. That is the source of the labor *problem.*

Even before Marx, though, among the classical economists, there are strong overtones of the existence of a labor problem. In particular, the subsistence theory of wages, John Stuart Mill's wages-fund doctrine, and Malthus's theory of population suggest a wage problem. This is documented in Mill's *Principles of Political Economy* (originally published in 1848), in which Chapters XII and XII of Book II (pp. 442–70) are titled, "Popular Remedies for Low Wages," and "The Remedies for Low Wages Further Considered." The tone of these chapters is suggested by the opening two sentences of Chapter XIII (p. 457): "By what means, then, is poverty to be contended against? How is the evil of low wages to be remedied?"

Mill's choice of the word evil is suggestive, implying the social undesirability of the institutional arrangements that determine wage rates in a market economy. Within his perception of the world, as within Marx's, the link between wage rates and the production process is non-existent. Specifically, in Chapter I, Book II, of his *Principles,* he denies any connection, arguing (pp. 257–58), "The laws and conditions of the production of wealth partake of the character of physical truths. . . . It is not so with the Distribution of Wealth. That is a matter of human institutions solely. The things once there, mankind, individually or collectively, can do with them as they like."

What this view involves is the use of normative, not objective, criteria in determining wage rates and the distribution of income. It also lends credence to the institution that became central to the labor economics that emerged in the early twentieth century — the organization of workers known as a labor union. In a world in which expressions such as "the evil of low wages" are found in major works of economics and there is uncertainty about the nature of the forces that determine the distribution of income, the "wage problem" and labor unions are a natural coupling, with unions being perceived as the solution to the *problem.*

On another front, however, things were somewhat different. In the latter half of the nineteenth century, the "marginal" or "final" utility notion became increasingly popular (Dupuit, 1844; Gossen, 1853; Jevons, 1871; Menger, 1871; Clark, 1899). Ultimately, this led to a supplanting of the labor theory of value. More important, for our purposes, the marginal revolution carried over into the realm of income distribution. What it added was something that had been missing, an actual theory of income distribution that could be integrated into the theories of value and production. In the world of marginalism, wage determination now had a theoretical basis, the marginal productivity concept. As articulated by John Bates Clark (1899), it resolved the dilemma posed by Marx by arguing that competition in the market for labor would tend to equate wage rates with the marginal productivity of labor. But, in the process, this addition to formal economic theory established a zone of conflict between the economic theorists and the scholars interested in "labor problems," i.e., the proto-labor economists *circa* 1900–1920.

Evidence of the nature of this conflict is provided in Persons's (1926) review article which discusses some dozen volumes dealing with the subject of labor. Among them is Nora Milnes's, *The Economics of Wages and Labour* (1926). Milnes states (p. 105) that a "real understanding of the marginal discount [marginal productivity] theory should go far to dispel the feeling of unfairness so general among the workers." Persons's reaction to the Milnes book is to label it as an apologia for capitalism, commenting (p. 490) that the advance of labor unions "has been much hampered by an economic apologetic of the sort which this book seems to typify." An interesting aspect of the introduction of marginalism is the work of Paul Douglas, a labor economist with an interest in the real wage rates of workers (1926, 1930). Following the line of thought postulated by the marginalists, he developed a specification of a production function (Cobb and Douglas, 1928; Douglas and Bronfenbrenner, 1939) in order to facilitate the comparing of observed real wage rates with the marginal product of the labor input into the production process. This would become a staple element of future labor studies.

This takes our story of the development of Labor Economics to the eve of the Great Depression of the 1930s. To summarize, Labor Economics at this point rather naturally evolved from the dominant economic theory of the bulk of the nineteenth century, the Classical framework. However, the marginalist revolt against these notions produced a body of economic thinking that was not nearly as congenial to the ideas of the majority of academic labor economists. An exemplar of this group would be Solomon Blum, whose book, *Labor Economics*, was published in 1925. It is the primary focus of the Brissenden (1926) article, and Brissenden cites (p. 449) a personal observation that Blum made to him in the form of a "wish that there might be some way in which a college professor could do 'something for the labor movement.'"

II. *The Great Depression Years*

Two unique events of the Great Depression years had a substantial effect on the labor economics of the time. On the one hand, there was the total formalization of the cooperative relationship between the federal government and the labor movement. This was an extension of developments that began earlier in the century. During Woodrow Wilson's administration, various legislative acts (such as the Clayton Act of 1914 and the Adamson Act of 1916) courted union political support, and unions were incorporated into a number of tripartite (labor, management, and government) boards and panels as the representative of workers (Bloom and Northrup, 1965). A prominent example is the National War Labor Board of World War I. There followed, in 1926, the enactment of the Railway Labor Act, which provided formal status in collective bargaining negotiations for the railway labor unions.

These are forerunners of the burst of pro-labor union legislation that marked the 1930s — the Norris-LaGuardia anti-injunction law (1932), the Davis-Bacon prevailing wage bill (1931), the National Industrial Recovery Act (particularly section 7a) of 1933, and the National Labor Relations (Wagner) Act of 1935. By 1937, when the U.S. Supreme Court began to validate these legislative departures, the institution of the labor union had received the full imprimatur of the federal government. Consequently, the study of unions took center stage in the academic discipline known as Labor Economics. In the process, the work of John R. Commons et al. (1926–1935), on the history of unionism acquired classic status, as did the writing of Sidney and Beatrice Webb (1920), G. D. H. Cole (1938), Robert Hoxie (1917), Frank Tannenbaum (1922), and Selig Perlman (1922). Thus, an imposing intellectual infrastructure was created for inquiring into the nature, character, and operations of labor unions.

This infrastructure bore the imprint of off-shoots from the mainstream of economic thought, viz., fabianism (the Webbs and Cole) and institutionalism (in particular, Commons). Perhaps, then, the Labor Economics of this time was something of a stepchild, more "labor" than "economics." However, a second major development of the 1930s operated to keep Labor Economics somewhat mainstream: the advent of Keynesianism.

III. *John Maynard Keynes As Labor Economist*

When writing the *General Theory of Employment, Interest, and Money*, John Maynard Keynes often donned the cap of labor economist. Early on in the book, he advocates an approach to national income accounting that emphasizes labor market magnitudes. On page 3 of the *General Theory*, he suggests using the average money wage rate in the economy as a *numeraire* for income accounting purposes. What this reflects is his conviction that money wage rates in the economy are relatively rigid in a downward direction. Even more dramatic is Keynes's venture into the realm of empirical labor economics on page 10 of the *General Theory,* where he makes the remarkable statement:

> in the case of changes in the general level of wages, it will be found, I think, that the change in real wages associated with a change in money wages, so far from being usually in the same direction, is almost always in the opposite direction. When money wages are rising, that is to say, it will be found that real wages are falling, and when money wages are falling real wages are rising.

Since Keynes accepted the classical proposition that real wage rates and employment are negatively related, this notion implies ideas about wages and employment that were politically popular in the 1930s and motivated much labor legislation. For example, Herbert Hoover was an advocate of keeping money wage rates high in order to stimulate economic activity (Rothbard, 1963; Vedder and Gallaway, 1997). Also, the Policy and Findings section of the National Labor Relations Act (1935) states that unequal bargaining power in nonunion situations "tends to aggravate recurrent business depressions by depressing wage rates and the purchasing power of wage earners in industry."

The rationale underlying Keynes's argument is as follows:

> This is because, in the short period, falling money wages and rising real wages are each, for independent reasons, likely to accompany decreasing employment; labor being readier to accept wage cuts when employment is falling off, yet real wages inevitably rising in the same set of circumstances on account of the increasing marginal return to a given capital equipment when output is diminished (p. 10).

Keynes's speculations triggered one of the more interesting debates in the history of labor economics in the major English academic journal of the era, the *Economic Journal*, which was edited by Keynes. An American economist, John Dunlop (1938), examined the British data, and a British economist, Lorie Tarshis (1939), did the same for the American information. Both of them found relationships that contradicted Keynes. The Tarshis article is simple and direct. He calculates the simple correlation between changes in money and real wage rates in the U.S. for a 75-month period beginning with January, 1932, and ending with March, 1938. The results? *Positive* correlations ranging between 0.86 and 0.96, *contra* Keynes. Dunlop focuses on wage data provided by a number of sources, including George H. Wood (1909) and Arthur L. Bowley (1900).[1] Basically, his findings are similar to those of Tarshis. As Keynes (1939, p. 34) himself summarizes their work:

> Mr. Dunlop's investigations into the British statistics appear to show that, when money wages are rising, real wages have usually risen also; whilst when money wages are falling, real wages are no more likely to rise than fall. And Mr. Tarshis has reached broadly similar results in respect of recent years in the United States.

