ON COST-PUSH THEORIES OF INFLATION IN THE PRE-WAR MONETARY LITERATURE*

Thomas M. Humphrey

Recent discussions of inflation have been dominated by two opposing views. On the one side are the *monetarists,* who argue that the basic cause of inflation is excessive monetary growth, i.e., a rate of increase in the money stock substantially in excess of the rate of growth of real output. Competing with the monetarist interpretation is the so-called *cost-push* view, which attributes inflation to a host of nonmonetary supply-oriented influences that raise costs and hence prices. Although modern cost-push theorists do recognize the importance of the monetary factor, they generally relegate to monetary growth the passive or accommodating role of ratifying cost increases in order to maintain high levels of production and employment. In the 1950's and 1960's cost-pushers emphasized union wage pressure and monopoly (administered) pricing policies—both underwritten by expansive monetary and fiscal policies—as the principal causes of inflation. Other frequently mentioned sources of cost inflation included the competitive struggle for relative income shares, labor and capital immobilities (and the associated wage/price rigidities), job-information deficiencies, and "ratchet effects" stemming from the downward inflexibility of specific prices to shifts in the composition of demand. Most recently, cost-pushers have blamed so-called *special factors,* i.e., such random nonmonetary shocks as crop failures, commodity shortages, and the OPEC-administered increase in the price of oil, for causing the surge of inflation to double-digit levels in 1973 and 1974.

In the course of the debate over inflation, it has become commonplace to refer to cost-push explanations as being of relatively recent origin. More than one analyst has stated that such theories extend back no further than the end of World War II and that they did not begin to flourish until the mid-1950's. Thus, for example, Professor William G. Bowen in his well-known essay "Wage Behavior and the Cost-Inflation Problem" writes that

> The role of wage behavior in the inflationary process has been one of the most hotly debated issues of the post-war years . . . . This is a new development. Prior to the end of World War II most discussions of inflation paid little, if any, attention to wage determination. Inflation was analyzed mainly in terms of changes in the stock of money and in aggregate spending relative to the supply of goods and services . . . . When World War II ended . . . economists in many Western European countries and in the United States began to speak of a 'new' type of inflation, commonly referred to as 'cost inflation.' [2; pp. 78-9]

Similarly, Professor George Leland Bach, in a recent book entitled, significantly enough, *The New Inflation,* states that

> a half century ago . . . most economists saw inflation as basically the result of excessive spending . . . generally based on an excessive creation of money . . . . More recently . . . these beliefs have been challenged. Certain economists see a new inflation—one caused by big unions pushing up costs and big businesses pushing up prices, with or without an excess of total spending. [1; p. 7]

The purpose of this article is to show that the foregoing interpretations are wrong; that, far from being new, cost-push theories were widespread in the 1800's and early 1900's; that such theories were thoroughly analyzed, and in some cases sharply criticized, by such leading neo-classical monetary theorists as Knut Wicksell, Irving Fisher, J. Laurence Laughlin, and John Maynard Keynes (of the *Treatise,* not of the *General Theory*); and, finally, that many of the issues in current and recent debates between cost-pushers and monetarists appeared in the earlier literature dealing with inflation.

The Role of Cost-Push Theories in Classical Monetary Debates Although the main focus of this article is on the neo-classical analysis of cost-push theories, it is not inappropriate to point out

* Reprinted with permission from *Banca Nazionale del Lavoro Quarterly Review,* No. 116 (March 1976). Slight alterations have been made in the present version.

that such theories predate the neo-classical period. For example, long before Wicksell and Fisher began to write on monetary questions in the late 1800's, cost-oriented explanations of inflation and deflation had already played prominent roles in the three leading monetary controversies of the nineteenth century, namely, the Bullionist, Currency-Banking, and Bimetallism debates.

The first of these controversies concerned the rise in the price of gold and silver bullion, foreign exchange, and commodities in Britain following the suspension of the gold standard during the period of the Napoleonic wars. Like modern monetarists who locate the source of inflation in the central bank, the Bullionists blamed the price increases on excessive monetary expansion by the Bank of England. Their opponents, the Anti-Bullionists, rejected this monetary explanation, attributing the price and exchange rate movements instead to non-monetary causes, notably domestic crop failures, the wartime disruption of foreign trade, and to heavy military outlays abroad. [4; p. 28] The Anti-Bullionists, moreover, laid particular stress on influences directly affecting the prices of individual commodities or groups of commodities, especially grains and other staple foodstuffs. Here is the essence of the cost-push view that general price disturbances stem from non-monetary influences that cause a series of changes in the individual prices of key commodities.