Having said that, Keynes then engages in some remarkable obfuscations. For example, he complains (p. 42) that, "The great majority of Mr. Tarshis's observations relate to changes of less than 1.5 percent," ignoring the fact, reported by Tarshis, that eliminating very small changes *strengthens* his results. Even worse, he interprets a postscript to the Tarshis effort which points out that the simple correlation between real wages and man-hours worked (employment) ranges from –0.48 to –0.64, both statistically significant, as follows (p. 42):

> whilst real wages tend to move in the same direction as money wages, they move in the opposite direction, though only slightly, to the level of output as measured by man-hours of employment; from which it appears that Mr. Tarshis's final result is in conformity with my original assumption. . . . It seems possible, therefore, . . . that I may not, after all, have been seriously wrong.

To cap off his performance, Keynes (p. 50) sums up by saying, "I am comforted by the fact that their [Dunlop, Tarshis, and Michael Kalecki (1938)] conclusions tend to confirm the idea that the causes of the short-period fluctuation are to be found in changes in the demand for labor and not in changes in its real supply price."

Keynes had support from other figures within the economics professions. Of particular note are Roy Harrod (1937) and James Meade (1936) who concurred in his notions. Further down the road, perhaps the most strained example of support for Keynes was to come from a young Lawrence Klein, who, in his 1947 book, *The Key-*

nesian Revolution, dealt directly with the Keynes-Dunlop-Tarshis contretemps. He confronts the issue with a remark that perhaps, "Keynes was backing the wrong horse" (1947, p. 107) However, he then allays his concerns by adding, "Our main concern is not with the empirical problem but with the theoretical relation of wage rates to unemployment."

The Keynesian ruminations about the link between money and real wages contributed substantially to a macroeconomic paradigm which would dominate economics for nearly a half century. It held that movements in money wage rates didn't matter; that they largely were exogenously given by the institutional framework of the economy. That institutional framework is described by the strain of industrial relations type thought that was favorably disposed toward labor unions and now dominated Labor Economics.[2] As part of the "high-wage model," its paradigms were now philosophically consistent with and reinforced by the mainstream economics that soon bore the appellation, "The New Economics."

IV. *The State of Labor Economics: World War II*

An interesting glimpse into the nature of Labor Economics as the Great Depression wound down and World War II occurred is provided by the three volume *Economics of Labor* project produced by Harry Millis of the University of Chicago and Royal Montgomery of Cornell University. The first two volumes, *Labor's Progress and Some Basic Labor Problems* and *Labor's Risks and Social Insurance*, were published in 1938 and the third, *Organized Labor*, in 1945. All told, the three volumes provide nearly 2,000 pages of material, including 930 in *Organized Labor*, which deals entirely with the phenomenon of the labor union. Roughly speaking, half the contents of the full series deal with industrial relations topics, a quarter with social insurance, and another quarter with labor markets. In a sense, the Millis and Montgomery effort established the form for the majority of post-World War II Labor Economics textbooks, a preponderance of material dealing with industrial relations and social insurance combined with a sprinkling of discussion of the operation of labor markets.

The heavy emphasis on industrial relations is reflected in the involvement of universities in "labor education." In 1945, the New York State School of Industrial Relations began its operations at Cornell University. This would not be a unique incident. By 1946, Caroline Ware was able to report the results of a survey of "labor education" programs at a number of universities. She classifies such programs in terms of their aims, "i.e., to advance theoretical knowledge and understanding in administrative techniques within unions, (e.g., Harvard, University of Chicago); to improve the process of collective bargaining and negotiation, (e.g., Rockhurst, St. Joseph's); to improve the effectiveness of labor unions and their members (Wisconsin, Rhode Island State College, University of Michigan)" (Ware, 1946, p. 130). Note the emphasis on unions and collective bargaining. Clearly, at this juncture, several universities appear to be attempting to fulfill Solomon Blum's wish to do "something for the labor movement."

In the same spirit, the very first article published in Cornell's new journal, the *Industrial and Labor Relations Review*, October, 1947, is a paper that Edwin Witte read at the University Labor Education Conference, held in Washington, DC, on May 28, 1947. It is titled, "The University and Labor Education." Witte's views, as expressed in this article, can be summarized as follows:

> A complete labor education program for a university worthy of the name includes research, resident instruction, and workers' education and other forms of adult education. . . . It can be soundly developed only through co-operation between the universities and organized labor with guidance afforded by such an agency as the United States Department of Labor. Unless that Department is enabled to adequately provide that guidance, the development of workers' education will be seriously retarded (p. 17).

Witte's call for a tripartite (university, organized labor, and government) approach to labor education is symptomatic of the times. The industrial relations approach to Labor Economics is in the ascendancy.

V. *The Lester-Machlup-Stigler Controversy*

At just this time, a representative of the industrial relations view of Labor Economics, Professor Richard Lester of Princeton University, launches a frontal assault on an element of mainstream economics that presents problems for this new orthodoxy, the marginalist ideas that are the foundation of much microeconomic thinking. Basically, what Lester (1946) does is resurrect the issue of money wage rates in the economy that was central to the Keynes-Dunlop-Tarshis interchange already discussed. The emphasis is on the U.S. with the arguments being reported in the *American Economic Review*. The major protagonists are Lester and Fritz Machlup of Buffalo University. The discussion begins with an article by Lester, published in March 1946. Lester's primary conclusion is, "Market demand is far more important than wage rates in determining a firm's volume of employment" (p. 81). Thus, Lester asserts a microeconomic position identical to that taken by Keynes at the macroeconomic level.

In Lester, we have the classic example of the marriage between the pro-labor union industrial relations types and the practitioners of the aggregate demand oriented "New Economics." By now, as already suggested, the industrial relations school had been integrated into and accepted by the establishment of American economics, as represented by the American Economics Association. This acceptance is indicated by an interesting piece in the May, 1947, *Papers and Proceedings of the American Economic Association* (Reynolds et al., 1947). It is a report requested by the Chairman of the Association's Committee on Research from its Subcommittee on Labor. That subcommittee contained many of the titans of the industrial relations field, including Professor Lester.

Lester's critique was more than a mere restatement at the micro-level of Keynes position. It was a direct attack on the basic theoretical paradigm accepted by most economists, the theory of prices and production, especially the marginal productivity theory of factor pricing. An answer seemed appropriate and it came quickly from Professor

Machlup. Machlup had strong ties to the marginalist tradition. He was one of the "emigres" who left Europe in the 1930s, along with Gottfried Haberler and Ludwig von Mises. He had been a student of Mises, who had been a student of Carl Menger. Machlup's initial contribution (1946) is lengthy (36 pages) and concludes, "that the marginal theory of business conduct has not been shaken, discredited or disproved by the empirical tests discussed in this paper" (p. 553).

In March, 1947, an additional dimension was added to the debate. The previous June, George Stigler (1946) had published a paper using the traditional marginal analysis to evaluate the effects of minimum-wage legislation. His critique was negative. This brought him within the field of fire of Lester, who opens his response (1947) to both Machlup and Stigler with the following cannonade:

> Two recent papers in the *Review* raise the question whether marginalism suffers more from its admirers or its critics. Professor Machlup's admissions and inclusions leave the doctrine weak and distended. Professor Stigler's strict application of "pecuniary" marginalism to the labor market, for which it is ill-suited, exposes it to further discredit (p. 135).

His more specific comments on Stigler are revealing with respect to the institutionalist origins of the field of industrial relations. He remarks that Stigler's article indicates, "an inadequate understanding of: (a) the process of wage determination in American industry, (b) actual operations in labor markets, (c) the policies and functioning of management in manufacturing concerns, and (d) the economic effects of minimum-wage fixing as observed in practice" (Lester, 1947, p. 142).

Later, he chides Stigler's paper for having, "a pre-World War I flavor, as though it was contemporary with the adverse pronouncements of marginalists like J. B. Clark and F. W. Taussig on minimum-wage legislation some thirty years ago" (p. 143).

Of course, Machlup and Stigler are permitted to reply, but, by now, the basic positions are etched in stone. Machlup says (1947, p. 149):

> I am sorry that with all the expository effort invested in my article I did not succeed in making clear to Professor Lester what marginal analysis means and what it does not mean. Had I succeeded, he could not have reiterated several statements of his earlier article. . . . It would be wasteful of time and space if I countered reiteration with reiteration.

As to Stigler (1947), he simply despairs and concludes his reply in a tone that is questioning of Lester's motivations.

There things stood.[3] The industrial relations school had their hero, Lester, and the traditional price theorists had their champions, Machlup and Stigler. In the mainstream of the profession, though, the strange amalgam of the industrial relations and "New Economics" types continued to prevail.

VI. *The Employment Act Episode*

Coincident with these events is a political action that contributed to enhancing the mystique of the macroeconomic side of the industrial relations-mainstream alliance. It is the Employment Act of 1946. As the prospects for the U.S. being on the winning side in World War II increased, people began to worry about the nature of the post-war economy. Visions of massive unemployment, such as that which marked the 1930s, were common. A leader in this regard was Alvin Hansen, one-time labor economist (1922), now macroeconomic doyen. In 1943, Hansen wrote (p. 5), "When the war is over, the government cannot just disband the Army, close down munitions factories, stop building ships, and remove all economic controls." Hansen was not alone in holding these views. As business economist Robert A. Gordon (1961, p. 464) put it, "In the summer of 1945 the belief was fairly widely held in Washington that unemployment would be a serious problem during the winter of 1945–46."

At the highest political level, the Presidency, this perception was accepted. Shortly after Japan's surrender in August, 1945, President Truman spoke in terms of the "inevitability" of substantial unemployment (1955). Furthermore, he reiterated the high-wage idea by commenting, "the existence of sub-standard wage levels sharply curtails the national purchasing power and narrows the markets for the products of our firms and factories" (*New York Times*, September 7, 1945, p. 7). In the political arena, these views ultimately led to the passage of the Employment Act of 1946, which once again enshrined the purchasing power idea in the law of the land. The final version of the legislation called for the creation of "conditions under which there will be afforded useful employment opportunities, including self-employment, for those able, willing, and seeking to work, and to promote maximum employment, production, and purchasing power" (*Economic Report of the President*, 1947, p. 9).

VII. *The "Structural Change" Argument*

Actual developments in the immediate post-World War II era did not confirm the pessimistic forecasts of a return to the economic conditions of the 1930s. Rather, the period was marked by a series of relatively brief business cycles (4 to 5 years) with the downturns being about a year in length. Unemployment peaks occurred in 1949 (4.9 percent), 1954 (5.6 percent), 1958 (6.8 percent), and 1961 (6.7 percent). The fact that the unemployment rate at its peak was rising did not go unnoticed, especially since the average unemployment rate from cycle peak to cycle peak also rose in each successive cycle, moving from 4.1 percent in the 1948–1953 cycle to 5.6 percent in 1957–1960. Charles Killingsworth (1963) suggested an explanation for this phenomenon that was based on "structural changes" in unemployment in the U.S. Basically, Killingsworth's argument was that technological change was operating to displace the relatively unskilled from the labor market, increasing unemployment among them and generating a rise in the overall unemployment rate. His argument was challenged by empirical evidence presented by Edward Kalachek (1963), Lowell Gallaway (1963), and Norman Simler (1964).

A variant of the unemployment structural change argument also emerged about 1960. In particular, John Kenneth Galbraith (1958), Michael Harrington (1964), and Robert Lampman (1959) argued that structural changes were creating a more permanent "poverty" group in American society. Their position was that economic growth could no longer be relied on to move people upward from the poverty condition, and that a new kind of poverty was emerging in America. Again, this thesis was debated in the literature with Lowell Gallaway (1965) and Harry Johnson (1966) arguing against the structural change hypothesis.[4]

VIII. *Structural Change and Economic Policy*

Both versions of the structural change hypothesis argue against an alternative explanation for rising unemployment rates and a slowing in the rate of decline in poverty (however defined),[5] namely, a deficiency of aggregate demand. This position coincided with a view that had been gaining adherents in macroeconomic circles, namely, that the American economy needed some artificial Keynesian-style stimulation, even if it meant incurring some amount of general price inflation. A leading proponent of this view was Alvin Hansen, whose attitudes are described in a 1965 article entitled, "The Case for High Pressure Economics." Hansen's position was reinforced by Arthur Okun's 1962 analysis of the gap between actual and potential Gross National Product in the United States. According to Okun, beginning in 1958, actual GNP began to fall significantly below potential GNP. This followed from Okun's having defined potential GNP by assuming it was consistent with a four percent unemployment rate. Thus, Okun's calculations represented nothing more than a restatement of the fact that unemployment had been rising in the post-World War II era.

Arthur Okun was a significant figure from the standpoint of economic policy in the United States. As a member of that creation of the Employment Act of 1946, the Council of Economic Advisers, he was in a position to influence the formation of policy attitudes. His calculations were important and became the basis for Okun's Law, that every one percentage point change in GNP is associated with a seven-tenths of one percent change in the opposite direction in the unemployment rate. For at least the next quarter century, Okun's Law was a staple item among Congressional economic policy leaders of the aggregate demand persuasion in Washington.

VIII. *The Phillips Curve*

The Okun *Weltanschauung* was reinforced by events in the intellectual milieu. In 1958, A.W. Phillips published a paper in *Economica* that ultimately shook the world. It purported to identify a systematic negative relationship between the rate of change in money wage rates and the unemployment rate in an economy. This proposition was refined by Richard Lipsey in a paper published in *Economica* in 1960. At the same time, at the 1959 annual meetings of the American Economic Association, future Nobel laureates Paul Samuelson and Robert Solow presented a paper that used a cost-push inflation framework to transform Phillips's relationship into one between the rate of price inflation and the unemployment rate. The "trade-off" between inflation and unemployment had become popularized.

The "trade-off" is pure John Maynard Keynes. It presupposes the existence of a pervasive money illusion on the part of workers, just as Keynes did in the *General Theory*. Thus returned the Keynes's contention that money and real wage rates move in opposite directions. If true, a greater increase in money wage rates will lead to a larger decrease in real wage rates and a more substantial rise in employment and fall in unemployment. The Phillips curve is implied on page 10 of the *General Theory*.

The beauty of the Phillips curve for the deficiency of aggregate demand types is the intellectual underpinning it provides for their economic policy agenda. It legitimizes Hansen and Okun and validates the proposition that "inflation can be a good thing." For those who were pursuing an industrial relations approach to Labor Economics, especially one sympathetic to labor unions, the device of the Phillips curve softens any criticism of unions based on their being a monopolistic imperfection. To the extent unions cause money wage rates to rise at a faster pace, they increase employment and output and reduce unemployment. In effect, in the world of the Phillips curve, unions are a "free lunch."

The Phillips curve concept is also consistent with Richard Lester's critique of marginalism. Lester (1946) put the dominant emphasis in labor market decisions on the demand for labor. He begins the summary of his findings with the statement (p. 81), "Market demand is far more important than wage rates in determining a firm's volume of employment." The message is very simple from an economic policy standpoint. Stimulate the economy through macroeconomic policy devices which will shift microeconomic labor demand curves, driving up money wage rates while increasing prices, output, and employment.

That was precisely the thrust of much of U.S. economic policy during the 1960s. At first, it seemed to work splendidly. Between 1961 and 1969, the unemployment rate fell from 6.7 percent to 3.5 percent while the rate of price inflation escalated from 1.0 to 5.5 percent. The U.S. had apparently walked right up a Phillips curve, just as the model had predicted. In 1967, though, in his Presidential address to the American Economic Association, Milton Friedman argued that this was an illusion, a temporary phenomenon. Three years later, in 1970, Friedman's judgment was confirmed. The money illusion in the labor market that had permitted the decline in unemployment in the 1960s had been only partial and temporary. When it disappeared as workers' wage demands caught up with the price increases of previous years, the Phillips curve shifted sharply to the right. Between 1969 and 1970, the unemployment rate rose from 3.5 to 4.9 percent. Meanwhile, the rate of growth in the GDP price deflator (fourth quarter to fourth quarter) declined from 4.6 percent in 1969 to only 4.4 percent in 1970. And, in 1971, prices rose by 4.7 percent and the unemployment rate soared to 5.9 percent. The Phillips curve had been grievously wounded.