Other cost-push propositions that surfaced during the Bullionist debate include the notions of passive money and reverse causation. The former states that the money stock is an endogenous variable that responds passively to shifts in the demand for it. The latter holds that the channel of influence or direction of causation runs from the level of economic activity to money rather than vice versa. Both ideas appeared in the Anti-Bullionists' real-bills doctrine according to which the stock of money would never be excessive as long as it was issued only against bills of exchange arising from real transactions in goods and services. Here is the origin of the view that the stock of money is demand determined and therefore exerts no independent influence on prices and, moreover, that monetary growth is the result—not the cause—of increases in spending and economic activity.

The second debate in which cost-push theories played a leading role was the Currency-Banking controversy over the principles of regulating the banknote issue as embodied in the celebrated Bank Charter Act of 1844. In opposition to the quantity theory reasoning of the Currency School, leaders of the Banking School, particularly Thomas Tooke, developed non-monetary theories of price movements. Sir T. E. Gregory, in his *Introduction to Tooke and Newmarch's A HISTORY OF PRICES* (1924), writes that Tooke had an intense "preoccupation with the special factors influencing particular prices" which enabled him "to take full account of particular [price] variations" while simultaneously rejecting "the rigid connection between the quantity of money and the state of the price level postulated by the Currency School . . ." [9; p. 21] This preoccupation with special factors influencing particular prices continues to be typical of current cost-pushers, who attribute the rampant inflation of 1973 and 1974 to such random shocks as crop failures, the disappearance of anchovies off the coast of Peru, and the OPEC-imposed quadrupling of the price of oil.

Tooke, in his own version of the cost-push theory, stated that general prices were determined by *factor incomes* (wages, rents, profits, etc.) and not by the quantity of money. He did not explain how these price-determining factor incomes themselves were determined but left the question of their origin open to a variety of possible interpretations. His theory of price inflation is therefore suggestive of recent wage-cost-push and structural theories that (1) link inflation to some arbitrary non-monetary element in the institutional environment, e.g., autonomous increases in wage incomes, production bottlenecks, particular supply inelasticities, institutional price rigidities, etc., and (2) stress the inflationary role of the competitive struggle for relative shares in the national income. In any event, since factor incomes are simply the sum of factor service prices, it is obvious that Tooke came perilously close to explaining prices in terms of prices.

Other cost-push doctrines enunciated by the Banking School include the notions of a passive demand-determined money supply and the existence of reverse causation running from income to money rather than vice versa. These notions were embodied in the real-bills doctrine to which the Banking School, like its Anti-Bullionist predecessors, adhered.

Cost theories competed again with the quantity theory during the Bimetallism controversy over the proposed monetization of silver in the latter decades of the nineteenth century. Using the quantity theory, Bimetallists explained the secular price deflation of 1873-1896 as the failure of the money stock to grow as fast as real output. Supporters of the gold standard, however, adhered to cost theories of deflation.

Professor W. W. Rostow, in his *British Economy of the Nineteenth Century* (1948), has summarized these cost-push views. Gold monometallists, he writes,

> . . . mustered enormous evidence attesting to new methods and machines, cheapened transport costs, new raw material sources, and increased competition. They tended to deprecate the alleged monetary forces. They insisted, in short, that individual cost curves had fallen far and shifted to the right: that the average cost of producing a given output had decreased, and that diminishing returns —rising marginal costs—set in at a further point, requiring a higher level of demand to yield rising prices. They found in the case of each market no residual movement to be explained after its unique conditions were examined. No monetary factor was required. Their motto might have been . . . 'Gold has behaved very well.' [15; p. 60]

This completes the review of the role of cost-push theories of price movements in nineteenth century classical policy debates. The following paragraphs consider what such leading neo-classical monetary theorists as Wicksell, Laughlin, Fisher, and Keynes —all writing between 1896 and 1930—had to say about cost-push analysis.

Neo-Classical Views of Cost Inflation: Knut Wicksell Even a cursory examination of Wicksell's work shows how erroneous is the view that cost theories of inflation and deflation are of recent vintage. Thus, in Chapter 3 of his *Interest and Prices* (1898) he refers to such theories as already being "so widespread" that merely to question them "would seem almost paradoxical." He proceeds to describe how these theories have been used to explain "the fall of commodity prices during recent decades."

> The decrease in the cost of production of commodities, the improvements in transport, etc., are often put forward without further explanation as independent causes of the fall in commodity prices . . . . It is as though this kind of explanation replaces every other theory of the value of money. The reasoning is somewhat as follows: Technical progress results in a fall in the cost of production, and so in the price, first of one group of commodities, then of another. The extension of this fall in price to all, or to most, groups of commodities means a fall in the general level of prices . . . . [17; p. 25]

Conversely, when inflation is the problem,

> an explanation is looked for (as in the case of Thomas Tooke and his followers) in bad harvests, in an increase in the demand for particular commodities of which the supply remains unaltered, and in the effect of tariffs and indirect taxes in raising the prices of such commodities. [17; pp. 25-6]

Elsewhere he cites additional "alleged causes of a rise in prices" in which cost-pushers "take refuge." These include "the supposed screwing up of prices by cartels and trusts, the greed of middlemen, trade union claims for higher wages, etc." [18; p. 154]

Wicksell commented extensively on the monetary assumptions underlying cost-push theories. He stated that cost-push models are incapable of generating sustained inflation without an accommodating expansion in the money stock. In his words, inflation "can never be governed by the conditions of the commodity market itself (or of the production of goods)." Rather, it is "in the relations of this market to the *money market*" that one finds the causes of inflation. [17; p. 24] In short, cost-pushers must implicitly assume that cost increases will be automatically validated by permissive expansions of the money stock. As Wicksell put it, cost-push theories typically regard money "as a kind of amorphous, infinitely elastic, or plastic mass which adapts itself without any pressure to any price level and is therefore entirely passive in relation to the pricing mechanism, whilst the latter is regulated only by circumstances concerning the commodities themselves." [18; p. 154] Cost-pushers, he claims, have become so accustomed "to seeing in the modern credit and banking system a means of satisfying any demand whatever on the part of society for a medium of exchange that they cannot conceive of money influencing prices in one direction or the other." [18; p. 154]

Another feature of cost theories, noted by Wicksell, is their tendency to attribute macroeconomic phenomena to microeconomic causes. As Wicksell put it, "The same causes . . . cited to account for a rise or fall in the price of *any single commodity* are put forward . . . as the source of changes in the general level of prices." [17; p. 26]

Wicksell's criticisms of cost-push theories sound remarkably like those of modern monetarists. Cost-push reasoning, he says, "contains an inadmissible generalization; for arguments which are valid only when it is a matter of relative prices are applied to a field in which they no longer possess any meaning, i.e., to the absolute prices of commodities, expressed in money." [18; p. 154] Moreover, cost-pushers tend to ignore the possibility that, with the money stock and total spending both constant, cost-induced rises in the prices of specific commodities may be offset by compensating reductions in the prices of other items. For example, such cost-raising influences as

Import duties and taxes on consumption undoubtedly lead to higher prices of the commodities so taxed, but it is by no means certain that other goods will remain unchanged in price and that therefore the general price level will rise. In any case, there is nothing to prevent the possibility of a simultaneous pressure on and fall in the prices of other goods—as the Quantity Theory would lead us to suppose—so that the average price level would remain unchanged unless there existed some monetary cause for the change. [18; p. 156]

These same allegations—the confusion between relative vs. absolute prices, the failure to distinguish between specific prices and the average level of prices—continue to survive and flourish in modern monetarist criticism of cost-push reasoning. Thus Milton Friedman, commenting on the alleged source of the double-digit inflation of 1973-74, writes

What of [the rise in the prices of] oil and food . . . ? Are they not the obvious immediate cause of the price explosion? Not at all. It is essential to distinguish changes in *relative* prices from changes in *absolute* prices. The special conditions that drove up the prices of oil and food required purchasers to spend more on them, leaving less to spend on other items. Did that not force other prices to go down or to rise less rapidly than otherwise? Why should the *average* level of all prices be affected significantly by changes in the prices of some things relative to others? Thanks to delays in adjustment, the rapid rises in oil and food prices may have temporarily raised the rate of inflation somewhat. In the main, however, they have been convenient excuses for besieged government officials and harried journalists rather than reasons for the price explosion. [8; p. 73]

The basic source of inflation, Friedman contends, "is the faster growth in the quantity of money than in output." [8; p. 73] Neither Wicksell nor Friedman mentions a point emphasized by modern cost-pushers, namely, that with zero monetary growth and sticky (i.e., downwardly inflexible) prices, particular price increases will tend to generate compensating reductions not in other prices but rather in output and employment. Given the government's high-employment objectives, however, such outcomes, cost-pushers argue, will not be permitted to occur. Instead, specific price increases must necessarily be accommodated by whatever monetary expansion is required to maintain output and employment at high levels. Thus, the political constraints imposed by the commitment to full employment enter directly into the process by which individual price increases are translated into general inflationary pressures.