VIII. *The Industrial Relations Front: The Revolution That Failed*

The last few sections of this discussion have focused largely on the labor economics dimensions of macroeconomics. We might ask, "What had been happening on the industrial relations front?" Largely, it had been business-as-usual in the post-war era. Some insight into this is provided by a content analysis of Labor Economics textbooks conducted by Arthur Ross and published in *Industrial Relations* in 1964. *Industrial Relations* was the second American journal to provide a specific outlet for industrial relations oriented research. It began publication in 1961 under the aegis of the Institute of Industrial Relations at the University of California (Berkeley). In his paper, Ross considers a dozen standard labor textbooks of the time, allotting the number of pages in each devoted to nineteen separate categories of subject matter. Among these are nine that qualify as being industrial relations subjects, history and theories of the labor movement, trade union structure and government, other employee organizations (including government unions), collective bargaining procedures and contracts, objectives and policies of management, political action by labor, industrial conflict, social security, and government regulation.

The texts averaged 541 pages in length and nearly sixty percent (315 pages on average) of the space was devoted to industrial relations topics. This is only modestly less than the distribution of content in the Millis and Montgomery volumes of the late 1930s and early 1940s. Thus, from the standpoint of textbook content, things were essentially the same.

That conclusion is somewhat misleading, though. The title of Ross's paper is, "Labor Courses: The Need for Radical Reconstruction," and it is part of a five-article symposium entitled, "Are Labor Courses Obsolete?" The editorial introduction to the symposium begins:

> Labor and industrial relations became a major field of study in American universities in the thirties and forties. The rise of the CIO, the passage of the Wagner Act, and the growth of the human relations movement all contributed to the spread of industrial relations departments, centers, and institutes throughout the country. From the thirties to the fifties industrial relations was considered one of the more challenging academic fields. Yet, today it is charged that, like unions, industrial relations is old before its time (p. 6).

The participants in the symposium are five major figures in the industrial relations field, Ross, Professor of Industrial Relations at the University of California (Berkeley); Jack Barbash, Professor of Economics at the University of Wisconsin; George P. Shultz, Dean of the Graduate School of Business and Professor of Industrial Relations at the University of Chicago; Charles A. Myers, Director, Industrial Relations Sector, at the Massachusetts Institute of Technology; and Neil W. Chamberlin, Professor of Economics at Yale University. Ross in particular is exceedingly critical of the standard course, to wit (p. 2):

> the course is dominated by unions, collective bargaining, hourly wages, and other incidents of manualism [manual labor], [and]

> Anyone who attempts to teach the standard labor course in the standard way, using any of the standard textbooks, ends by peddling an archaic product to apathetic customers.

What does Ross suggest for the course? He offers a sample outline based on 44 hours of class time. Despite his criticisms of the standard course, slightly more than half (23 hours) is assigned to the topics Employee Organizations (7 hours), Labor-Management Relations (9 hours), and Employment Opportunity and Economic Security (7 hours), subjects well within the purview of the so-called traditional Labor Economics course. However, the remainder of Ross's desired curriculum is a pastiche of sociology, psychology, and institutional history; and very little conventional economics.

Among the other contributors to the symposium, only Shultz directly answers the question posed in the negative. The remainder generally follow Ross's lead, albeit less forcibly, in calling for less attention being paid to the institution of the trade union and the substitution of other things in its stead, but *not* formal economics. In a sense, what they provide in the symposium is a revolutionary manifesto reflecting their disenchantment with unions as the focus of their intellectual endeavor. This call for revolution fails, in part because in some circles it was regarded as merely the complaints of people who had become bored with teaching the conventional Labor Economics course,[6] but largely because what they proposed to substitute would not have been a significant improvement.

IX. *The Revolution That Succeeded*

Meanwhile, though, without the benefit of a formal declaration of intent, another revolution was underway, one that spontaneously reflected many of the same concerns expressed by the contributors to the *Industrial Relations* symposium, although it substituted for the traditional material content that incorporated analysis grounded more centrally in the discipline of economics. It was a revolution whose leit-motif was "more economics," not less. In a way, it paralleled what had occurred in the case of the cliometric revolution that swept the economic history field.

To illustrate the nature of this spontaneous revolution, we will discuss the specifics of several examples of the revolutionary process at work. In the way of background, we note that the incidents we have chosen to describe have a common theme running through them, namely, the use of choice-theoretic models of behavior to motivate the actors in the various scenarios and the subjecting of the implications of the models to comparison with the real world.

The Economics of Discrimination. We begin by reporting on the work of Gary Becker in the field of discrimination. The basic theme of his classic 1957 work, *The Economics of Discrimination*, is that the act of discrimination, far from operating to the economic betterment of the discriminator, actually imposes significant costs on the perpetrator of discrimination. This suggests that market forces work to reduce discrimination through the assignment of these costs. Becker also provides empirical support for these propositions by showing that discrimination is more likely to occur in regulated and less competitive industries.

Investment in Human Capital. Next, we point to Theodore Schultz's Presidential address before the American Economic Association in December 1960. Its title is simply, "Investment in Human Capital." Schultz's basic thesis is straightforward (p. 3):

> The failure to treat human resources explicitly as a form of capital, as a produced means of production, as the product of investment, has fostered the retention of the classical notion of labor as a capacity to do manual work requiring little knowledge and skill, a capacity with which, according to this notion, workers are endowed about equally. This notion of labor was wrong in the classical period and it is wrong now.

Pursuing this point further, Schultz notes that, "Laborers have become capitalists not from a diffusion of the ownership of corporate stocks, as folklore would have it, but from the acquisition of knowledge and skill that have economic value."

Labor Mobility. At the individual level, the concept of human capital opens up the possibility that people, acting in accordance with a choice-theoretic framework, can make private choices that will enhance their economic prospects in life. An example of such a possibility is suggested in a paper presented at the Exploratory Conference on Capital Investment in Human Beings, held in December 1961. Funded by the Carnegie Corporation and sponsored by the National Bureau of Economic Research, the conference papers were published in a Supplement to the October 1962 issue of the *Journal of Political Economy.* Larry Sjaastad's paper, in his own words (p. 92), is an "effort . . . to place human migration in an investment context and in so doing to formulate testable hypotheses germane to observed migration behavior."

Such a treatment of human migration ran contrary to the received wisdom of the time. In a paper on the subject of migration published almost simultaneously with Sjaastad's, Robert Raimon (1962, p. 428) summarizes the conventional position as follows:

> In lieu of wage differences as the allocator of labor supplies, the labor market studies, especially the New Haven study, have advanced the job vacancy thesis — workers respond to job openings. Wage differences are regarded as of little importance in the allocation process in the sense that the adjustment of labor supplies to the changing needs of industry is more or less independent of wage differences.

This view was expressed in Herbert Parnes's survey (1954) of the labor mobility literature and was supported by Lloyd Reynolds (1951), Charles Myers (1957), Robert Lampman (1957), and Richard Lester (1957).[7] The specifics of the position were well stated by Lampman (1957, p. 629) in an interchange with Simon Rottenberg (1957):

> Researchers into the facts challenge the realism of classical wage theory, by offering the following findings: (1) workers' responses to questionnaires indicate that wage differences play a very small role in the choice process; (2) workers are often ignorant of job alternatives; (3) workers value security highly and hence are unresponsive to wage differences; (4) workers do not seem to calculate net advantages or act rationally in choosing among jobs.

The "classical wage theory" referred to by Lampman is well expressed in John R. Hicks's (1932, p. 76) remark, ". . . differences in net economic advantages, chiefly differences in wages, are the main causes of migration."

The exchange between Lampman and Rottenberg also included Lester (1956) and in many ways was a reprise of the Lester-Machlup debate about a decade earlier. Again, questionnaires are at the center of things, and the argument revolves about whether the important consideration is the actual behavior of people or what they think they are doing. Raimon focuses on the actual behavior by comparing net population migration, by state, over the interval 1950–1958 with the respective state per capita income levels. The results are striking. Spearman rank-order correlation coefficients between net migration and per capita income vary from 0.71 to 0.78, depending on the definition of income employed. Thus, variations in per capita income account for at least half the variation in net migration by state.

In the years that follow, much research is done on this question and it generally confirms the Raimon findings. Gallaway (1967, 1969), using longitudinal data from the American Social Security system's records, Gallaway and Vedder (1971), focusing on Census data over the interval 1850–1960, and Michael Greenwood (1969, 1970) are cases in point.[8] Greenwood's survey of the mobility literature (1975) replaces Parnes's (1954) views and in it he states (p. 411), "Migration does occur from low to high income regions."[9] Thus, in a two-decade period, there occurred a significant shift in attitude with respect to the position stated by Hicks (1932). At the end of the period, the debate was not so much whether differential economic advantages influenced mobility as it was the quantitative magnitude of the influence. This was a significant triumph for the "new" labor economics.