J. Laurence Laughlin If Wicksell was one of the harsher critics of the cost-push theory, then surely one of its strongest proponents was J. Laurence Laughlin, the first chairman of the Department of Economics of the University of Chicago. Today Chicago is identified with the quantity theory. At the turn of the century, however, it was a citadel of anti-quantity theory doctrine with Laughlin as chief expositor of that doctrine.

Laughlin stated his views on inflation first in an article in the 1909 *Journal of Political Economy* and again at the 1910 meetings of the American Economic Association in a session dealing with the causes of rising prices between 1896 and 1909. He starts out by rejecting the monetarist explanation of inflation.

The old [quantity] theory of Ricardo and Hume no longer holds undisputed sway . . . . There can be no question that the causes for the remarkable rise in prices . . . cannot be looked for in those influences directly affecting gold [i.e., money]. [11; pp. 257, 263]

Instead, the causes of inflation "must be sought in the [real] forces settling particular prices." [12; p. 178] These forces include "progress of invention and increased skill of management, . . . increased wages, higher cost of materials, higher customs-duties, and monopolies, or combinations." [11; pp. 265-6]

Laughlin described several distinct types of cost-push mechanisms, namely, (1) wage-push, (2) administered pricing, and (3) commodity shortages. His description of wage-push, quoted below, highlights the role of ratchet effects and unilateral wage-setting by trade unions. Both phenomena imply the existence of a substantial degree of monopoly power in the labor market. Curiously enough, however, unionized workers constituted only about 6 percent of the labor force when Laughlin wrote the following:

. . . there has been a marked advance in wages. [Thus] one of the main elements entering into the expenses of production of all kinds of goods has risen in cost, and had its effect in raising prices . . . . Once that a high rate of wages has been granted, it is not easy for employers to force a reduction . . . . The question is . . . whether the rise of wages is one of the causes of the rise of prices or whether the rise of prices has made possible the rise of wages . . . . There seems to be an influence independent of prices which has acted to raise the rate of wages. And this influence undoubtedly is due . . . to the pressure of labor-unions, which have been very active in recent years. [11; pp. 268-9]

Laughlin did not stop at wage-push. Describing the types of inflation stemming from monopoly administering pricing, Laughlin said that "the formation of combinations is unquestionably the strongest force in this period working for higher prices." [11; p. 270] "The whole *raison d'etre* of monopolistic combinations is to control prices, and prevent active competition. As every economist knows, in the conditions under which many industries are today organized, expenses of production have no direct relation to prices." [12; p. 185]

A third type of cost inflation cited by Laughlin is that due to raw material shortages and crop failures. Commodity shortages affect the rate of inflation directly and also indirectly through their feedback into wage demands. With reference to the latter, Laughlin remarked that the increased price of food resulting from crop shortages "wipes out all the gains of previous increases of wages, and drives laborers to repeat their demands for higher pay, thus working again to increase expenses of production." [12; p. 184]

Irving Fisher The most influential American critic of cost-push doctrines in the pre-war period was Irving Fisher, America's leading quantity theorist. Fisher's comments on cost-push theory are contained in many of his monetary works including his classic *The Purchasing Power of Money* (1911), his remarks at the 1910 AEA session on the causes of inflation, and his *Stabilizing the Dollar* (1920).

Fisher criticized cost-push theories on at least four grounds. First, he argued that such theories often fail to distinguish between changes in relative prices and changes in absolute prices. The result is confusion, with cost-pushers erroneously ascribing real or microeconomic causes to what is essentially a monetary or macroeconomic phenomenon. In Fisher's own words, cost-pushers "have seriously sought the explanation of a general change in price levels in the individual price changes of various commodities considered separately. Much of their reasoning goes no farther than to explain one price in terms of other prices." [5; p. 176] Elsewhere he listed 41 frequently cited non-monetary causes of inflation and noted that "while some of them are important factors in raising particular prices, none of them . . . has been important in raising the general scale of prices." [6; p. 11] Fisher pointed out that "no explanation of a general rise in prices is sufficient which merely explains one price in terms of another price." [6; p. 14]