Regional Wage Differentials: A Brief Aside. An ancillary dimension of the mobility issue is the matter of factor price equalization. Hicks's "classical" wage theory implies that purposive factor migration would lead to a convergence of factor prices, including wage rates, among the several states. Work by Lloyd Reynolds (1951) and Clark Kerr (1954) calls this proposition into question. However, research consistent with the mobility findings of the 1960s (Gallaway, 1963; Scully, 1969) lend support to the factor price convergence notion.

Discouraged vs. Added Worker Effects. In the mid–1960s, Thomas Dernburg and Kenneth Strand (1964, 1966), as well as others, revisited an issue that had originated just prior to World War II[10] — the matter of systematic cyclical variation in the supply of labor. In a 1940 monograph, written for the Social Science Research Council, W. S. Woytinsky analyzes the hypothesis that during depressed economic times additional workers may enter the labor force, where, "By additional worker is meant the person who is in the labor market because of the unemployment of the usual bread winner in the family. . . " (p. 1). As to the magnitude of the phenomenon, Woytinsky estimates that perhaps 900,000 to 1,000,000 such workers were included in a November, 1937, census that recorded 7,845,000 unemployed people.

By itself, the presence of Woytinsky's additional workers could produce a backward-bending portion of an otherwise positively sloped labor supply curve at very low wage rates. In fact, it could even create a situation where no potential equilibrium exists between the quantity of labor demanded and the quantity supplied.

The added-worker hypothesis was questioned by Don Humphrey (1940) and Clarence Long (1942), both of whom suggested that there might also be a discouraged-worker effect. In Humphrey's words (p. 419), "Often overlooked is the possibility that a depression may bring withdrawals from the labor market as well as entries into it. Young workers continue in or return to school; some of the wives and daughters of the middle and upper classes work when jobs are easily obtained and wages high, but once out of work they drop out of the labor market for the duration of the depression because the pay is low and jobs are difficult to obtain."

Available data as of the era *circa* 1940 were not sufficient to enable distinguishing between these alternative hypotheses. Thus, things stood as they were until the 1960s. By then, the monthly labor force data that had been accumulated through the Current Population Survey permitted a resurgence of interest in this issue. A survey of this literature is provided by Jacob Mincer in 1966 and it generally concludes that the evidence supports the existence of both added-worker and discouraged-worker effects, although the discouraged-worker effect is dominant. Thus, the combined effect is that the quantity supplied of labor declines as the unemployment rate rises.

Other Developments. Other developments in the post-World War II period are worth noting. First, there is George Stigler's work on information (1961). This is extremely pertinent to modern labor economics since so much of the analytical framework revolves about the process of search in the labor market and workers' response to the acquisition and processing of information.

Second, there is the question of the economic impact of labor unions in the market for labor. From the standpoint of wage rates, several studies are suggestive, including John Maher (1956), Stephen Sobotka (1953), Lloyd Reynolds (1953), and Arthur Ross (1957). The classic work, though, is H. Gregg Lewis (1963), who estimates an overall union wage premium of 10–15 percent as of 1957–1958. The existence of such a premium implies the possibility of negative efficiency impacts (deadweight losses) associated with the presence of labor unions. This scenario has been modeled by Albert Rees (1963). Rees concludes that there are significant deadweight losses which accompany the institution of labor unions.

X. *Harbingers of Things to Come*

The presence of increased interest among labor economists in things more strictly economic in nature is reflected in multiple ways at this time. For one thing, an additional scholarly journal makes its appearance, the *Journal of Human Resources*. Its first issue appears in the Summer of 1966 under the sponsorship of multiple entities at the University of Wisconsin, the Industrial Relations Research Institute, the Center for Studies in Vocational and Technical Education, and the Institute for Research on Poverty. In the editorial note accompanying the initial offering (1966), Gerald Somers makes it clear that the primary, perhaps exclusive, interest of this new journal will be on the subject matter subsumed under the last two of the sponsoring organizations. This is confirmed by the Table of Contents of this issue, especially the lead article, "Investing in Human Capital," written by Burton Weisbrod.

In addition, there are new developments at the textbook level. A sprinkling of books appears that reflects the rising interest among scholars in labor market phenomena beyond the industrial relations scene. We mention four of them, all published by major purveyors of texts in economics. In chronological order, we begin with Allan Cartter's 1959, *Theory of Wages and Employment*, published by Richard D. Irwin. Its emphasis is on the economic theory dimensions of labor markets. Ten years later, in 1969, Richard Perlman's *Labor Theory* appears under the imprimatur of John Wiley. In addition to dealing with the theoretical aspects of labor markets, it pays significantly greater attention to the empirical evidence that has been emerging in the 1960s. This places the book overtly in the current of the "new" labor economics revolution.

The Perlman book was followed in rapid succession by Belton Fleisher's *Labor Economics: Theory and Evidence* (1970) by Prentice-Hall and another Richard D. Irwin book, Lowell Gallaway's, *Manpower Economics* (1971), both of which feature heavy doses of economic theory and empirical evidence. Admittedly, these books are relatively brief compared to the standard industrial relations oriented textbooks, ranging from 193 pages (Cartter) to 304 pages (Fleisher). Nevertheless, they provide an alternative to the industrial relations view. What they constitute is a preview of the labor economics texts to come.

XI. *The Revolution Triumphant*

Subsequent to the early 1970s, the triumph of the new labor economics became more complete and modern labor economics is the result. There were several reasons for this. First, the macroeconomic portion of the industrial relations paradigm, i.e., Keynesianism, fell into widespread disrepute, being replaced by other frameworks, such as Thomas Sargent's and Neil Wallace's (1975) and Robert Lucas's and Leonard Rapping's (1970) rational expectations. Perhaps more importantly, growth in private sector labor union membership ceased (Troy and Shiflin, 1985) and then began a precipitous decline, both absolutely and relatively. The basic fabric of the industrial relations position was unravelling.

At the same time, the opportunities for scholarly research of the new labor economics type were expanding. Different data sources, including both cross-sectional and longitudinal panels of individual observations, such as the National Longitudinal Survey of Youth, decennial Census tapes, and the Continuous Work History Sample information from the American Social Security Administration, became more and more available. Augmenting these data banks was the introduction of qualitative response analytical techniques for analyzing them (Amemiya, 1981), including the now familiar logit and probit methodologies. These techniques, under the rubric microeconometrics, are the focus of James Heckman's Nobel lecture (2001).

As the new labor economics expanded, the breadth of its subject matter also widened. Of special interest is the development of wage function analyses that incorporate a wider range of variables, including social characteristic and demographic measures of people. Examples are Kevin Murphy and Finis Welch (1990) and Zvi Griliches (1976). Quite naturally, such research took labor economics into considerations of the role of education in determining economic outcomes. There, the debate has been lively (Coleman, 1966; Scully, 1969; Card and Krueger, 1996; Hanushek, 1986, 1996).

There is more. In the realm of government oversight of the work site, W. Kip Vizcusi's (1992) estimates of the value of a human life permit the implementation of cost-benefit analyses of the usefulness of various workplace regulations. In the area of sports, formal analysis of the labor market for athletes, such as Scully (1974), has made significant progress. Finally, in response to a renewed interest in the phenomenon of immigration, a very substantial volume of new work has emerged (Abowd and Freeman, 1991; Borjas, 1994; Borjas et al., 1996; Chiswick, 1999; Freeman and Borjas, 1992; Simon, 1999; Simon et al., 1993; Vedder and Gallaway, 1996; Vedder et al., 2000).

In all fairness, it should be observed that the triumph of the new labor economics has not been total. There are vestigial remnants of the old order still among us that have overtones of the great debates of the 1930s and 1940s. For one, only recently, Card and Krueger (1994) have attempted a rehabilitation of the Richard Lester position on minimum wage rates, reprising the Machlup-Lester-Stigler contretemps, although the specifics are somewhat different. Among those responding directly to Card and Krueger are David Neumark and William Wascher (1998, 2000) and Finis Welch (1995).

Another example of this recidivism, and one widely cited in the macroeconomic literature, is the doctrine of efficiency wages. Essentially, the efficiency-wage argument postulates an interdependence between the real wage rate and the position of the productivity schedule of workers, arguing that higher (lower) real wage rates lead to greater (less) effort on the part of workers. Thus, it is maintained that a reduction in real wages will produce a negative shift in the entire productivity schedule for the labor input in the production process. Therefore, under certain circumstances, employers will be reluctant to initiate wage reductions in the face of the existence of cyclical unemployment. For a survey of this literature, see Janet Yellen (1984).