Second, Fisher argued that anything that affects the price level must do so through changes in the stock of money, its velocity, or the volume of transactions: if these magnitudes remain constant, the price level cannot change. There is no reason to believe that changes in the specific prices of unionized labor or monopoly products will affect these macroeconomic variables. Therefore, if "trade unions seek to raise prices of labor while trusts raise prices of commodities," the general price level "cannot change." [5; pp. 179-80] The individual prices of union labor and monopoly products might rise, to be sure, but these changes in particular "parts of the price level may occur only at the expense of opposite changes in other parts." [5; p. 180]

Fisher's third criticism referred to the tendency of cost-pushers to resort to ad hoc explanations stressing temporary disturbances, random events, and other special factors. He termed this practice "the error of selecting special cases," and he argued that because such alleged causes of inflation occur only sporadically, are short-lived, and affect only a limited range of commodities they could not explain a sustained rise in the level of all prices. As he expressed it, "special causes working on selected commodities" would not "be general enough to explain the concerted behavior of . . . changes in the *general* scale or level of prices." [6; p. 16] Only excessive monetary growth could account for sustained inflation, or as he put it, "in almost all great and prolonged price movements the chief factor is the quantity of money." [6; p. 52]

The fourth reason for Fisher's opposition to cost-push theories was his belief that they would lead to inappropriate policies, including price controls and incomes policies. Such "vicious remedies," he argued, "are often not only futile, but harmful." [6; pp. 75, 60] He further stated that although incomes policies focus directly on "the problem of the size of our incomes," they are also "expected to solve the second problem too," i.e., the problem of inflation. Unfortunately, however, incomes policies cannot reduce inflation, and the inevitable result is that "disappointment follows their application." In short, "unless a genuine solution" to inflation is found, "a bewildered and infuriated public is apt to keep on trying every sort of alleged remedy, good, bad, or indifferent, often with disastrous results." [6; p. 81]

Finally, mention should be made of Fisher's 1926 contribution—only recently rediscovered [3]—to a topic that is central to current debates between monetarists and cost-pushers. The subject, of course, is what is now known as the Phillips curve trade-off between inflation and unemployment. Using analytical techniques that, in econometric sophistication, rival all but the very latest work in the Phillips curve, Fisher discovered a strong inverse relation between the inflation rate and the level of unemployment. [7] He attributed this relation to the tendency for business receipts to rise faster than expenses at the beginning of an unanticipated inflation. He suggested, however, that the trade-off was temporary and would vanish in the long run. Fisher thus became the first economist to distinguish between the short-run downward-sloping Phillips curve and the long-run vertical curve.

J. M. Keynes Cost-push theorizing was not limited solely to Swedish and American economists during the pre-war era. In Britain, John Maynard Keynes formulated a cost-push theory in his *Treatise on Money* (1930). At that time, of course, he still considered himself a neo-classical economist and a member of the Cambridge school with a tradition extending back at least to Alfred Marshall.

In the *Treatise* Keynes distinguished between two types of inflation: (1) profit inflation and (2) income inflation. The first refers to what today is popularly termed demand-pull inflation, i.e., a rising price level propelled by an excess monetary demand for the economy's available output. The second, however, refers to pure cost-push inflation characterized by autonomous (or in Keynes's words, "spontaneous") increases in wages and prices owing chiefly to "the powers and activities of Trade Unions." [10; pp. 167-8]

Keynes's analysis contained at least two contributions that presaged several post-war developments in the theory of inflation. First, he discussed the relationships among wages, prices, and productivity within a framework very similar to the so-called *price equation*, $p = w - q$, employed in modern cost-push models, where p, w, and q represent the percentage rates of change of prices, wages, and productivity, respectively. Second, he discussed the problem of combatting cost- or supply-induced inflation with demand-management weapons, i.e., monetary policy. Included in this latter discussion, incidentally, is a rudimentary treatment of the targets-instruments problem, in which Keynes pointed out that the simultaneous stabilization of prices, wages, and the foreign exchange rate is contingent upon the authorities' having possession of the requisite instruments of control.

Concluding Comments This article has concentrated on the cost-inflation analyses of four leading neo-classical monetary theorists whose work is representative of much of the monetary research conducted in the pre-war period. In doing so, the article has no doubt neglected numerous other economists who also discussed cost-push inflation in the pre-war era. For example, nothing was said about Gardiner Means's work in the 1930's on administered pricing [13], nor of F. C. Mills's analysis of rigidities in the structure of individual prices. [14; pp. 31-2] Both of these studies, of course, had important implications regarding the impact of autonomous increases in costs on price level movements. Nor was mention made of the statistical studies of Carl Snyder, studies that purported to show that over long periods of time all prices undergo roughly equiproportional changes, thus preserving the secular stability of price relationships. Snyder concluded from his findings that movements in the entire set of commodity prices could not be explained by real disturbances that cause random changes in relative prices, but that such price movements must be attributed to changes in the money supply, which affected prices as a whole. [16]

Nevertheless, the evidence presented is sufficient to provide strong support for the main contention of the article, namely, that cost-push theories, far from being of recent origin, were thoroughly and repeatedly discussed in the pre-war monetary literature. This is not to say, however, that the older and modern theories are identical. On the contrary, modern cost-push doctrine contains a crucial element missing from the older version, namely, the concept of *validation*. The term validation refers to the policy reactions of authorities committed to the goal of high employment. According to the validation doctrine, widespread price inflexibility and the growing public concern over unemployment exert pressure on the policy authorities to validate cost increases with expansive monetary-fiscal policies, thereby transforming specific price increases into generalized inflation. Still, many other contemporary cost-push propositions and criticisms—e.g., the inflationary impact of unions, monopolies, and commodity shortages; the emphasis on price rigidities and noncompetitive market behavior; the appeal to exogenous shocks or special factors; the role of passive monetary growth in accommodating cost increases; the alleged tradeoff between inflation and unemployment; the problem of fighting supply-oriented inflation with demand-management policies; and, finally, the wage-productivity-price nexus—all were inherited without serious modification from neo-classical analysts. It follows, therefore, that the analysis of cost-push inflation should be regarded not as a new development but rather as the revival and restatement of long-established ideas thoroughly familiar to earlier economists.

References

1. Bach, G. L. *The New Inflation.* Providence: Brown University Press, 1973.

2. Bowen, W. G. "Wage Behavior and the Cost-Inflation Problem," *Labor and the National Economy.* Edited by W. G. Bowen. New York: Norton, 1965.

3. Donner, A. and J. F. McCollum. "The Phillips Curve: An Historical Note." *Economica,* 39 (August 1972), 323-4.

4. Fetter, F. W. *Development of British Monetary Orthodoxy 1797-1875.* Cambridge: Harvard University Press, 1965.

5. Fisher, Irving. *The Purchasing Power of Money* (1911). 2nd revised edition, 1922. New York: Kelley and Millman, 1963.

6. ————. *Stabilizing the Dollar.* New York: Macmillan, 1920.

7. ————. "A Statistical Relation Between Unemployment and Price Changes." *International Labor Review,* 13 (June 1926), 785-92.

8. Friedman, Milton. "Perspective on Inflation." *Newsweek,* (June 24, 1974), p. 73.

9. Gregory, T. E. *An Introduction to Tooke and Newmarch's A HISTORY OF PRICES.* No. 16 in Series of Reprints of Scarce Works on Political Economy. London: London School of Economics and Political Science, 1962 (first published in 1928).

10. Keynes, John Maynard. *A Treatise on Money.* Vol. I. New York: Harcourt, Brace and Co., 1930.

11. Laughlin, J. Laurence. "Gold and Prices." *Journal of Political Economy,* 17 (May 1909), 257-71.

12. ————. "Causes of the Changes in Prices Since 1896." *American Economic Review: Proc.,* 1 (April 1911), 26-36, as reprinted in *Readings in Money and Banking.* Edited by C. A. Phillips. New York: Macmillan, 1916.

13. Means, Gardiner C. *Industrial Prices and Their Relative Inflexibility.* 74th Cong. 1st sess., Senate Document No. 13. Washington: 1935.

14. Mills, F. C. *Prices in Recession and Recovery.* New York: National Bureau of Economic Research: 1936.

15. Rostow, W. W. *British Economy of the Nineteenth Century.* London: Oxford University Press, 1948.

16. Snyder, Carl. "The Problem of Monetary and Economic Stability." *Quarterly Journal of Economics,* 49 (February 1935), 173-205.

17. Wicksell, Knut. *Interest and Prices.* Translated by R. F. Kahn. With an Introduction by Professor Bertil Ohlin. London: Macmillan, 1936 (first published in 1898).

18. ————. *Lectures on Political Economy.* Vol. II: *Money.* Translated by E. Classen. London: Routledge and Kegan Paul, 1935.