The efficiency-wage notion has the potential to generate the same outcome that Keynes so strongly suggested was the case in his *General Theory*, namely, that wage adjustments are ineffective in resolving labor market discoordination and that money wage rates tend to be rigid in a downward direction.[11] In Keynes's world, the downward rigidity came from money illusion on the part of workers. In an efficiency-wage scenario, it is the behavior of employers that generates the rigidity. Either way, the Keynesian vision of labor markets that will not clear is supported. The efficiency-wage argument is simply a reworking of the same basic issues of the 1930s from the perspective of the demand for labor.

XII. *The Modern Labor Economics Textbook*

From time to time we have reported content analyses of textbooks for the labor economics course. One final update along these lines is appropriate. We have examined six different textbooks with publication dates ranging from 1991 to 2000. In chronological order, they are R. F. Elliott (1991); Morgan Reynolds (1995); Lloyd G. Reynolds, Stanley H. Masters, and Colletta Moser (1998); Campbell R. McConnell, Stanley L. Brue, and David A. McPherson (1999); Ronald G. Ehrenburg and Robert S. Smith (2000); and George Borjas (2000). Four of these books are currently in multiple editions, the 11th for Reynolds, Masters, and Moser; the 5th for McConnell, Brue, and McPherson; the 7th for Ehrenburg and Smith; and the second for Borjas. Collectively, these books contain 95 chapters, only 11 of which deal with the material of the traditional industrial relations paradigm. Over the past half-century, the industrial relations share of the material in labor economics courses has shrunk from two-thirds or more to less than 12 percent.

XIII. *Concluding Remarks*

Our tale is told. Basically, we have traced the development of labor economics as a specialty in economics from its early twentieth century origins to the present. Along the way, we have witnessed a true intellectual revolution, one in which an earlier tradition that focused primarily on the institution of the labor union has been replaced by a perspective that emphasizes the various roles played by labor markets in an economic system. That earlier tradition contained very significant ideological elements, whereas its successor deals much more with the world of ideas. The debate that accompanied the transformation we have described continues to this day. However, as a general proposition, we feel it is safe to say that, over the course of the twentieth century, ideas triumphed over ideology and created modern labor economics.

NOTES

[1]Dunlop recommends as "convenient" a single index provided by Walter Layton and Geoffrey Crowther (1935; Appendix E, pp. 263–73).

[2]Interestingly, Dunlop is a classic example of this line of thinking. His piece in the *Economic Journal* is replete with discussion of the mechanics of the industrial relations process and how they lead to the empirical outcomes he reports.

[3]There are some additional contributions. Melvin Reder (1947) was favorably disposed to the marginal productivity theory while Fred H. Blum (1947) took a contrary view.

[4]Henry Aaron (1967) questioned certain dimensions of Gallaway's 1965 analysis.

[5]In the mid-1960s, an official government set of poverty definitions was adopted which were based on the work of Molly Orshansky.

[6]Professor Gallaway recalls the reaction of his colleague at the time, Herbert R. Northrup, another significant figure in the industrial relations field, as being along these lines.

[7]There was an occasional dissenter, such as Sumner Slichter (1957) and John R. Hicks (1932).

[8]Greenwood (1969, 1971) also showed that differential economic advantages were an important determinant of migration patterns in Egypt and India.

[9]There still remained bastions of the job opportunity thinking. In particular, see Ira Lowry (1966) and Cicely Blanco (1964).

[10]Among the other scholars involved in this issue were Albert Tella (1965) and the partnership of William Bowen and T. Aldrich Finegan (1965).

[11]In this respect, an interesting aspect of the Yellen article is its citing of a piece by Robert Solow (1979) entitled, "Another Possible Source of Wage Stickiness."

REFERENCES

Aaron, Henry. "The Foundations of the 'War on Poverty' Reexamined." *American Economic Review* 57 (December, 1967): 1229–40.

Abowd, John M. and Richard B. Freeman. *Immigration, Trade, and the Labor Market.* Chicago: University of Chicago Press, 1991.

Adams, Thomas S. and Helen L. Sumner. *Labor Problems.* New York: Macmillan, 1905.

Amemiya, Takeshi. "Qualitative Response Models: A Survey." *Journal of Economic Literature* 19 (December 1981): 1483–536.

Atkins, Willard E. and Harold D. Laswell. *Labor Attitudes and Problems.* New York: Prentice-Hall, 1924.

Barbash, Jack. "A New Approach to Teaching Labor Courses." *Industrial Relations* 4 (October 1964): 18–22.

Becker, Gary. *The Economics of Discrimination.* Chicago; University of Chicago Press, 1957.

Blanco, Cicely. "Prospective Unemployment and Interstate Population Movements." *Review of Economics and Statistics* 46 (May 1964): 221–22.

Bloom, Gordon and Herbert R. Northrup. *Economics of Labor Relations.* Homewood, Ill.: Richard D. Irwin, 1965.

Blum, Fred H. "Marginalism and Economic Policy." *American Economic Review* 37 (September 1947): 645–52.

Blum, Solomon. *Labor Economics.* New York: Henry Holt, 1925.

Borjas, George. "The Economics of Immigration." *Journal of Economic Literature* 32 (December 1994): 1667–717.

________ and Richard B. Freeman, eds. *Immigration and the Work Force.* Chicago: University of Chicago Press, 1992.

________, and Lawrence F. Katz. "Searching for the Effect of Immigration on the Labor Market." *American Economic Review* 86 (May 1996): 246–51.

Borjas, George. *Labor Economics.* New York: McGraw-Hill, 2000.

Bowen, William G. and T. Aldrich Finegan. "Labor Force Participation and Unemployment." In A. M. Ross, ed. *Employment Policy and the Labor Market.* Berkeley: University of California Press, 1965, pp. 115–61.

Bowley, Arthur L. *Wages and Income in the United Kingdom Since 1860.* Cambridge: Cambridge University Press, 1900.

Brissenden, Paul. "Labor Economics." *American Economic Review* 16 (September 1926): 443–49.

Card, David and Alan Krueger. "School Resources and Student Outcomes: An Overview of the Literature and New Evidence from North and South Carolina." *Journal of Economic Perspectives* 10 (Summer 1996): 31–50.

________. "Minimum Wages and Employment: A Case Study of the Fast Food Industry in New Jersey and Pennsylvania." *American Economic Review* 84 (September 1994): 772–93.

Carlton, F. T. *History and Problems of Organized Labor.* Boston: D. C. Heath, 1911, 1920.

Cartter, Allan. *Theory of Wages and Employment.* Homewood, Ill.: Richard D. Irwin, 1959.

Catlin, Warren B. *The Labor Problem in the United States and Great Britain.* New York: Harper and Brothers, 1926.

Chamberlain, Neil W. "Emphasizing the Labor Factor." *Industrial Relations* 4 (October 1964): 33–36.

Chiswick, Barry. "Are Immigrants Favorably Self-Selected?" *American Economic Review* 89 (May 1999): 181–85.

Clark, John Bates. *The Distribution of Wealth.* New York: Macmillan, 1899.

Cobb, Charles W. and Paul H. Douglas. "A Theory of Production." *American Economic Review* 18 (March 1928): 139–65.

Cole, G. D. H. *A Short History of the British Working Class Movement.* London: G. Allen Unwin, 1938.

Coleman, James. *Equality of Educational Opportunity.* Washington, D. C.: U.S. Office of Education, 1966.

Commons, John R. *Trade Unionism and Labor Problems.* Boston: Ginn and Company, 1905, 1921.

________. *History of Labour in the United States.* New York: Macmillan, 1926–1935.

Dernburg, Thomas and Kenneth Strand. "Cyclical Variation in Civilian Labor Force Participation." *Review of Economics and Statistics* 46 (November 1964): 378–91.

________. "Hidden Unemployment 1953–1962: A Quantitative Analysis by Age and Sex." *American Economic Review* 56 (March 1966): 71–95.

Douglas, Paul H. "The Movement of Real Wages and Its Economic Significance." *American Economics Review* 16 (March, 1926): 17–53.

________. *Real Wages in the United States, 1890–1926.* Boston: Houghton Mifflin, 1930.

________ and Martin Bronfenbrenner. "Cross-Section Studies in the Cobb-Douglas Function." *Journal of Political Economy* 47 (December 1939): 761–85.

Dunlop, John. "The Movement of Real and Money Wage Rates." *Economic Journal* 48 (September 1938): 413–34.

Dupuit, A. Jules E. "On the Measurement of the Utility of Public Works." *Annales des Ponts et Chausses* (1844).

Ehrenberg, Ronald G. and Robert S. Smith. *Modern Labor Economics*, 7th ed. New York: Addison Wesley Longman, 2000.

Elliott, R. F. *Labor Economics: A Comparative Text.* New York: McGraw-Hill, 1991.

Fleisher, Belton. *Labor Economics: Theory and Evidence.* Engelwood Cliffs, N.J.: Prentice-Hall, 1970.

Furniss Edgar J. and Lawrence R. Guild. *Labor Problems.* Boston: Houghton-Mifflin, 1925.

Galbraith, John Kenneth. *The Affluent Society.* London: Hamilton, 1958.

Gallaway, Lowell. "Labor Mobility, Resource Allocation, and Structural Unemployment." *American Economic Review* 53 (September 1963): 694–716.

________. "The Foundations of the 'War on Poverty' Reexamined." *American Economic Review* 55 (March 1965): 122–31.

________. *Interindustry Labor Mobility*. Washington, D. C.: USGPO, 1967.

________. *Geographic Labor Mobility*. Washington, D. C.: USGPO, 1969.

________ and Richard Vedder. "Mobility of Native Americans." *Journal of Economic History* 31 (September 1971): 613–49.

Gallaway, Lowell. "The North-South Wage Differential." *Review of Economics and Statistics* 45 (August 1963): 264–72.

________. *Manpower Economics*. Homewood, Ill.: Richard D. Irwin, 1973.

Gordon, Robert A. *Business Fluctuations*, 2nd. ed. New York: Harper and Row, 1961.

Gossen, Herman H. *The Laws of Human Relations and the Rules of Human Action Derived Therefrom* (1854: reprinted by MIT Press, Cambridge, Mass., 1983).

Greenwood, Michael. "The Determinants of Labor Migration in Egypt." *Journal of Regional Science* 9 (August 1969): 283–90.

________. "A Regression Analysis of Migration to Urban Areas of a Less Developed Country: The Case of India." *Journal of Regional Science* 11 (August 1971): 253–62.

________. "An Analysis of the Determinants of Geographic Labor Mobility in the United States." *Review of Economics and Statistics* 51 (May 1969): 189–94.

________. "Lagged response in the Decision to Migrate." *Journal of Regional Science* 10 (December 1970): 375–84.

________. "Research on Internal Migration in the United States: A Survey." *Journal of Economic Literature* 13 (June 1975): 397–433.

Griliches, Zvi. "The Wages of Very Young Men." *Journal of Political Economy* 84, Part 2 (August 1976): S69–S85.

Hansen, Alvin. "The Economics of Unionism." *Journal of Political Economy* 30 (August 1922): 518–30.

________. *After the War Full Employment*. Washington, D. C.: United States National Resources Planning Board, 1943.

________. "The Case for High-Pressure Economics." In A. M. Okun, ed. *The Battle Against Unemployment*. New York: W. W. Norton, 1965, pp. 53–60.

Hanushek, Eric. "The Economics of Schooling: Production and Efficiency in Public Schools." *Journal of Economic Literature* 24 (September 1986): 1141–77.

________. "Measuring Investment in Education." *Journal of Economic Perspectives* 10 (Fall 1996): 9–30.

Harrington, Michael. *The Other America*. Baltimore: Penguin Books, 1964.

Harrod, Roy F. "Mr. Keynes and Traditional Theory." *Econometrica* 5 (January 1937): 74–86.

Heckman, James J. "Micro Data, Heterogeneity, and the Evaluation of Public Policy: Nobel Lecture." *Journal of Political Economy* 109 (August 2001): 673–748.

Hicks, John R. *The Theory of Wages*. New York: Macmillan, 1932.

Hoxie, Robert F. *Trade Unionism in the United States*. New York: Appleton, 1917.

Humphrey, Don D. "Alleged 'Additional Workers' in the Measurement of Unemployment." *Journal of Political Economy* 48 (June 1940): 412–19.

Jevons, William Stanley. *The Theory of Political Economy*. London: Macmillan, 1871.

Johnson, Harry. "Unemployment and Poverty." In Leo Fishman, ed. *Poverty Amid Affluence*. New Haven: Yale University Press, 1966, pp. 182–99.

Kalachek, Edward. "The Determinants of Higher Unemployment Rates, 1958–1960." Doctoral dissertation, Massachusetts Institute of Technology, 1963.

Kalecki, Michael. "The Determinants of the Distribution of the National Income." *Econometrica* 6 (April 1938): 97–112.

Kerr, Clark. "The Balkanization of Labor Markets." In E. Wight Bakke, ed. *Labor Mobility and Economic Opportunity*. Cambridge, Mass.: MIT Press, 1954, pp. 92–110.

Keynes, John Maynard. *The General Theory of Employment, Interest and Money*. New York: Harcourt Brace, 1936.

_________. "Relative Movements of Real Wages and Output." *Economic Journal* 49 (March 1939): 34–51.

Killingsworth, Charles. *Nations Manpower Revolution*. Washington, D.C.: USGPO, 1963.

Klein, Lawrence. *The Keynesian Revolution*. New York: Macmillan, 1947.

Lampman, Robert. *The Low Income Population and Economic Growth*. Washington, D. C.: USGPO, 1959.

_________. "On Choice in Labor Markets." *Industrial and Labor Relations Review* 9 (July 1956): 629–36.

Layton, Walter and Geoffrey Crowther. *An Introduction to the Study of Prices*, 2nd. ed. London: Macmillan, 1935.

Lester, Richard. "Shortcomings of Marginal Analysis for Wage-Employment Problems." *American Economic Review* 36 (March 1946): 63–82.

_________. "Marginalism, Minimum Wages, and Labor Markets." *American Economic Review* 37 (March 1947): 135–48.

_________. "On Choice in Labor Markets: Comment." *Industrial and Labor Relations Review* 9 (July 1956): 641–42.

Lewis, H. Gregg. *Unionism and Relative Wages in the United States*. Chicago: University of Chicago Press, 1963.

Lipsey, Richard. "The Relation between Unemployment and the Rate of Change of Money Wage Rates in the United Kingdom, 1862–1957." *Economica* N. S. 27 (February 1960): 1–31.

Long, Clarence. "The Concept of Unemployment." *Journal of Political Economy* 57 (November 1942): 27–30.

Lowry, Ira S. *Migration and Metropolitan Growth: Two Analytical Models*. San Francisco: Chandler, 1966.

Lucas, Robert E. and Leonard A. Rapping. "Real Wages, Employment, and Inflation." *Journal of Political Economy* 77 (September/October 1969): 721–54.

Machlup, Fritz. "Marginal Analysis and Empirical Research." *American Economic Review* 36 (September 1946): 519–54.

_________. "Rejoinder to an Anti-Marginalist." *American Economic Review* 37 (March 1947): 148–54.

Maher, John. "Union, Nonunion Wage Differentials." *American Economic Review* 46 (June 1956): 336–52.

Malthus, Thomas R. *An Essay on the Principle of Population*. London: J. Johnson, 1798.

Marx, Karl. *Das Kapital*. Hamburg: Meissner, 1867.

McConnell, Campbell R., Stanley R. Brue, and David A. McPherson. *Contemporary Labor Economics*, 5th. ed. New York: McGraw-Hill, 1999.

Meade, James E. *Economic Analysis and Policy*. London: Oxford University Press, 1936.

Menger, Carl. *Principles of Economics*. Vienna: W. Braum, 1871.

Mill, John Stuart. *Principles of Political Economy*. New York: Appleton, 1884.

Millis, Harry and Royal Montgomery. *Labor's Progress and Some Basic Labor Problems*, Vol. 1, *Economics of Labor*. New York: McGraw-Hill, 1938.

_________. *Labor's Risks and Social Insurance*, Vol. 2, *Economics of Labor*. New York: McGraw-Hill, 1938.

_________. *Organized Labor*, Vol. 3, *Economics of Labor*. New York: McGraw-Hill, 1945.

Milnes, Nora. *The Economics of Wages and Labour*. London: P. S. King, 1926.

Mincer, Jacob. "Labor Force Participation and Unemployment: A Review of Recent Literature." In R. A. Gordon and M. S. Gordon, eds. *Prosperity and Unemployment*. Berkeley: University of California Press, 1966, pp. 73–112.

Murphy, Kevin and Finis Welch. "Empirical Age-Earnings Profiles." *Journal of Labor Economics* 8 (April 1990): 202–29.

Myers, Charles. "Two Neglected Areas in Traditional Labor Courses." *Industrial Relations* 4 (October 1964): 29–32.

_________. "Labour Market Theory and Empirical Research." In John T. Dunlop, ed. *The Theory of Wage Determination*. London: Macmillan, 1957, pp. 317–26.

Neumark, David and William Wascher. "Minimum Wages and Employment: A Case Study of the Fast-Food Industry in New Jersey and Pennsylvania: Comment." *American Economic Review* 90 (December 2000): 1362–96.

_________. "Is the Time-Series Evidence on Minimum Wage Effects Contaminated by Publication Bias?" *Economic Inquiry* 36 (July 1998): 458–70.

Okun, Arthur. "Potential GNP: Its Measurement and Significance." *Proceedings of the Business and Economics Statistics Section*, American Statistical Association, 1970.

Orshansky, Molly. "Counting the Poor: Another Look at the Poverty Profile." *Social Security Bulletin* 28 (January 1965): 3–13.

Parnes, Herbert. *Research on Labor Mobility*. New York: Social Science Research Council, 1954.

Perlman, Richard. *Labor Theory*. New York: John Wiley, 1969.

Perlman, Selig. *A Theory of the Labor Movement*. New York: Macmillan, 1922.

Persons, Charles E. "Labor Problems As Treated by American Economists." *Quarterly Journal of Economics* 41 (May 1927): 487–519.

Phillips, A.W. "The Relation between Unemployment and the Rate of Change of Money Wage Rates in the United Kingdom, 1861–1957." *Economica* N. S. 25 (November 1958): 282–99.

Raimon, Robert. "Interstate Migration and Wage Theory." *Review of Economics and Statistics* 44 (November 1962): 428–38.

Reder, Melvin. "A Reconsideration of the Marginal Productivity Theory." *Journal of Political Economy* 55 (October 1947): 450–58.

Rees, Albert. "The Effects of Unions on Resource Allocation." *Journal of Law and Economics* 6 (October 1963): 69–78.

Reynolds, L.G. et al. "Wartime Materials in the Field of Labor." *Papers and Proceedings of the Fifty-Ninth Annual Meeting of the American Economic Association* 37 (May 1947): 671–80.

Reynolds, Lloyd. *The Structure of Labor Markets*. New York: Harper, 1951.

_________. "The Impact of Collective Bargaining on the Wage Structure of the United States." In John T. Dunlop, ed. *The Theory of Wage Determination*. New York: St. Martin's Press, 1957.

_________, Lloyd G., Stanley H. Masters, and Colletta H. Moser. *Labor Economics and Labor Relations*, 11th. ed. Englewood Cliffs, N.J.: Prentice-Hall, 1998.

Reynolds, Morgan. *Economics of Labor*. Cincinnati, Ohio: Southwestern, 1995.

Ross, Arthur. "Labor Courses: The Need for Radical Reconstruction." *Industrial Relations* 4 (October 1964): 1–17.

________. "The External Wage Structure." In G. W. Taylor and F. C. Pierson, eds. *New Concepts in Wage Determination*. New York: McGraw-Hill, 1957.

Rothbard, Murray. *America's Great Depression*. Princeton: Van Nostrand, 1963.

Rottenberg, Simon. "On Choice in Labor Markets." *Industrial and Labor Relations Review* 9 (January 1956): 183–99.

Samuelson, Paul A. and Robert Solow. "Analytical Aspects of Anti-Inflation Policy." *American Economic Review* 50 (May 1960): 177–94.

Sargent, Thomas, and Neil Wallace, "Rational Expectations, the Optimal Monetary Instrument and the Optimal Money Supply Rule." *Journal of Political Economy* 83 (April 1975): 241–54.

Schultz, Theodore. "Investment in Human Capital." *American Economic Review* 51 (March 1961): 1–17.

Scully, Gerald W. "Interstate Wage Differentials: A Cross-Section Analysis." *American Economic Review* 59 (December 1969): 915–30.

________. "Pay and Performance in Major League Baseball." *American Economic Review* 64 (December 1974): 915–30.

Shultz, George P. "Labor Courses Are Not Obsolete." *Industrial Relations* 4 (October 1964): 23–28.

Simon, Julian. *The Economic Consequences of Immigration*, 2nd. ed. Ann Arbor: University of Michigan Press, 1999.

________, Stephen Moore, and Richard Sullivan, "The Effect of Immigration on Aggregate Native Unemployment: An Across-City Estimation." *Journal of Labor Research* 14 (Summer 1993): 299–316.

Sjaastad, Larry. "The Costs and Returns of Human Migration." *Journal of Political Economy* 70, Part 2 (October 1962): 80–93.

Slichter, Sumner. "The Worker in Modern Economic Society." *Journal of Political Economy* 34 (February 1926): 100–24.

________. "Thinking Ahead: On the Side of Inflation." *Harvard Business Review* 35 (September-October, 1957): 30.

Smith, Adam. *An Inquiry into the Nature and Causes of the Wealth of Nations*. London: W. Strahan and T. Codell, 1776.

Sobotka, Stephen. "Union Influence on Wages: The Construction Industry." *Journal of Political Economy* 61 (April 1953): 127–43.

Solow, Robert. "Another Possible Source of Wage Stickiness." *Journal of Macroeconomics* 1 (Winter 1979): 79–82.

Somers, Gerald. "Editorial Note." *Journal of Human Resources* 1 (Summer 1966): 3–4.

Stigler, George. "The Economics of Minimum Wage Legislation." *American Economic Review* 36 (June. 1946): 358–65.

________. "Professor Lester and the Marginalists." *American Economic Review* 37 (March 1947): 154–57.

________. "The Economics of Information." *Journal of Political Economy* 69 (June 1961): 213–25.

Tannenbaum, Frank. *The Labor Movement: Its Conservative Functions and Social Consequences*. New York: Putnam, 1921.

Tarshis, Lorie. "Changes in Real and Money Wages." *Economic Journal* 49 (March 1939): 150–54.

Tella, Albert. "The Relation of Labor Force to Employment." *Industrial and Labor Relations Review* 18 (February 1965): 69–83.

Troy, Leo and Neil Sheflin. *Union Source Book*. West Orange, N.J.: Industrial Relations Data and Information Service, 1985.

Truman, Harry S. *Memoirs*, vol. I, *Years of Decision.* Garden City, N.Y. : Doubleday, 1955.

Vedder, Richard and Lowell Gallaway. *Out of Work: Unemployment and Government in Twentieth-Century America*, updated edition. New York: New York University Press, 1997.

_______. *The Economic Impact of English Language Comprehension: Evidence for U. S. Immigrants.* Washington, D.C.: USGPO, 1996.

_______, and Stephen Moore. "The Immigration Problem: Then and Now." *Independent Review* 4 (Winter 2000): 347–64.

Vizcusi, W. Kip. *Fatal Tradeoffs: Public and Private Responsibility for Risk.* New York: Oxford University Press, 1992.

Ware, Caroline. *Labor Education in Universities: A Study of University Programs.* New York: American Labor Education Service, 1946.

Watkins, G. S. *Introduction to the Study of Labor Problems.* New York: Thomas Crowell, 1923.

Webb, Sidney and Beatrice Webb. *The History of Trade Unionism.* New York: Longmans, Green, 1920.

Weisbrod, Burton. "Investing in Human Capital." *Journal of Human Resources* 1 (Summer 1966): 5–21.

Welch, Finis. "Myth and Measurement: The New Economics of the Minimum Wage: Review Symposium: Comment." *Industrial and Labor Relations Review* 48 (July 1995): 842–49.

Witte, Edwin. "The University and Labor Education." *Industrial and Labor Relations Review* 1 (October 1947): 3–17.

Wood, George H. "Real Wages and the Standard of Comfort Since 1850." *Journal of the Royal Statistical Society* 72 (1909): 91–103.

Woytinsky, W. S. *Added Workers and the Volume of Unemployment.* Washington, D.C.: Social Science Research Council, 1940.

Yellen, Janet. "Efficiency Wage Models of Unemployment." *American Economic Review* 74 (May 1984): 200–205.